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The Influence of Entrepreneurial Ability and Entrepreneurial Resources on the Growth of E-Commerce Startups in Ethnic Minority Areas - a Case Study of Chongzuo City, Guangxi, China†

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Abstract

This study aims to study the relationship between entrepreneurial ability, entrepreneurial resources and growth of e-commerce startups, and whether entrepreneurial ability and entrepreneurial resources affect the growth of e-commerce entrepreneurial enterprises. The sample is an e-commerce start-up company in Chongzuo city, Guangxi. Data were collected from entrepreneurs who opened e-commerce start-ups in Chongzuo city, Guangxi province. Human capital theory and resource-based theory are applied in this study. Regression analysis was used to examine the relationship between variables. The results show that the 4 independent variables of entrepreneurial ability, including opportunity identification ability, operation and management ability, communication ability, and entrepreneurial resources, including technical resources, are significantly positively correlated with the dependent variable of the growth of e-commerce startups. However, learning ability in entrepreneurship, resource integration and social network resources in entrepreneurship and growth of e-commerce startups dependent variables have no influence.

Keywords: E-commerce, Ethnic minority areas, Growth of e-commerce startups, Entrepreneurial ability, Entrepreneurial resources

Introduction

With the rise of e-commerce entrepreneurship practice, domestic scholars have conducted research on this field and become one of the most for scholars to discuss. In the existing research, relevant scholars believe that entrepreneurial ability is the main factor affecting entrepreneurial performance. Zhang et al. (2004) analyze the sum of the knowledge, ability and abilities of entrepreneurs in the process of entrepreneurship from the perspective of entrepreneurial growth. The growth of e-commerce startups is a dynamic process, and entrepreneurial resources are the necessary conditions to support the establishment and growth of enterprises. Zhang (2011) explored the impact of entrepreneurial resources on entrepreneurial performance based on small and medium-sized enterprises in Yunnan province and found that resource integration ability has an impact on entrepreneurial opportunities, especially building capacity has a positive and significant impact on the profitability and feasibility of entrepreneurial opportunities. The development of entrepreneurial ability and entrepreneurial resources on e-commerce entrepreneurship is a popular research topic in the academic world.

The growth of e-commerce start-ups is a dynamic process. Enterprise growth is a kind of growth "gene" to promote the internal organization and function differentiation of enterprise system, so as to promote the continuous expansion, metabolism, adaptation to the environment, and the formation of benign interaction with the environment. The ability of entrepreneurs is an important factor affecting the sustainable development of entrepreneurial enterprises.

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Entrepreneurial resources run through the development of enterprises. The significance of entrepreneurial resources to entrepreneurial activities is not only the accumulation of volume, but the process of integrating heterogeneous resources. In organizational behavior, resources are mainly divided into 2 categories, one is conditional resources, that is, the combination of various elements, and the other is communicative resources, that is, various social relations. The integration of resources in an organization is a process of continuous rise and development. The growth of enterprises is inseparable from the effective integration and rational use of resources.

Chongzuo city in Guangxi has the highest proportion of Zhuang population in China. It is a new city developed with the launch of China-ASEAN Free Trade Area. Chongzuo has the advantages of geographical location along the border, railway access, adjacent to the capital, airport, seaport and ASEAN. In August 2016, The State Council approved the establishment of Guangxi Pingxiang Key Development and Opening Pilot Zone; In August 2019, approved by The State Council, Chongzuo area was officially established and put into operation as one of the China (Guangxi) Pilot Free Trade Zones. In May 2020, The State Council approved the establishment of a comprehensive pilot zone for cross-border e-commerce in Chongzuo. Based on the geographical advantages and favorable policy background, it is of great significance to explore the growth of e-commerce start-ups in Chongzuo city and analyze the factors that affect entrepreneurial performance, which is of great significance to the sustainable development of e-commerce start-ups.

In this study, entrepreneurs' ability and entrepreneurial resources are selected as the variables of the study, and e-commerce entrepreneurial enterprises in Chongzuo city are selected as samples. The focus of the study is how entrepreneurs improve their own ability and rationally use various resources to achieve their own sustainable development. Therefore, this paper focuses on two main objectives:

1) To examine the influence of entrepreneurial ability on the growth performance of entrepreneurial enterprises

2) To examine the influence of entrepreneurial resources on the growth performance of entrepreneurial enterprises

The research object of this article will be the enterprises of e-commerce entrepreneurship in Chongzuo city. This study takes the entrepreneurial ability and entrepreneurial resources of e-commerce startups as independent variables. Select the growth performance of the enterprise as the dependent variable. This study uses regression analysis to examine the relationship between them, and proposes countermeasures and suggestions to optimize the sustainable development of e-commerce start-ups in Chongzuo city.

Literature review

Comcept and measurement of entrepreurial ability

The continuous development and progress of society and the new normal of economic development have set off a nationwide entrepreneurship boom. Entrepreneurship and internet technology are playing an increasingly important role in society. The important role of entrepreneurial ability in the success and sustainable development of new ventures has been increasingly recognized and paid attention to by the academic community.

