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# The Effect of Value Co-Creation on Social Enterprise Growth: Moderating Mechanism of Environment Dynamics

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**Abstract:** The traditional approach to demonstrate the growth processes of social enterprise still relies heavily on an internal perspective of resource and capability accumulation. However, it is insufficient to explain why some social enterprises grow quickly while other social enterprises do not. Based on the theory of value co-creation, this paper proposes a theoretical framework of the effect of value co-creation on social enterprise growth. A survey was conducted in China across 29 provinces and municipalities from October 2015 to March 2016, through the efforts of a market research group. The final number of usable questionnaires was 172. Specifically, by employing hierarchical regression models, this paper partially confirms the positive impact of value co-creation on social enterprise growth, while environment dynamics have a negative moderating effect on the relationship between value creation and the growth of social enterprises.

**Keywords:** social enterprises; social enterprise growth; value co-creation; environment dynamics; value co-destruction

## 1. Introduction

Since 2004, the concept and theory of social enterprise became more popular in China with the spread of academic conferences, seminars, and news reports [1]. Social ventures, defined as business that address social issues while creating economic value [2,3], play an important role in solving social problems in contexts in which social issues are complexly intertwined.

The market behaviors of social enterprises, such as resource utilization [4] and the ability of market development [1], are all driving factors for the growth of social enterprises. Under these conditions, how the business behaviors of social enterprises affect the growth of enterprises became a focus of attention. However, the current research on social entrepreneurship focuses on theoretical research, such as the definition of social enterprise boundaries and the identification of social entrepreneurs [5,6]. Empirical research began increasing gradually, but still focuses on the micro level, on entrepreneurs, entrepreneurial motivation, and entrepreneurial opportunities [6]. This results in an increasing need for more research and empirical evidence which involve more factors into the growth of social enterprises.

In particular, as the market behavior changes from the earlier logic of product-led to service-led [7], consumers actively seek an involvement in each process of business operation, and interact with enterprises in links of the business system to create value, i.e., value co-creation. In this context, the development of social enterprises cannot only depend on the single role of entrepreneurs, but also needs to promote cross-sectoral communication and resource complementation, so that various

stakeholders can participate in the value creation process of social enterprises [8]. For this reason, we claim that, as much as their commercial counterparts, more attention should also be paid to the processes of co-creations in the social enterprise domain, to better address the role of customers that are not residual for the survival and growth of a social enterprise [9]. Yet, we also want to provide a more fine-grained understanding of the mechanisms through which value co-creation can be appropriated by the social venture [10]. However, highly changing business environments may strongly increase uncertainty, thus impairing the recognition and judgment abilities of both parties of the co-creation process, thus possibly reducing the ability of producing value at all [11].

In sum, this paper integrates the micro-level perspective of social enterprise growth with a deeper understanding of the macro level, in relation to both the co-creation processes achievable with customers and the turbulence of the environment experienced by social enterprises.

In order to enlarge such a focus, this paper uses a large sample of Chinese social enterprises spanning many geographical and service contexts, across 29 provinces and municipalities in China (e.g., Beijing, Shanghai, Guangdong, Hong Kong, and Inner Mongolia), and a range of services (e.g., environmental protection, community development, helping vulnerable groups, education, and employment). Specifically, we applied a hierarchical regression, estimated with an ordinary least squares (OLS) method.

This paper contributes to the extant literature in several ways. Firstly, it does so by expanding the traditional model for social enterprise growth, mostly based on internal and individual variables, i.e., a micro level, with a prominent role of the value of the co-creation behaviors of customers which improves the resource efficiency, thus in turn promoting the growth of the social enterprise. Furthermore, this paper also explores how co-creation value processes that can occur are linked to the growth; the effectiveness of the value co-creation behaviors in dynamic changes of the environment are lessened and, thus, show a moderating role of the environment dynamics, providing explanations and suggestions for promoting the growth of a social enterprise.

The rest of the paper is organized as follows. In Section 2, a literature review was carried out regarding social entrepreneurship, social enterprise, value co-creation, and environment dynamics. Then, a framework of research was proposed among the three concepts: social enterprise growth, value co-creation, and environment dynamics, which accordingly formulated two hypotheses. Sections 4 and 5 detail the samples, measures, and results. Finally, we summarized the paper with a discussion, conclusions, and limitations.

## 2. Literature Review

### 2.1. Social Enterprise

Social enterprise (or social venture) is a term widely used in social entrepreneurship research [12]. The concept is derived from Defay's 1972 book, "The Sociology of Social Movements" [13], in which the concept of the social entrepreneur was first proposed. There are also many other theories about the origin of social enterprise. Some scholars believe that it originated from the concept of innovative non-profit entrepreneurs proposed by Young in 1986 [14]. Others believe that the concept of social enterprise originated from the concept of social economy proposed by Thierry Let Thai in 1998 [15]. Social enterprises did not originate from the spontaneous formation of the market, but from the charity activities led by the society [16]. In 2003, Dees came up with the famous concept of a "social enterprise spectrum" [17], in which social enterprise is defined as a multivariate complex, a continuum between pure charitable organizations and pure for-profit organizations. Thomas (2004) [18] extended the concept further, considering it as a form of social economy and one new element of the third sector; indeed, social entrepreneurship is sometimes referred to as the fourth sector.

Within the definition of the social enterprise concept, dual objectives are the most typical features of social enterprises, and pursue dual values (economic and social), instead of single economic values [3]. Thus, social enterprises are driven by two forces of social and economic goals alike [19].

However, when compared with commercial entrepreneurship, the economic value of the social entrepreneurship is regarded as a subordinate and only a necessary condition rather than a dominant scope, which is indeed the essential difference between social entrepreneurship and commercial entrepreneurship [20].