Early researchers believe that personal characteristics are the key factor for entrepreneurial success, and that entrepreneurs' psychology, behavior, personal experience, social relations and other characteristics will affect their entrepreneurial growth process. Bird (1995) proposed the concept of entrepreneurial ability early on. From the perspective of characteristics, he defined entrepreneurial ability as the innate ability of entrepreneurs, which is the potential and ability that entrepreneurs stimulate in the process of entrepreneurship. Such ability is largely innate, not just due to acquired entrepreneurial ability. Secondly, entrepreneurs can learn from the characteristics of excellent entrepreneurs, such as opportunity ability, sense of risk and entrepreneurship, to constantly optimize and change the possibility of entrepreneurial success (Markman, 2003). In addition, the entrepreneurial intention is significantly correlated with the gender, age, experience, education level and other factors of the individual entrepreneurs. (Fan &Wang, 2005)

On the other hand, some scholars subdivide entrepreneurship ability according to the needs of Chinese enterprise management practice and research purposes. Think entrepreneurs come out with personal characteristics, but also play a social role and social obligations. Entrepreneurial ability is "entrepreneurial spirit and entrepreneurial ability." Entrepreneurship and entrepreneurial ability require the development of innovative thinking, organizational resource planning, teamwork, analysis and problem solving (Mao et al. 1992). Entrepreneurship is the process combination of discovering and setting opportunities, evaluating resources and utilizing opportunities, as well as the effective realization of resource input of new ventures. Any new venture must improve its innovation ability through the two core entrepreneurial activities of opportunity identification and resource utilization (Zhou & Huang, 2016). Divides entrepreneurship into opportunity identification ability and opportunity utilization ability from the organizational level. Entrepreneurship is an ability for an organization to explore possibilities, innovate and make trial and error repeatedly (Guo, 2016).

In the book social development theory, it is pointed out that entrepreneurial ability is the synthesis of all abilities and qualities to achieve entrepreneurial goals, and the strength of entrepreneurial ability can affect the efficiency and final effect of entrepreneurial practice activities (Yan, 1991).

To sum up, after the establishment of the enterprise is completed, its focus turns to seeking the survival and growth of the enterprise. Especially as individual entrepreneurs, in the face of enterprise growth, entrepreneurs' new knowledge, new technology, and how to communicate with the government, suppliers and consumers are the process of continuous learning of individual characteristics of entrepreneurs. Secondly, the decision-making ability of entrepreneurs mainly comes from the work experience and entrepreneurial experience accumulated by entrepreneurs, which is the main reliance of their business management activities. Finally, entrepreneurs need to identify opportunities for sustainable growth. The entrepreneurial ability discussed in this paper refers to that in the process of entrepreneurial growth, the entrepreneur or the entrepreneurial team can identify opportunities, constantly improve the operation and management ability of the individual or the team, learn new technical ability, learn to deal with various interpersonal relationships, and realize the sustainable development of the enterprise.

Scholars have studied and explained the measurement of entrepreneurial ability from different indicators. In general, even though researchers differ in their attitudes, they all confirm that entrepreneurial ability is related to the overall quality of individuals.

From the aspect of personal characteristics, static results define entrepreneur ability as a cognitive ability, with intelligence as the core, and a special ability to process and integrate the results of various aspects of practice for their own use, and finally achieve the goal of entrepreneurship. Dynamic results define entrepreneur ability, which is not only related to the conditions that the entrepreneur is born with, but also closely related to the learning, training, further education and other acquired practical activities that the entrepreneur is exposed to (Zhou & Huang, 2015; Dong, 2012).

From the perspective of opportunity ability, entrepreneurial ability is divided into opportunity recognition ability and opportunity utilization ability. Opportunity identification refers to the ability to observe the environment and identify opportunities and position those opportunities as viable business concepts. Opportunity utilization ability refers to the entrepreneur's ability to commercialize the identified opportunities by developing new products, new services or entering new markets, which is reflected in the entrepreneur's ability to control, organize and build internal and external resources (Cai et al., 2014).

This paper discusses the relationship between entrepreneurial ability and experiential learning from the perspective of entrepreneurs' experiential learning. It is pointed out that entrepreneurial ability is the result of the double chain learning of experience learning and entrepreneurial action learning. And from the opportunity ability, operation ability, financing ability, commitment ability and conception ability of five core content to measure (Xie et al., 2018).

Entrepreneurs as a member of the society, his development is inseparable from the social environment. The content of entrepreneurial ability is classified. Entrepreneurial ability includes the ability to choose entrepreneurial projects, the comprehensive ability of enterprise operation and management, and the market insight ability (Xu, 1999). Secondly, entrepreneurial ability is the collective ability of new enterprises to apply a series of ability and knowledge, which is dynamic. They are divided into opportunity identification

ability, relationship application ability, organizational management ability, strategic orientation ability and resource identification ability (Man et al., 2002). In addition, entrepreneurship is a second-order and six-dimensional concept, that is, opportunity identification and development ability, operation management ability are first-order dimensions, opportunity identification ability, opportunity development ability, organizational management ability, strategic ability, relationship ability and commitment ability are second-order dimensions (Tang & Jiang, 2008).

As the main part of entrepreneurial ability, entrepreneurs play 2 specific social roles: First, entrepreneurs should have a keen sense of the environment, be able to timely respond to the changes in the surrounding environment, and put forward reasonable countermeasures. Secondly, entrepreneurs have the ability to arrange their time and resources reasonably and have a strong time management concept. They can make full use of all available environments around them to achieve a reasonable allocation of resources and investment in entrepreneurial projects. Based on the second-order six-dimensional entrepreneurial ability model proposed by Tang & Jiang (2008), this paper measures entrepreneurial ability in 4 aspects: The ability to identify opportunities, the ability to operate and manage, the ability to learn and the ability to communicate.

Opportunity identification ability refers to the ability to quickly respond to market demands, obtain technical and policy resources, and interpret them with creative thinking by identifying potential or emerging entrepreneurial opportunities in the market.

Management ability refers to that in e-commerce entrepreneurship, entrepreneurs should have the overall planning of capital and reasonable and optimized allocation of talents. It also requires a willingness to take risks and the ability to take control and make decisions with sound judgment.

Learning ability refers to that in the process of successful entrepreneurship, in order to achieve the matching of resources and opportunities, entrepreneurs need to constantly absorb market results to obtain and transform knowledge and information. In addition, entrepreneurs also need to strengthen their knowledge and technology base, improve their ability to understand and adapt to the environment, and adjust their entrepreneurial behavior and strategy to gain a competitive advantage.

Communication ability mean that entrepreneurs must develop good communication ability to maintain communication with the government, suppliers, consumers, friends and relatives, etc., to create a good internal organizational atmosphere and promote the division of labor and cooperation outside.

Concept and measurement of entrepreurial resources

From the form of resources, entrepreneurial resources can be divided into tangible resources and intangible resources. Entrepreneurial resources include not only the resources invested and utilized by an enterprise before and during its establishment, but also the resources invested and utilized after its establishment. Entrepreneurial resources are an important factor for the survival and development of enterprises. According to the resource-based theory, the resources that an enterprise occupies first in the establishment process will form an advantageous barrier to its development. Resource acquisition is a dynamic process in which enterprises or individuals obtain resources for enterprise establishment and development. In the process of entrepreneurship, if enterprises can efficiently manage and integrate the resources obtained, the success rate of entrepreneurship will be greatly improved (Cai et al., 2011).

The rigidity of entrepreneurial resources depends on the scarcity and specificity of enterprise resources, that is, if the enterprise tries to increase or decrease resources quickly, it needs to pay with high cost, even if it is to change the structure of resources, it must pay a high cost. It can be seen that the change of the size and structure of enterprise resources is not only limited by the amount of investment, but also affected by the business activities of the enterprise. Enterprises in the surplus of resources will do everything possible to use resources, while improving the effective utilization of resources. When an enterprise is in shortage of resources, in order to reduce the impact on the utilization of other resources, it can either increase investment in the shortage of resources to improve the structure of resources, or try to obtain corresponding resources from outside to fill the shortage. Making full use of surplus resources is not only the driving force of enterprise growth, but also the motive of enterprise foreign cooperation.

In addition, scholars believe that social networks, as resources for entrepreneurship, will also affect entrepreneurial growth. A series of behaviors of entrepreneurs or entrepreneurial enterprises through their network connections not only promote the establishment of enterprises, but also lay a foundation for the future growth of entrepreneurial enterprises. First of all, entrepreneurial experience and social network strength of entrepreneurs have a significant impact on entrepreneurial performance (Chandler & Jansen, 1992). Secondly, the enhancement of social relationship network is conducive to improving the survival performance of e-commerce start-ups (Guo, 2006). Social network is a key factor affecting the growth of migrant workers' new ventures (Zhuang & Feng, 2014). Empirical analysis shows that the dual embedding of social network and industrial network can effectively promote entrepreneurial growth (Chen & Zhuang, 2013).

Based on the research conclusions of the above scholars, entrepreneurial resources are the sum of all kinds of production factors involved in the establishment and growth of enterprises, and are the necessary conditions to support the establishment and growth of enterprises. The entrepreneurial resources discussed in this paper refer to: In the entrepreneurial process, entrepreneurs or entrepreneurial teams obtain the required resources from the external environment, strengthen the strength of social network, and reasonably integrate resources to achieve sustainable development of enterprises.

Organizational behavior divides resources into 2 categories, one is conditional resources, that is, the combination of various elements, and the other is communicative resources, that is, various social relations. The integration of resources in an organization is a process of continuous rise and development. Therefore, the significance of entrepreneurial resources for entrepreneurial activities is not only the accumulation of pure quantity, but also the process of integrating heterogeneous resources.

Different scholars classify entrepreneurial resources differently. According to Barney (1991), entrepreneurial resources should be divided into organizational capital resources, material capital resources and human capital resources. Material capital resources mainly include plant and equipment, factory location, tangible technology and purchase channels. Human capital resources include knowledge, training, judgment, relationship and experience of managers and employees. Organizational capital resources mainly include formal or informal planning, control and coordination system, formal reporting structure and informal relations between groups within the enterprise or between groups within the enterprise and groups in the external environment.

Kogut and Zander (1992) adopted another classification method. He divided entrepreneurial resources into 6 categories: Material resources, human resources, reputation and organizational resources, technical resources and financial resources.

Lin et al. (2005) divided the resources in the process of entrepreneurial growth into 6 categories: Policy resources, information resources, scientific and technological resources, capital resources, management resources and human resources.

In an introduction to entrepreneurial management, the first category is essential resources, which refer to the resources that entrepreneurs must have or can have with the support of external forces. The second type is the support resources, refers to the entrepreneurs through development, organization, joint and other ways to obtain resources; The third type is peripheral resources, which are not subject to the subjective control of entrepreneurs, and entrepreneurs can directly access them (Yang & Xiong, 2008).

Based on the above research, entrepreneurial resources in this paper will be measured from three aspects: Resource integration, social network resources and technical resources. Resource integration refers to the dynamic ability of entrepreneurs or entrepreneurial teams to obtain the required resources from the external environment and match and utilize them in the process of entrepreneurship. Social network resource is a kind of relationship resource formed by entrepreneurs in the social relationship network. Through the strong and weak relationship network, the communication and contact between various social groups can be realized and heterogeneous information can be obtained. Technical resources refer to the hardware facilities that enable the technical personnel in computer software, network multimedia technology and e-commerce platform to realize operation services.

Concept and measurement of growth of e-commerce startups

As a new entrepreneurial model, e-commerce has created unprecedented entrepreneurial opportunities for new enterprises and individuals. E-commerce has created a number of new industries, such as Internet access services, comprehensive portal information services, e-commerce software application services, and these new services are gradually changing the production and sales mode of traditional industries. With the continuous accumulation and improvement of enterprise resources and capabilities, enterprises enter the growth stage. At this time, their business begins to grow rapidly, their share and relative competitiveness begin to improve, and their brand effect also begins to emerge.