Due to the particularity of the Chinese market, the China Social Enterprise and Social Impact Investment Development Report (2013) divided social enterprises into three categories: broad significance, strict significance, and special significance. Social enterprises of a broad significance still prioritize profit maximization as their core goal, albeit while creating some social benefits. These entities are completely supervised by and registered to the local Industrial and Commercial Bureau and do not enjoy any preferential policy in terms of fiscal and tax reduction. Social enterprises of a strict significance assume a social mission as their primary goal but also operate in the market; however, the profits here obtained should be mandatorily assigned to investments in social programs and to the growth of the organization rather than to shareholders' returns. These entities are supervised by the local Civil Affairs Bureau, but also need to be registered to the local Industrial and Commercial Bureau for what concerns the market operation, i.e., receiving fiscal deductions and benefits. Finally, social enterprises of a special significance are purely charitable organizations not operating in the market, if not marginally with the creation of charity events or fundraising initiatives. These entities are only supervised by local Civil Affairs Bureaus and legally do not make profits.

This paper refers only to social enterprises of a strict significance in the Chinese case, and defines social enterprises as organizations driven by a social mission which aims toward the creation of social external benefits to solve social problems thanks to their participation in market operations organized in professional commercial modes.

## 2.2. Social Enterprise Growth

Enterprise growth is often associated with specific survival and success goals, such as financial indicators, which, like sales, takes different forms [21]. There are many factors that can be used to measure the growth of social enterprises. Some scholars studied their growth and tried explaining growth using business logic, such as the expansion of production scale and the continuous development of new customer groups [22]. Other scholars believe that the basic mission of social enterprises is to create more social externalities and solve social problems, rather than to satisfy the economic interests of individuals and shareholders [23], and that social enterprises should measure their growth by the subjective judgment of external stakeholders rather than the internal financial indicators of traditional commercial enterprises [3]; these views point to social considerations for the growth of social enterprises. Considering the dual goals of social enterprises, the definition of social enterprise growth is generally believed to consider both economic and social interests.

Social enterprises' ability to optimize, regulate, allocate, and use resources [24], as well as the innovation of a governance model and business model [25], is all believed to have an impact on social enterprise growth. As social entrepreneurship is more constrained by resources and opportunities than by commercial entrepreneurship, social entrepreneurs need to have a higher level of innovation and initiative to advance their actions [26]. However, social enterprises are faced with more obvious resource constraints in the economic environment. In the process of development, it is more difficult to obtain various resources due to the disadvantages of financing [27]. Compared with developed countries, social entrepreneurs in developing countries find more difficulties accessing and attracting resources for business growth [28]. Additionally, social enterprises have more constraints on human resources due to difficulties in meeting employee demands for economic compensation and skill upgrading [3]. Compared with commercial enterprises, social enterprises and social entrepreneurs are subject to more resource constraints and, therefore, have higher motivation to seek external resources for sustainable development [24].

### 2.3. Value Co-Creation

In the early stage, the concept of marketing mainly originated from the exchange process of agricultural products, and marketing was initially regarded as the transfer of ownership of commodities and their corresponding labor [29]. Under the goods-dominant logic (G-D logic), customers are the passive recipients of goods, and enterprises provide products of more value relative to competitors by improving the standardization of products to reduce costs [7]. However, with the emergence of the service economy, knowledge and skills became an important object resource, and the commodity-led logic can no longer explain the phenomenon; thus, a large number of enterprises consider themselves as service delivery carriers. Therefore, Vargo and Lusch (2004) [7] proposed “service-dominant logic” (S-D logic) to replace the original G-D logic, and constructed the value co-creating behavior based on the S-D logic. Under the service logic, services are not a particular form, but a general form of exchange [30]. Under this logic, service involves goods, information, technology, and many other contents, which are the main products provided by enterprises to customers, and this is the basis of their economic activities. Services replace goods as trading objects, and the value of goods comes from helping customers create value. The enterprise is only responsible for delivering the value proposition, and the value is no longer created by the enterprise alone, but co-created by the enterprise and the customer.

The original concept of value co-creation was based on different logics. Vargo and Lusch’s theory was based on the macro perspective of economic development and evolution models, while Prahalad and Ramaswamy’s definition was from the perspective of strategic management and market competition, which was used to guide the enterprise to adjust its business strategy and enterprise operation according to the new value creation method.

In their study, Prahalad and Ramaswamy [31] cited doctors as a typical example, and pointed out that the dialogue between doctors and patients can provide more information to both sides, and patients are then more aware of the medical information and more willing to cooperate with treatment. They pointed out that, in modern business, consumers try breaking through the traditional market constraints and, accordingly, enterprises can no longer design and develop products and marketing without intervention. The core of corporate co-creation lies in the interaction between customers and the company, and the experience of co-creation is the foundation of value establishment. The market should act as a platform rather than a target; under this concept, customer participation value creation can bring higher benefits and value to the enterprise, resulting in scholars starting to value the concept of value co-creation behavior in enterprise operations.

Based on the S-D logic of Vargo and Lusch and the co-creation concept of Prahalad and Ramaswamy, many scholars further perfected the concept of value co-creation. Payne et al. (2008) [30] studied how customers join in enterprise value co-creation, and divided the co-creation process into the customer value co-creation process, the supplier value creation process, and the customer and supplier value interaction process. Since both the enterprise and the customer cannot control all the conditions for value creation, the process of value creation is formed by the two parties’ joint input of resources to create value [32]. In the process of resource input, customers should be the core leaders of value, participate in the production process through the channels provided by enterprises, and create products and services [33]. It is believed that value co-creation can reduce the bias of enterprises in the process of making and evaluating decisions [34] and enable consumers to obtain multi-dimensional customer value so as to form customer satisfaction and customer loyalty [35]. Sun Li et al. (2015) [36] first extended the concept of co-creation from commercial enterprises to social enterprises, and pointed out that this behavior can encourage all parties to participate in and solve social problems more effectively. Pellicano et al. (2014) [37] demonstrated the importance of value co-creation in the process of social entrepreneurship and social innovation. However, these two articles provide mainly theoretical argumentation and lack actual research confirmation. Lan (2015) [38] studied the influence of multiple stakeholders on the growth of social enterprises from the perspective of entrepreneurial opportunity co-creation. Katre and Salipante (2012) [39] pointed out in their research

that successful social entrepreneurs would achieve their feedback on social goals, ideas, and products and services through diverse groups, and by constantly revising them, which also conforms to the concept of value co-creation. Overall, value co-creation can be defined as a process of creating value for both parties and providing problem solutions by following the concept of S-D logic, in which consumers and enterprises make use of the linkage between customers' own resources and enterprise resources [33]. As a result of the social enterprise having its own business logic, while value-creating behavior effectively explains how the business enterprise enhances customer stickiness and customer loyalty, it also effectively explains the social enterprise in the process of operation through the effective use of relatively scarce resources, creating more intrinsic value for both customers and enterprises, and solving social problems.