Effective improvement of business performance has always been a realistic demand of enterprises. Performance can be simply understood as achievement and effect, but there has never been a completely consistent discussion on how to define the achievement of an enterprise and how to evaluate the corresponding effect. The performance of an enterprise is reflected by its operating conditions, competitiveness and performance.

In the study of e-commerce entrepreneurship, there are few in-depth research literatures on entrepreneurial growth performance, but we can still use some relevant literatures to study entrepreneurial growth performance. Growth performance is the process of resource accumulation of new enterprises, and the result of the joint action of all the resources and market opportunities of enterprises.

Wong et al. (2005) pointed out that the growth of entrepreneurial enterprises is a comprehensive performance formed by dynamic changes of economic, social and cultural elements, which is manifested in the economic growth and scale expansion of enterprises. The growth performance of entrepreneurial enterprises needs multiple measures, including operating income and the increase of the number of employees in the capital industry. Growth performance is the sum of the work results obtained by a new venture in the specific entrepreneurial process, including the growth of financial performance (sales and profits), market performance (sales channels, number of customers, network, innovation performance (number of patents, brand building). (Zhang & Du, 2018) .

Based on venture growth performance of the connotation definition to define e-commerce venture growth performance, think e-commerce venture growth performance refers to the entrepreneurs to use computer technology, network information technology and related equipment, find and use the entrepreneurial opportunities, integration of resources, time of start-ups in the entrepreneurial process effectiveness and efficiency of the combined and development level. The measurement of growth of e-commerce startups performance has been divided according to different research fields and purposes.

The performance of start-ups is basically the same as that of mature enterprises, which is also divided into financial performance and growth performance. Enterprise performance refers to the operating efficiency of an enterprise and the performance of an operator in a certain period of operation. The operating efficiency of an enterprise mainly lies in the level of asset operation, profitability and follow-up development ability, while the performance of an operator reflects the results obtained by the operator in the process of enterprise production and operation (Zhang, 2002). performance is the general term of performance and efficiency, which includes the dual meanings of efficiency in the process of enterprise activities and the results of activities. The purpose of performance evaluation is to comprehensively improve all aspects involved in the process of performance evaluation, rather than just one of them, such as enterprise profit increase, cost reduction, employee satisfaction, etc., (Feng, 2002).

Wen (2010) analyzed the value orientation and goals of enterprises based on sustainable development, and pointed out that enterprises based on sustainable development are multiple capital symbionts established by stakeholders, and should pursue harmonious development of economic interests, biological interests and social interests. On this basis, the evaluation content, implementation and evaluation object 3 are combined with the dimensions to build a performance cube model, and design the enterprise level performance evaluation index system and performance matrix, and the preliminary application.

The growth performance of a company is generally measured by sales growth, asset growth, employee number growth, profit growth and competitiveness growth (Chandler & Hanks, 1994). Domestic scholars also prefer to use a variety of indicators to evaluate the growth performance of enterprises. The growth of enterprises through the 2 variables of enterprise income growth and total asset growth (Li et al., 2006). The

growth performance of an enterprise can also be measured by market growth, profit level growth, employee growth and sales revenue growth, research and development ability, technological innovation level, learning ability, internationalization level and overall competitiveness (Zhang, 2005).

E-commerce is an emerging business based on network. The quality of network service directly affects the performance of e-commerce entrepreneurship. Santos (2003) regards reliability as an important index to evaluate network service quality. Reliability requires the seller to provide reliable information to the buyer timely and accurately. In addition, responsiveness, ease of use and self-service can also help improve customer satisfaction, which are important factors affecting the performance of e-commerce entrepreneurship.

Scholars studying growth performance measurement have measured and divided it according to different research fields and purposes. However, due to the general difficulties in obtaining financial performance in the actual research process, the growth of e-commerce start-ups is mainly discussed from the aspects of business performance, brand audit, customer satisfaction and so on.

E-commerce in China

E-commerce is relying on information network technology, centering on the commercial activities of Commodity Exchange, and realizes the electronization, networking and informatization of traditional commercial activities. In the 1990s, e-commerce emerged and developed rapidly in China.

In recent years, China's e-commerce industry has developed rapidly. Driven by the government and the market, China's economy has adapted to the digital transformation, seized the opportunities of industrial digitalization and digital industrialization, and further improved the service and application capabilities of e-commerce. By 2019, China had more than 900 million internet users and 64.5 % internet penetration rate. China's e-commerce turnover reached 3.481 billion yuan (China International E-commerce website, 2020). Data from the National Bureau of Statistics show that the online retail sales in China reached 11.7601 trillion yuan, up 10.9 % year on year, among which the online retail sales of physical goods reached 9.759 trillion yuan, up 14.8 %, accounting for 24.9 % of the total retail sales of consumer goods, an increase of 4.2 percentage points over the previous year (**Figure 1**).

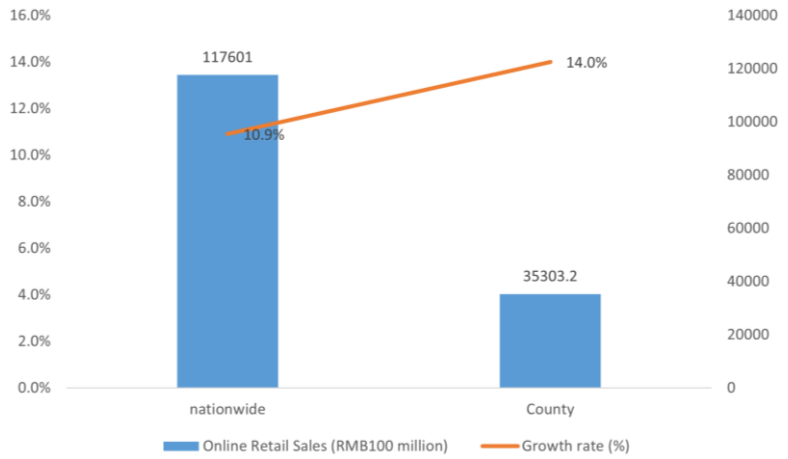

Figure 1 Comparison of national online retail and county online retail in 2020.
Source: National Bureau of Statistics (2021).

In June 2015, the executive meeting of the State Council approved the "Internet plus" action guidance, marking that "Internet plus", an emerging business model, has become a national strategy (China Government Website, 2015) in the "public entrepreneurship, peoples innovation" situation, the electronic commerce entrepreneurial activity is increasingly common, many areas raised a hot wave of e-commerce business, It has become an important force driving employment and promoting economic development.

In 2019, China's e-commerce service industry continued to maintain rapid growth, and the market scale further expanded. The annual revenue of e-commerce service industry reached 4.474.1 billion yuan, with a year-on-year growth of 27.2 % (**Figure 2**), higher than the 17.8 % growth rate of service industry stipulated by the National Bureau of Statistics in 2019. Among them, the revenue of e-commerce trading platform services continued to grow rapidly, reaching 841.2 billion yuan, an increase of 27.0 %. In support services, the revenue of e-payment, e-commerce logistics, information technology services and credit services grew steadily to 1,79569 billion yuan, an increase of 38.1 %. The revenue of derivatives services further increased to 1,837.2 billion yuan, up 18.3 % (**Figure 3**).

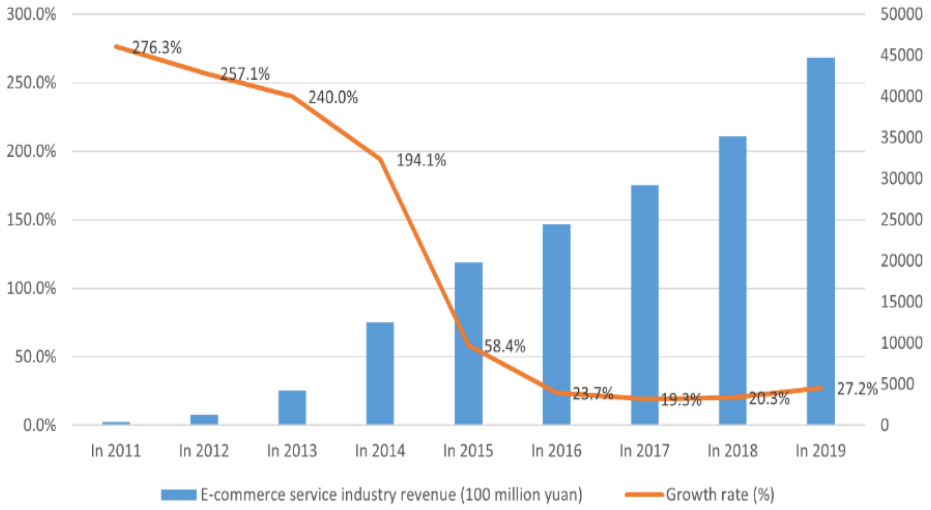

Figure 2 Revenue of China's e-commerce service industry from 2011 to 2019.
Source: China International E-commerce Website (2020).

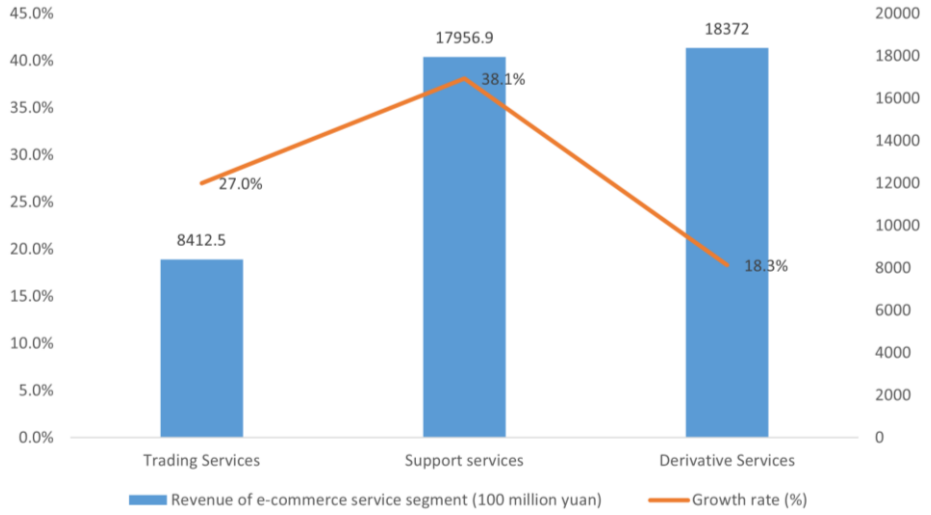

Figure 3 Revenue of China's e-commerce service sector in 2019.
Source: China International E-commerce Website (2020).

Due to the impact of COVID-19, more migrant workers will return to their hometowns in 2020. Local governments have stepped up support, improved the business environment, and continued to promote entrepreneurship and innovation in rural areas. In 2020, 10.1 million people returned to their hometowns to start businesses and make innovations, 1.6 million more than in 2019 and 19 % more than in the previous

year, the largest and fastest growth in recent years. There were 4 groups of migrant workers, college students, retired military personnel and women who started businesses. More than 19 million people who have returned to stay in their rural areas have found jobs in local areas or nearby. According to statistics, 55 % of the home-returning business projects use information technology to open online stores, direct direct broadcasting, contactless distribution, etc., creating "online celebrity products". More than 85 % belong to the integration of primary, secondary and tertiary industries, covering a wide range of production, sales and services, agriculture, culture, tourism, education and other fields (Chinese Government Net, 2021). The group into electricity in a startup for the transformation of rural economic development has brought the human resources, boosting the development of new rural economy.