#### 2.4. Environment Dynamics

Environment dynamics is the result of multiple forces acting simultaneously, including government policies, enterprise size, industry competitors, technology, and market risks [40]. Environment dynamics was confirmed as having a significant impact on an organization's knowledge and capabilities [41]. Numerous studies confirmed the moderating effect of environment dynamics on enterprise performance, such as organizational learning [42], the ability to organize, coordinate, and integrate resources [43], external knowledge search and integration mechanisms [44], and innovation externalization [45]; therefore, the promotion of performance is subject to the moderation of environment dynamics.

Based on previous researches, the measurement of environment dynamics can be divided into three categories. The first is to define dynamic changes. For example, Finkelstein and Boyd (1998) [46] classified them into multiple factors such as rate of change, unpredictability, and instability. Secondly, a large number of scholars defined and divided the environment dynamic dimensions into the two dimensions of technological change and market demand [47,48]. Thirdly, by referring to the external environment analysis models such as political, economic, social, and technological (PEST) and Porter's five forces, the dynamic nature of the environment is defined as the degree of change, including multiple factors such as policy, demographic statistics, social culture, and industrial relations, in addition to the market and technical environment [42,43,49].

Social entrepreneurship is determined by the dual nature of social and economic goals and constrained by the political and economic institutional environment [50]; policy factors are its important external conditions in particular [51]. In addition, social entrepreneurship has the influence of volunteers and other staff relations [52]. Simply considering the environment dynamics of social enterprises from the perspective of technological and market changes cannot meet the multiple environmental impacts of social enterprises themselves.

Based on the nature of social enterprises, this paper believes that the third category of environment dynamics should be referred to and should define environment dynamics as the unpredictable state of the constantly changing external environment. Such changes should be considered based on the dynamic changes of stakeholders and multi-dimensional factors such as technology, government, and the macroeconomic situation.

Most researches on social entrepreneurship related to environment dynamics focused on exploring how social entrepreneurship can change a turbulent social environment [53,54]. A few articles discussed the impact of the environment on the growth of social enterprises (e.g., Douglas et al., 2007) [55]; however, there is still a lack of empirical research. In addition, there is also a lack of discussion on the specific benefits of customer value co-creation under the dynamic change of environment. This paper fills these two research gaps.

### 3. Hypotheses

#### 3.1. Value Co-Creation and Social Enterprise Growth

Based on the S-D logic, value co-creation is affected by the social network related to the enterprise [56]; value co-creation is the acquisition of resources through social networks, especially through the exchange and interaction of knowledge and skills. The research of Desa and Basu (2013) [24] indicated that, faced with the situation of resource scarcity, social enterprises seek resources and optimize existing resources to form sustainability and achieve external competition. The content of value co-creation refers to customer contribution resources and capabilities [57], which can make up for the shortage of resources inherent in social enterprises to some extent. At the same time, customers who have much external information as a key resource can provide effective social innovation ability for social enterprises [37]. In the practice of value co-creation, there are similar behaviors and characteristics of treating customers as temporary employees. Considering the shortage of employee resources in a large number of social enterprises [58], this resolves the resource defects of enterprises to some extent.

Due to the dual logic of the commercial and social nature of social enterprises, and the fact that the customers of social enterprises are not beneficiaries of social interests in a large number of practices, in this case, the construction of the competitive advantage of social enterprises becomes the key for them to obtain profits and continue creating social value. Value co-creation can effectively influence customer loyalty [59], the enterprise's brand value [60,61], product design capability, and speed of marketing [62]; these elements can satisfy the social enterprise's commercial appeal, securing sources of profits, which in turn can satisfy the needs of social enterprise growth.

At the same time, the success factors of social enterprises are influenced by the degree to which the public, especially customers, accept their entrepreneurial ideas [9]. Value co-creation can effectively make customers perceive the corporate image and establish a connection with it to form a sense of identity [59]. Consumers hope to play a role in the operation of the organization in order to create value in line with their ideas, and the value co-creation behavior in social enterprises also contains the process of customer participation to define and create social value together [37]. In this case, customer participation creates the overall social benefits [63]. Baldwin and Hippel (2011) [64] also emphasized that the value co-creation in business enterprises improves social welfare itself. Therefore, it can be considered that the customer value co-creation behavior of social enterprises effectively meets the social externalities and social goals themselves.

The growth of social enterprises needs to consider the dual goals of economic and social interests, and the value co-creation behavior itself may play a role in promoting resource acquisition of social enterprises, commercial competitive advantages, customer recognition, and social externalities. Accordingly, this paper proposes the following hypothesis:

**Hypothesis 1 (H1):** *The value co-creation of social enterprises has a significant positive effect on the growth of social enterprises.*

#### 3.2. Moderating Effect of Environment Dynamics

When an enterprise is in a highly changing environment, it is also in a highly uncertain situation, in which a large number of non-structural problems occur [65]. The ability of a start-up to acquire, integrate, and create value is often affected by the dynamics of the environment [10]. Sensible increments in the environment dynamics may also bring uncertainty, which makes start-ups unable to better identify and understand the correlation between environmental factors and resource elements, and affects enterprises in selecting adaptive resources to create value [66]. Within a highly changing environment, enterprises' ability to integrate and operate resources may be weakened, which consequently weakens the benefits brought by value creation.