With the rise of e-commerce entrepreneurial practice, domestic scholars have carried out research in this field, which has become a hot issue discussed by scholars. At present, the domestic research in this field mainly focuses on rural e-commerce entrepreneurship, the influencing factors of e-commerce entrepreneurial performance, the environmental advantages and prospects of rural e-commerce entrepreneurship, problems and risks, e-commerce entrepreneurial talent training, e-commerce entrepreneurial talent competency analysis and so on. With increasing academic attention, there is currently a lack of research on the growth of e-commerce startups, especially in ethnic minority areas.

E-commerce in Chongzuo city, Guangxi

E-commerce in China is developing and standardizing at the same time, and exploring new development space with the help of digital technology. E-commerce at the county level has developed rapidly. Under the background of the implementation of the rural revitalization strategy, important policy documents supporting rural e-commerce, agricultural e-commerce and rural talent development have been issued one after another, and the e-commerce at the county level has entered a new stage of large-scale development.

According to statistics, in 2021, the online retail sales of Chongzuo city reached 805.7 million yuan, with a year-on-year growth of 28.3 %. The number of commodities participating in the live broadcast was 421, with a launch rate of 23.2 %. The retail sales of commodities participating in live broadcasting reached 53.01 million yuan, up 30.25 % year on year; retail volume 1.086,500; the number of live broadcasts reached 6,365, with a total of 8.12 million viewers. The economic and technical environment of e-commerce entrepreneurship in Chongzuo city of Guangxi has been relatively improved (Commerce and Port Administration of Chongzuo City, 2021)

Takashi on April 27, 2020, China (left) cross-border e-commerce comprehensive experimental zone for the approval of the State Council, chung left relying on the convenient transportation, port is numerous, under the background of "area", cross-border electricity because of its unique geographical advantage continuously grow and develop, has initially formed between China and ASEAN road cross-border trade e-commerce strategy new heights.

In September 2020, Chongzuo people's government of Guangxi announced on its official website that policies and measures to support China (Chongzuo) cross-border e-commerce comprehensive pilot zone were officially released and implemented. This favorable policy has also attracted more cross-border e-commerce enterprises. In 2021, there will be 121 new e-commerce enterprises in the city. At present, 20 cross-border e-commerce enterprises have settled in Chongzuo Cross-border e-commerce comprehensive pilot Zone, among which 11 have started business smoothly. According to statistics, in 2020, chongzuo's total foreign trade volume of 184.317 billion yuan, down 2.7 % compared with the previous year. Among them, exports amounted to 123.888 billion yuan, down 4.7 % from the previous year. Imports rose 1.9 % to 60.429 billion yuan. The balance between imports and exports (exports minus imports) is 63.460 billion yuan (**Figure 4**).

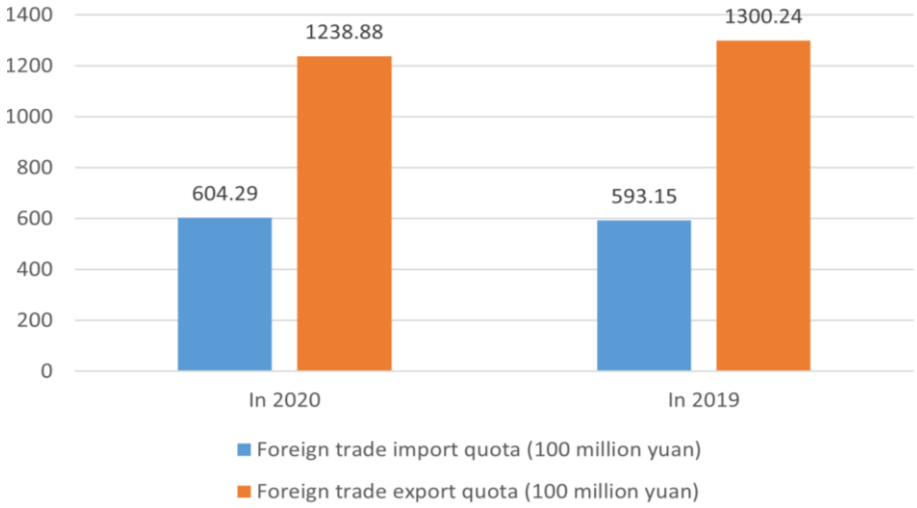

Figure 4 Comparison of online retail in Chongzuo city in 2021.
Source: Chongzuo Statistics Bureau (2021).

With the deepening of rural reform, family farms, cooperatives, leading enterprises at all levels and other new business entities are developing and growing. As an important part of e-commerce, rural e-commerce plays an increasingly prominent role in stimulating rural consumption, promoting agricultural upgrading and promoting rural development. The establishment of China-ASEAN cross-border e-commerce platform has created favorable conditions for e-commerce start-ups to settle in and develop foreign trade under the background of the Belt and Road Initiative. Chongzuo's e-commerce business development momentum is immeasurable.