In consideration of the concrete integration and utilization of resources, value co-creation enables enterprises to acquire operational resources from the client side and create value for both parties, and operational resources, such as knowledge and information provided by customers, are some of the important benefits added by value co-creation [57]. Within the interaction between an enterprise's external knowledge search and the external environment, the dynamic change of the enterprise's environment affects the knowledge acquisition process adopted by the enterprise for problem solving [44]. It takes a large amount of manpower, time, and cost to integrate external knowledge [67]. This may be difficult for social enterprises to bear under the dual constraints of human resources and capital, or it may weaken the benefits of value co-creation.

In addition, Järvi et al. (2018) [68] pointed out that, due to the enhancement of customers' rights of expressing views, the reluctance of customers to make changes in the process of value creation is an important factor of failure, which leads to the rigidity of the organization and the inability to adapt to market changes. Moreover, in the process of value co-creation, if either of the two parties (the enterprise and the consumer) cannot obtain or provide information comprehensively, this causes devastating results to the process of value co-creation [11]. However, due to the large amount of uncertainty brought about by the highly changing business environment, the recognition and judgment ability of information of both parties in value co-creation is definitely affected, which also indicates that the environment dynamics may lead to negative adjustment.

On the whole, the effect of environment dynamics on social enterprise growth is still little considered in studies. However, based on the above analysis of resource acquisition, integration, and co-creation failure factors, this paper believes that environment dynamics affects the growth of social enterprises and plays a negative moderating effect. Accordingly, the following hypothesis is put forward and the research model is shown as Figure 1.

**Hypothesis 2 (H2):** *Environment dynamics have a negative moderation effect on the relationship between value creation and social enterprise growth.*

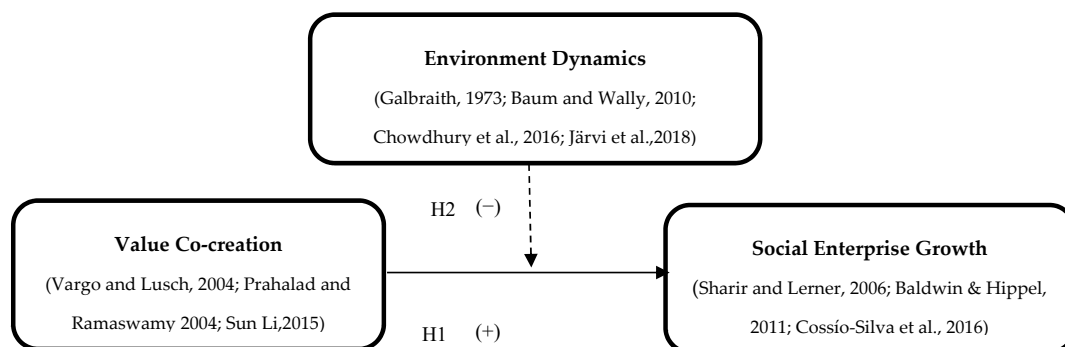


Figure 1. Research model.

## 4. Materials and Methods

### 4.1. Sample

Social enterprises are still in the preliminary stage in China. A large number of social enterprises were established for a short time and are still in the process of incubation, with few mature enterprises.

At present, as premised in the literature review, there is no legal classification of social enterprises in China and this de facto condition can be only inferred. In order to collect relevant research data, we established a collaboration between an "academic team" that included two university professors and three graduate students, which was in charge of determining the appropriateness of the sample to be targeted, and an "operative team" composed of 22 staff members from a market research company, in charge of performing the survey through face-to-face interviews.

To determine the sample, we used the theoretical definition of a social enterprise in a strict sense (China Social Enterprise and Social Impact Investment Development Report, 2013) and, from that, we created the following set of operational characteristics: organizations under the supervision of the Civil Affairs and the Industrial and Commercial Bureaus; organizations which operate in the market instead of receiving donations only; organizations with a primary social mission while economic benefits are taken into account only as a secondary aspect; organizations where profit distribution mainly goes to social investments and enterprise growth rather than to shareholders.

Based on above elements, the academic team searched the online archives of the local Civil Affairs Bureaus, and organization institutional websites, online and press materials, and social media (QQ and Wechat), as well as news, academic and government reports, etc. to find a list of suitable companies.

Whether an organization is actually a social enterprise was mainly determined by judging the primary mission and goals of the organization, i.e., if they were mainly dedicated to the creation of social value such as environment protection (e.g., waste management services, marine protection, etc.), community development (e.g., community management service stations, community logistics services, etc.), helping vulnerable groups (e.g., rehabilitation stations for disabled people, marriage for disabled people, senior citizen services, etc.), education (e.g., HOPE primary schools, support education service, library, etc.), providing jobs (e.g., offering jobs to disabled people and the reconstruction of post-disaster areas). We preferred a rather ample spectrum of sectors inquired for the explorative nature of the paper so as to have a more valid generalizability of our results. Yet, it was ensured to include only organizations showing consistent and stable flows of revenue (commercial activities), while also registered to local Industrial and Commercial Bureaus, coupled with social programs with a quite good degree of innovativeness.

Through this comprehensive approach, it was possible to exclude either pure foundations and non-governmental organizations (NGOs) that solely operate through donations, or more traditional commercial organizations, which are only partly involved in social problem solving [19]. The academic team confirmed 803 companies as original samples all over China.

Subsequently, the operative team (the staff of the market research company) started the door-to-door collection of data, submitting the survey in a face-to-face interview with owners, founders, or top managers. After initial contact via telephone, 275 organizations agreed to be interviewed. During the interviews, 82 companies were rejected due to difficulties in communication, misunderstandings, and later unavailability. Among the 193 completed questionnaires, some were unsuitable, due to having incomplete information, or the organization not matching the specific definition of social enterprise. The final number of usable questionnaires was 172.

The data collection covered a period of time of more than half a year from October 2015 to March 2016, and each interview lasted 15 to 30 min depending on the interviewee's attitude.

The characteristics of the sample are shown in Table 1. The overall sample was made up of more males and a higher level of education, which is consistent with the current situation in China. The years of working were evenly distributed; most of them were starting a business for the first time, but nearly half (48.8%) of the respondents worked as business managers. We also explored the social problems that the surveyed enterprises were mainly committed to solving. It can be seen that "helping vulnerable groups" was the most concerned issue by social enterprises, accounting for 44.2%, which includes specific social problems such as helping disabled children, poverty alleviation, helping children with autism, etc. There are also a large number of enterprises focused on "community development" (community volunteering, community work, community culture, etc.), "environmental protection" (waste treatment, desert greening, environment protection equipment, etc.), and "education" (supporting education, HOPE primary schools, etc.), with the proportions reaching 25%, 24.4%, and 23.3% respectively. The proportion of enterprises "providing jobs for disabled people" is the lowest, with only 8.1%. According to the sample results, a large number of enterprises try solving two or more social problems, and the number of these enterprises reached 25.6%.



**Table 1.** Characteristics of the samples.

Characteristics of Samples	Ratio/Mean Value
<b>Gender</b>	
Male	66.3%
Female	33.7%
<b>Education background</b>	
Junior high	6.4%
Senior high	23.8%
Undergraduate	48.3%
Postgraduate and above	21.5%
<b>Management experience</b>	
Yes	48.8%
<b>Entrepreneurial experience</b>	
Yes	9.3%
<b>Social problem committed to solve</b>	
Environment protection	24.4%
Community development	25.0%
Helping vulnerable groups	44.2%
Education	23.3%
Providing jobs for disabled people	8.1%
<b>Mean age</b>	37.7
<b>Mean work experience (years)</b>	12.1

#### 4.2. Measurement

##### Independent Variable

This research focuses on the value co-creation concept being the variable of interest. However, such a variable was previously mainly studied in the context of commercial enterprises; thus, there is no research scale directly related to the value co-creation process specifically occurring in social enterprises. This study modifies and improves the scale based on the existing value co-creation scales, and verifies the reliability and validity of the scale using statistical methods (Appendix A).

At present, the scale related to value co-creation is diversified. Yi and Gong (2013) [69] measured value co-creation in two dimensions of customer behavior: participation behavior and civic behavior. However, the scale is mainly used from the perspective of the customer, and not the enterprise. A small number of researchers developed scales with four dimensions: dialogue, channel, risk, and transparency [70,71]. However, in a large number of relevant empirical studies, the measurement of key co-creation behavior is mainly centered on how to evaluate the value co-creation. For example, Zhang and Chen (2008) [58] measured value co-creation using four items: market and sales, service, new product development, and temporary staff; Ma et al. (2015) [72] used items such as product development, decision-making advice, strategic discussion, and relationship maintenance behavior. Aarikka-Stenroos and Jaakkola (2012) [57] pointed out that value co-creation behavior includes five aspects: requirement discovery, process and resource organization, product design and solution, solution application, and management of value conflict. Therefore, this paper measures the independent variables of value co-creation by measuring critical value co-creation behaviors.

The scale of this paper was based on Ngo and O’Cass’s scale (2009) [73], which proposes five items: “we diagnose problems of the demand side with customers”, “we design, produce, or offer services with customers”, “we set up a joint team, to solve the issues of products and services”, “we have many face-to-face communications with customers”, and “we organize processes and resources together with customers”. As the scale is measured based on commercial enterprises and social enterprises having social benefit externalities, it may be different from commercial enterprises to some extent. This paper makes further revisions after referring to the value co-creation literature of social enterprises and public sectors. Among them, Voorberg et al. (2015) [74] pointed out in their study on public sector citizens’ participation to promote social innovation that, in the process of value co-creation, risks should be considered and management opinions should be aligned, which is consistent with Aarikka-Stenroos and Jaakkola’s (2012) [57] measurement of value co-creation behavior. Meanwhile, it was also pointed out that the two parties provide resources to each other to promote the key behavior

of value formation. At the same time, the research of Pellicano et al. (2014) [37] also showed that, in addition to the same value co-creation behavior as commercial enterprises, more consideration should be given to the sharing and acquisition of resources. Therefore, we put forward the two items of “we share resources with customers” and “we jointly make judgment and take risks when encountering interest conflicts”. To sum up, the scale consisted of seven items; the scale was measured using a Likert scale of five, where 1 stood for strongly disagree, and 5 stood for highly agree.

The data show that Cronbach’s alpha coefficient of value co-creation was 0.757; thus, the scale reliability of the formal survey can be considered as high.

According to confirmatory factor analysis,  $\chi^2/DF$  was 2.289, GFI is 0.957, RMSEA was 0.087, NFI was 0.937, TLI was 0.935, and CFI was 0.963, which demonstrates its higher validity.

### Dependent Variable

The dependent variable of this study was the growth of social enterprises. Due to the consideration of dual interests of social enterprises [17], the traditional financial performance index cannot measure the growth of social enterprises well. In comparison, the subjective evaluation method related to corporate growth could be adopted [3].

Since social enterprises have the same economic needs as commercial enterprises, economic considerations are the key to the growth of social enterprises [75]. From this perspective, enterprise sales, number of employees, and market share [76,77] are important economic measurement dimensions of enterprise growth. At the same time, the consideration of social benefits, donations, and beneficiaries can tell whether social enterprises are recognized and favored by investors, and social beneficiaries are the direct factors of social interest [38]. Based on this, in order to effectively demonstrate the dual attributes of social enterprises, this paper made appropriate modifications based on Murphy et al.’s (1996) [78] enterprise growth scale, which contained five items in total, measured by a Likert scale of five, where 1 represented strong disagreement and 5 represented high agreement. The items included the following: (1) compared with competitors or similar enterprises, the number of employees in this enterprise grows rapidly; (2) compared with competitors or similar enterprises, the number of beneficiaries grows rapidly; (3) compared with competitors or similar enterprises, the company’s sales growth is very fast; (4) the scale of the enterprise is expected to continue expanding; and (5) it is expected that the various corporate donations will continue expanding.

The data show that Cronbach’s alpha coefficient of value co-creation was 0.765; thus, the scale reliability of the formal survey can be considered as high.

According to confirmatory factor analysis,  $\chi^2/DF$  was 2.646, GFI was 0.977, RMSEA was 0.098, NFI was 0.968, TLI was 0.948, and CFI was 0.979, which demonstrates its higher validity.