Theoretical framework

Smith (1981) made a detailed discussion on human capital. He pointed out in his paper that the knowledge and ability acquired by people in education investment are fixed capital on learners and part of their personal property, just like labor-saving machines, which are fixed capital in the society. The concept of human capital was put forward by Schultz. He pointed out that the improvement of human capital, including (human knowledge, ability, health, etc.), contributed more to economic growth than the increase of physical capital and labor quantity (Schultz, (1961). With the advent of networking and information age, the cost of transmission and diffusion of knowledge information has been greatly reduced, and the creation, processing, dissemination and application of knowledge has become an important source of economic growth in the new era. The more comprehensive knowledge and ability acquired by people through education are playing an increasingly important role in productive activities, and laying a foundation for the power of knowledge for practitioners to "do learning" and the ability to innovate in the work. Romer's (1990) core idea is based on 3 basic premises: First, technological progress is the core of economic growth, and technological progress depends on well-educated talents with innovative consciousness and ability. In the early days, human capital more refers to cognitive ability, such as good listening, speaking and reading ability, good cultural and scientific ability, analytical and problem-solving ability, and some operational ability. Since the 1980s, with the continuous development of science and technology, the nature of work has constantly changed, coupled with the continuous acceleration of job mobility, so that the adaptability of practitioners to technological progress and career change has been clearly enhanced. The researchers found that in economic and technological development, the role of non-cognitive ability in production is more important than cognitive ability, but the role of cognitive ability cannot be played without them. From the point of view of psychology, non-cognitive ability is closely related to people's personality, attitude and motivation. Second, self-confidence, sense of responsibility and focus on work, organization, etc. Third, extroversion, good at communicating with others. Fourth, affinity, compassionate, ready to help others. Fifth is good at the control of emotional efforts. In the workplace, non-cognitive abilities are

embodied in broader contents, such as good ethics, appropriate career expectations, effective time management, positive work attitude, standardized labor behavior and good teamwork spirit. This non-cognitive ability is sometimes called socio behavioral ability.

Wei (2003) believes that entrepreneur human capital is an organic ability system consisting of entrepreneur's innovation ability, resource integration ability, market control ability and operation and management ability. It is a comprehensive system composed of entrepreneur's knowledge, spirit, ability and social background.

The study of entrepreneurship in Chongzuo is inseparable from people's personal characteristics, personality, cognition of knowledge, innovation ability and improvement of operation and management ability. The quality of being friendly and tolerant to others. It cannot be divorced from the development of individual comprehensive ability.

Penrose (1959) pioneered the resource theory of enterprises. By the theory of firm growth, using economics principle, this paper discusses the enterprise resource and the relationship between firm growth and puts forward the "theory of organization is not balanced growth", he views as follows: Enterprise is a body of resources integration, and its expansion and growth at the same time is subject to 2 aspects, internal resources and external opportunities. Resource - based enterprises make full use of these productive services and develop them. In Penrose's theory of enterprise growth, the source of enterprise growth is its service, and service comes from its resources. Later, Bamey (1991) believes that the "traditional resource-based theory" takes "resources" as the thinking logic center and starting point of enterprises' strategic decisions, and connects enterprises' competitive advantages with their growth decisions by resources. This theory is based on 2 assumptions as the analysis premise: 1) the resources owned by enterprises are "heterogeneity", 2) these resources are "incomplete liquidity" among enterprises. Therefore, the rare, unique and difficult to imitate resources and capabilities of enterprises may lead to long-term differences between different enterprises, and those enterprises that occupy unique resources for a long time are more likely to obtain lasting excess profits and competitive advantages. Some scholars have critically inherited and developed the traditional resource-based theory, producing the enterprise capability theory, Prahalad and Hamel (1990) put forward the concept of core competence and believed that enterprises are essentially a collection of capabilities, but not all capabilities can form competitive advantages. Only core competence is the source of competitive advantages of enterprises, and the accumulation, maintenance and application of core competence is the long-term fundamental strategy of enterprises, namely the core competence theory. Sanchez and Heene (1997) put forward the concept of comprehensive dynamic, systematic, cognitive and holistic competence on the basis of core competence, taking basic competence as the basic theoretical framework for studying competitive strategy and forming the basic competence theory. According to the basic capability theory, enterprises should manage capabilities as an open system, attach importance to the role of enterprise network and alliance, and quickly configure temporary resource chains to gain competitive advantages in short-term market opportunities. Basic competence theory also puts forward the idea of dynamic capability, which is considered as the dynamic of environment and organization change and coevolution, and the main body of forming capability and basic capability. Its analysis includes the interaction between staff and team within the enterprise, the relationship between enterprise and external resource providers, the relationship between enterprise and customers, and the relationship between competitors and competitive partners. Teece et al. (1997) further extended the idea of dynamic capability and proposed the dynamic capability theory. Dynamic capability theory emphasizes that in order to adapt to the drastic change of external environment, enterprises must constantly acquire and integrate, and have administrative organization technology, resources and functions that can identify internal and external. Dynamic capability can constantly obtain new competitive advantages under the given path dependence and market potential conditions.

Resource theory perspective emphasizes the entrepreneurial organization of various resources, entrepreneurial process is a cycle, the iteration process, affected by the change of information and resources, the entrepreneur will constantly adjust the direction and entrepreneurship resource acquisition way think group internal resources ability to obtain convenience and integration of resources to the impact of e-commerce business growth performance. Resource attraction refers to the process in which an enterprise

attracts investment from investors or the attention of the public through the formulation of sound business plans, the drawing of entrepreneurial blueprints and the personality of the entrepreneurial team.

Hypothesis development

Current research shows that entrepreneurial ability has a positive impact on the growth of e-commerce entrepreneurship, and the opportunity identification ability, operation and management ability, learning ability and communication ability in entrepreneurial ability are the specific factors that mainly affect the growth of e-commerce entrepreneurship. Cai et al. (2014) found that entrepreneurship has a positive impact on the performance of new enterprises. In terms of opportunity identification ability, Liu (2017) believes that tacit knowledge acquisition, will identification ability and opportunity evaluation ability have a positive impact on entrepreneurial performance. Guo (2016) explored the relationship between knowledge and ability, and found that knowledge acquisition plays a mediating role in the relationship between experimentation, loss tolerance, prior commitment and entrepreneurial ability. Xie et al. (2018) also pointed out that experience learning has a positive impact on entrepreneurial ability. In terms of individual comprehensive ability, Zhou (2013) found in his research on farmers' entrepreneurship that farmers' entrepreneurial behavior and farmers' entrepreneurial environment have a significant effect on entrepreneurial performance. Zhuang and Feng (2014) more comprehensively pointed out that resources and the comprehensive quality of entrepreneurs have a significant impact on the entrepreneurial growth of migrant workers.