### Moderating Variable

Because of the dual goals of social enterprises, the simple market and technical factors cannot meet the multiple external dynamic considerations of social enterprises, and they are constrained by the political and economic institutional environment [50]; policy factors are important external conditions in particular [51]. In addition, as they are affected by the relationship among volunteers, employees, and other factors, industrial relations should be considered as important factors in the change of the external environment [52]. Therefore, based on Chen and Wang’s scale (2012) [42], this paper makes appropriate modifications to the measurement of environment dynamics, including seven dimensions: competitors, customers, suppliers, industrial relations, technological progress, government regulation, and macroeconomic situation. Similarly, the five-point Likert scale was used to ask the surveyed companies to evaluate the environment changes according to their own organizational status, where 1 stood for very few changes, and 5 stood for dramatic changes.

The data show that Cronbach’s alpha coefficient of value co-creation was 0.906; thus, the scale reliability of the formal survey can be considered as high.

According to confirmatory factor analysis,  $\chi^2/DF$  was 2.436, GFI was 0.961, RMSEA was 0.092, NFI was 0.968, TLI was 0.959, and CFI was 0.981, which demonstrates its higher validity.

### Control Variables

There is a large array of variables that can contribute to the growth of social enterprising, deriving from the individual characteristics of both the entrepreneur and structural dimensions. Many studies focus on demographic characteristics being as able to affect the performance of start-ups and entrepreneurial ventures [79]. Similarly, the management and entrepreneurial experience of the entrepreneur may also have an impact [50]. Finally, with regards to structural dimensions, the initial scale and industry nature of the enterprise were also found to be influential for the growth [42,80]. In this study, based on the above considerations, the following seven widely acknowledged variables were selected: gender, age, work, management, and entrepreneurial experience, main social problem committed to solving, and the number of employees (the scale of the social enterprise). Among them, age and work experience (expressed as years of employment) were not further processed, while gender, management, and entrepreneurial experience were dichotomized into dummy variables (male as 1, and the presence of management or entrepreneurial experience as 1). Due to the large span of company differences in terms of number of employees, the data analysis was carried out after logarithmic processing. The main social problem committed to solving considered six options in the regressions, which included only the four most significant items: environment protection, community development, helping vulnerable groups, and education. All of them were set in the form of 0–1 dummy variables (1 “committed to the issue”, and 0 “not committed”).

## 5. Results

In this paper, the correlation between all variables was preliminarily analyzed through Pearson correlation analysis, and the results are shown in Table 2. It can be seen that value co-creation is highly correlated with environment dynamics and social enterprise growth.

In order to verify the hypotheses, a hierarchical regression, using the standard OLS estimation method, was adopted to test the progressive effect of entering new variables on the dependent variable. We employed four sequential models (Table 3). Model 1 was our benchmark and only contained control variables, while Model 2 added value co-creation as our independent variable. Based on Model 2, we could test the relationship between independent variables, divided into variables of interest and of control, and the dependent variable.

In Models 3 and 4, we firstly added environment dynamics as a moderating variable related to the dependent variable and, consequentially, the interaction term between the independent variable and moderating variable (the product of value co-creation and environment dynamics) that also had to be significant to prove the existence of a moderation effect. Thus, Model 4 was the full model used to verify the moderating effect. All four models of regression analysis employed the growth of social enterprises as the dependent variable.

The data show that the numbers of VIFmax of all models were under 10. According to the White test, there was no multicollinearity in Model 1 ( $F = 0.584$ ) and model 2 ( $F = 1.374$ ). The heteroscedasticity test employed the White test. As the heteroscedasticity test shows, compared to Models 1 and 2, heteroscedasticity can only be found in Model 3. When the interaction term was added (Model 4), the heteroscedasticity was eliminated.

In Model 1, only work experience and the number of employees showed a positive impact on dependent variable, while other control variables showed no significance. According to Model 2, when the independent variable of value co-creation was entered into the regression, such an effect was significant ( $b = 0.185$ ,  $p < 0.05$ ). It can be also seen that the overall explanatory power of the model was enhanced. Therefore, hypothesis H1 was verified; however, the coefficients of value co-creation were not significant in Model 3 and Model 4; thus, H1 was only partial satisfied.

**Table 2.** Means, SD, and correlations.

	N	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Value co-creation	172	3.542	0.598	1												
2. Environment dynamics	172	3.405	0.940	0.192 *	1											
3. Growth	172	3.211	0.681	0.215 **	0.471 ***	1										
4. Gender	172	0.663	0.474	0.033	−0.003	0.003	1									
5. Age	172	37.680	7.158	0.120	0.115	0.125	−0.090	1								
6. Work experiences	172	12.052	9.174	0.206 **	0.265 **	0.196 **	−0.055	0.547 **	1							
7. Management experiences	172	0.488	0.501	0.060	0.024	0.036	−0.057	0.339 **	0.334 **	1						
8. Entrepreneurial experiences	172	0.093	0.291	−0.113	0.151 *	0.042	−0.101	0.076	0.046	0.088	1					
9. Environment protection	172	0.244	0.431	−0.004	0.041	0.023	−0.033	−0.06	−0.129	−0.014	−0.042	1				
10. Community development	172	0.250	0.434	0.116	0.047	−0.025	0.099	0.048	0.041	0	0.139	−0.234 **	1			
11. Helping vulnerable groups	172	0.442	0.498	−0.079	0.031	−0.010	0.034	0.133	0.196 *	0.068	−0.083	−0.424 **	0.027	1		
12. Education	172	0.233	0.424	−0.009	−0.041	−0.033	0.160 *	−0.078	−0.036	−0.070	−0.034	−0.281 **	−0.095	−0.074	1	
13. Number of employees	172	0.081	0.274	0.085	0.155 *	0.153 *	0.074	−0.067	0.110	−0.007	−0.100	0.156 *	−0.123	0.014	0.010	1

Note: \*\*\* represents the significance level at <0.001; \*\* represents the significance level at <0.01; \* represents the significance level at >0.01 but <0.05.

**Table 3.** Results of regression models.

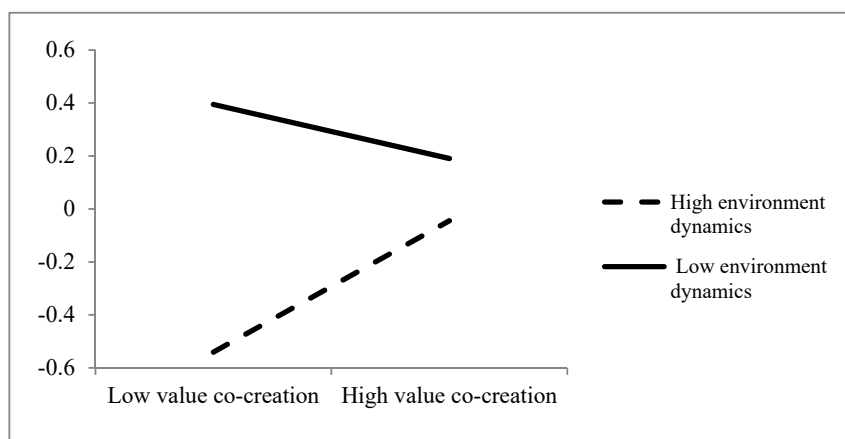
Variables	Model 1	Model 2	Model 3	Model 4
Dependent variable: growth of social enterprises				
Control variables				
Gender	0.021 (0.113)	0.017 (0.112)	0.014 (0.102)	−0.012 (0.102)
Age	0.059 (0.009)	0.052 (0.009)	0.062 (0.008)	0.028 (0.008)
Work experience	0.170 + (0.007)	0.132 (0.007)	0.025 (0.007)	0.067 (0.007)
Management experience	−0.042 (0.112)	−0.042 (0.111)	−0.009 (0.101)	0.022 (0.102)
Entrepreneurial experience	0.048 (0.183)	0.075 (0.183)	−0.003 (0.170)	−0.013 (0.168)
Environment protection	−0.012 (0.152)	−0.006 (0.150)	−0.044 (0.137)	−0.047 (0.135)
Community development	−0.031 (0.128)	−0.055 (0.128)	−0.066 (0.116)	−0.066 (0.115)
Helping vulnerable groups	−0.055 (0.122)	−0.025 (0.121)	−0.048 (0.111)	−0.072 (0.110)
Education	−0.038 (0.136)	−0.035 (0.135)	−0.035 (0.123)	−0.031 (0.121)
Number of employees	0.140 + (0.111)	0.127 (0.110)	0.076 (0.101)	0.081 (0.100)
Independent variable				
Value co-creation		0.185 * (0.090)	0.117 (0.083)	0.064 (0.086)
Moderating variable				
Environment dynamics			0.429 *** (0.054)	0.404 ** (0.054)
Interactive term				
Environment dynamics × value co-creation				−0.172 * (0.077)
$R^2$	0.065	0.096	0.253	0.277
Adjusted $R^2$	0.007	0.034	0.197	0.218
F	1.120	1.545	4.497 ***	4.657 *
Sample size	172	172	172	172

Note: \*\*\*  $p < 0.001$  \*\*  $p < 0.01$ , \*  $p < 0.05$ , +  $p < 0.1$ . Standard errors are reported in parentheses.

According to the regression results of Model 4, which determines the possibility of a moderation effect, both the moderating and interactive variables had a significant effect on the dependent variable ( $b = -0.172$ ,  $p < 0.05$ ), and, after the adding of the interactive variable, it can be seen that adjusted  $R^2$  rose from 0.197 to 0.218.

Figure 2 demonstrates the moderation effect of environment dynamics, based on two groups of samples. The first group represents organizations whose environment dynamics was above the mean, while the second group involves those whose environment dynamics was below the mean. Once the high environment dynamics group and low environment dynamics group were obtained, we analyzed and compared the possible different trends occurring in the relationship between the value co-creation and social enterprise growth. For this reason, hypothesis H2 was confirmed, and environment dynamics plays a significantly negative role of moderation.

Finally, it may be worth commenting on the control variables; only the work experience and the number of employees showed a significance level of  $p < 0.1$  in Model 1. It seems that the scale of the social enterprise has some kind of impact, as in a path dependency assumption [78], and the longevity in the business world possessed by the entrepreneurs/managers may also count. However, when more impactful variables were considered, those variables lost their predictive power and, thus, were of limited importance. Similarly, all demographic control variables were consistently not significant in terms of limited direct impact on performance at the organizational level.



**Figure 2.** Moderation of environment dynamics on value co-creation and social enterprise growth.

Management and entrepreneurial experience also lacked significance. This may be related to the general absence for most respondents of this element; another explanation could be due to social entrepreneurship being depicted as an innovative solution to complex social problems [81], and social entrepreneurs are perceived as being driven by social missions such as ethical obligations and incentive to help others [82,83]. Thus, the experience accumulated in traditional enterprise activities may apply differently this field.

To conclude, the insignificance of the sector in which the social enterprise operates may be related to a framing problem, missing clear identification and definition [84]; thus, it limits the application to research.

## 6. Discussion

It can be seen from the data results that the growth of social enterprises is influenced by value co-creation, which can effectively promote it (hypothesis H1 partially confirmed).

This shows that the value co-creation behavior between customer and social enterprises can effectively improve enterprise performance and promote the growth of enterprises. By participating in the operation of enterprises through value co-creation, customers can effectively improve the market performance and overall efficiency of enterprises, which is consistent with the idea of co-creation proposed by Prahalad and Ramaswamy [31,85]. Meanwhile, it verifies the idea proposed by Pellicano (2014) [37] that customer participation in the value creation of social enterprises can effectively improve the resource integration of social enterprises and the ability to solve social problems. According to the resource-based view, the competitive advantage of a company comes from the difference in resources [86]. The acquisition and integration of resources is the key to the success of entrepreneurship [87]. In the process of value co-creation, consumers and enterprises create value through the interaction of the resources of both parties, especially the operational resources, such as information and knowledge, that customers provide in the process of co-creation [7], which is a behavior of enterprises used to acquire external resources and build competitive advantages. As social enterprises have more resource constraints [26], value co-creation can be regarded as the network patching behavior of entrepreneurs to acquire and utilize resources through social networks, which is used to break through the existing resource constraints of social enterprises, to improve the overall viability of enterprises, and to achieve sustainable development.

At the same time, environment dynamics plays a negative moderating role in the mechanism of value co-creation and social enterprise growth (hypothesis H2 confirmed). In other words, under the condition of low environment dynamics, the positive effect of value co-creation on the growth of social enterprises is more significant, while, under the condition of high environment dynamics, it is greatly weakened.

This phenomenon can be explained by the theory of value co-destruction (VCD). The concept of VCD refers to the fact that not all customer and enterprise interactions produce positive results; sometimes, they will even produce negative results [88,89]. This may be due to the different roles of the two parties in the process of co-creation, which may cause the two parties to refuse to share certain resources based on their own interests [11]. At the same time, communication costs [90], rigid behaviors of both parties [68], ineffective resources and information provided [91], and other situations may lead to the failure of value co-creation. Considering the high environment dynamics, social enterprises are more likely to face a shortage of human resources and capital than commercial enterprises [3], and may not be able to afford the cost of external information and knowledge acquisition in value co-creation; thus, the benefits brought by value co-creation are weakened. At the same time, the reluctance of customers to make changes and the inability of the two parties to effectively communicate information may lead to the co-creation of negative effects [68], which also explains the negative moderation effect of environment dynamics.

## 7. Conclusions

Based on the research status of the growth of social enterprises and the actual development of local social enterprises, this paper applied the theory of value co-creation to analyze the relevant data of Chinese social enterprises, and proved that value co-creation has a significant positive effect on the growth of social enterprises; however, at the same time, a highly dynamic environment has a negative effect on this influencing mechanism. These results provide certain theoretical guidance for Chinese social enterprise practices.

The contributions of this paper are manifold.

Firstly, social enterprise growth is the focus of social enterprise. At present, many scholars' research on social enterprise growth focuses on resource acquisition and internal capacity [92]. However, there is still a lack of research on how to improve the viability of social enterprises based on market logic, especially the localization research of social enterprises. This study points out that, due to the special double goals of social enterprises [93], under the S-D logic, the value-creating behavior effectively promotes the survival ability and growth of social enterprises, and the multiple interactions between enterprises and customers effectively enables social enterprises to integrate resources, and to better create value to meet customers' needs and solve social problems, which provides theoretical verification for how to guide the growth of social enterprises.

Secondly, most studies on value co-creation at present focus on case studies, focusing on how commercial enterprises use this method to promote enterprise performance, especially in branding (Jia et al., 2009; Merz et al., 2009) [62,94]. This paper introduces the research on value co-creation in commercial enterprises to the research of social enterprises, and proves that it can still significantly promote the growth of social enterprises, broadening the research scope of value co-creation. At the same time, this paper proved some theories of value co-creation and put forward the view that this behavior plays a role in the construction of enterprise competitiveness and performance improvement.

Finally, in the past, value co-creation was always regarded as an effective way to improve enterprise performance, which is a trend that the market must follow in the future. However, in practice, a large number of enterprises still adopt certain value co-creation modes and behaviors that cannot achieve good performance. Co-destruction is a frequent result of value co-creation in reality [68]. In this paper, the factors of environment dynamics in the research field of strategy management were introduced into the research model, which verifies its negative moderating effect in the process of value co-creation, and points out that the environment may be an important factor influencing the failure of value co-creation. Through concrete empirical analysis, this paper explains the phenomenon that value co-creation cannot effectively promote enterprise growth in some practices. At the same time, this study broadens the scope of original value co-creation research, expands the existing related research from single research value co-creation of pre- or post-influencing factors to the study of the moderating effect and other various influencing factors, and complements the gap in the current research.

There are three major limitations in this article. Firstly, the current definition of social enterprise is still unclear, which may bring inaccuracy regarding data collection and data analysis for this research. Following the latest literature of the identification and definition of social problems (e.g., Hervieux and Voltan, 2018 [84]), we tried making it more precise. Secondly, we applied a cross-sectional approach; using our initial evidence, we wanted to create a longitudinal research design to improve the reliability of the study, as well as to avoid common method biases. Thirdly, due to the explorative nature of the paper, the theoretical framework contained only three variables, and each variable included limited numbers of items. Taking value co-creation for example, seven questions were listed based on previous works [37,57,73,74]. It is important to improve the quality of interaction between enterprise and consumers, and to establish a supporting system of offering unique consumer experiences [32,85]. Thus, emphasis will be put on how consumers could be efficiently involved in the process of value co-creation, and how the value co-creation works under different tactics taken by social enterprises. Furthermore, more factors comprising environment dynamics should also be taken into consideration.

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## Appendix A

**Table A1.** Items of the variables.

Independent Variables	Items
Value co-creation (Likert scale; 1 stands for strongly disagree, 5 stands for highly agree)	We diagnose problems of the demand side with customers
	We design, produce, or provide service with customers
	We set up a joint team with customers, to solve issues of products and services
	We have many face-to-face communications with customers
	We organize processes and resources together with customers
	We share resources with customers
	We jointly make judgment and take risks when encountering interest conflicts
Moderating variables	Items
Environment dynamics (Likert scale; 1 stands for very few changes, 5 stands for dramatic changes)	Number of competitors and competition
	Customer behavior
	Suppliers (price, technological changes, etc.)
	Industrial relations
	Technological progress
	Government regulation
Macroeconomic situation	
Dependent variables	Items
Social enterprise Growth (Likert scale; 1 stands for strongly disagree, 5 stands for highly agree)	Compared with competitors or similar enterprises, the number of employees in this enterprise grows rapidly
	Compared with competitors or similar enterprises, the number of beneficiaries grows rapidly
	Compared with competitors or similar enterprises, the company's sales growth is very fast
	The scale of the enterprise is expected to continue expanding
	It is expected that the various corporate donations will continue expanding



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