Ma (2019) shows that entrepreneurial ability plays a partial intermediary role in the relationship between innovation drive and firm growth performance. When analyzing the impact of entrepreneurial ability on entrepreneurial performance, Bird (1995) also pointed out that the level of entrepreneurial ability has an important impact on enterprise performance, and the improvement and construction of entrepreneurial ability are conducive to guiding entrepreneurial activities and production and operation of enterprises.

Entrepreneurial resources are another key factor affecting the growth of e-commerce entrepreneurship. Current research shows that entrepreneurial resources have a positive impact on the growth of e-commerce entrepreneurship, and the capital resources, social network resources and technical resources in entrepreneurial resources are the specific factors that mainly affect the growth of e-commerce entrepreneurship. Zhang (2011) found in his empirical study that entrepreneurial resources have a positive and significant impact on entrepreneurial performance, while Zhuang and Feng (2014) more comprehensively pointed out that resources and the comprehensive quality of entrepreneurs have a significant impact on the entrepreneurial growth of migrant workers. Yu (2017) found in his research on e-commerce entrepreneurship in Anhui province that entrepreneurial resources directly affect the performance of e-commerce entrepreneurship. In addition, social network resources have a positive impact on entrepreneurial growth (Feng & Liu 2017).

Resource utilization ability has a positive and significant impact on entrepreneurial performance, because resource utilization ability can improve the effective use of entrepreneurial resources, maximize their effectiveness, and convert resources into organizational capabilities to improve performance. The marital status, working experience, material resources and human resources of entrepreneurs are the key factors in the start-up stage of new enterprises. Knowledge resources and technology opportunities are the key factors influencing the survival of migrant workers' new ventures. Working experience, social network, human resources, information resources and market opportunities are the key factors that affect the growth of migrant workers' new enterprises. As an entrepreneur, mastering rich technical resources and social network resources is more conducive to the improvement of entrepreneurial performance. In addition, scholars believe that social network is a key factor affecting entrepreneurial growth. A series of behaviors of entrepreneurs or entrepreneurial enterprises through their network connections not only promote the establishment of enterprises, but also lay a foundation for the future growth of entrepreneurial enterprises. In order to rapidly improve their technological strength and competitive advantage during the growth period, new enterprises will form strategic alliances with their in-network business partners (including competitors, complements, suppliers, etc.) and quickly acquire resources through the alliances. The

establishment of the relationship between entrepreneurs and government agencies, intermediary agencies and business networks is conducive to the diversification of enterprise network relations, and conducive to enterprises seeking and accepting information and suggestions from subjects with different backgrounds.

According to the above theoretical analysis, the structure of the theoretical model studied in this paper is constructed, which consists of three variables, namely entrepreneurial ability, entrepreneurial resources and growth of e-commerce startups. The following hypotheses are proposed:

H1: There is a positive correlation between opportunity identification ability and growth of e-commerce startups.

H2: There is a positive correlation between business management ability and growth of e-commerce startups.

H3: There is a positive correlation between learning ability and growth of e-commerce startups.

H4: There is a positive correlation between communication ability and growth of e-commerce startups.

H5: There is a positive correlation between resource integration and growth of e-commerce startups.

H6: There is a positive correlation between social network resources and growth of e-commerce startups.

H7: There is a positive correlation between technical resources and growth of e-commerce startups.

Methodology

Research design and methods

Population and sampling

This study selected entrepreneurs of e-commerce start-ups in Chongzuo city as samples. Chongzuo currently has 417 e-commerce start-ups, according to data provided by the city's Commerce and Port Administration bureau. Therefore, the total number of samples is 417.

However, the decision of sample size is often made according to the needs of factor analysis. When conducting factor analysis, the sample size can make the study reliable, but there is no consistent conclusion among scholars at home and abroad.

According to the statistical calculation of sample size, the calculation method of initial sample size is as follows;

$$n = \frac{Z^2 \mathrm{P}(1-\mathrm{P})}{\mathrm{e}^2}$$

where n: Sample size,
Z: Z value,
P: Index proportion,
e: precision.

Z value refers to the value of the confidence interval. When the confidence degree is 99 %, the Z value is 2.576; when the confidence degree is 95 %, the Z value is 1.960; when the confidence degree is 90 %, the Z value is 1.645. The Z value selected in this study with the confidence degree at 95 % is 1.960, which means that repeated sampling 100 times. The interval determined by the estimates of 95 samples, including the population truth value, is centered on the estimated value of the sample, and 1.960 times the standard error is the radius.

P is the estimated overall proportion, due to the standard deviation in real use(σ)The square of is often unknown, so P (1-P) is used to evaluate the variance of the sample. When the value of P is 50 %, the variance is the largest [P (1-P) =0.5* (1-0.5) = 0.25], and the required sample size is the largest. In this way, a conservative sample size can be obtained for this study.

E is precision, the allowable margin of error for the survey. The permissible margin of error for this study is 3 %.

According to the definition of each value, put into the formula;

$$n = \frac{Z^2 \mathrm{P}(1-\mathrm{P})}{\mathrm{e}^2} = \frac{1.960^2 \times 0.5 \times (1-0.5)}{0.03^2} = 1067.11$$

Chongzuo currently has 417 e-commerce start-ups. The sample size cannot meet the requirement of 1067, so the formula of sample size needs to be adjusted. The formula of sample size after adjustment is;

$$n_{adjust} = \frac{n\mathrm{N}}{n+N-1}$$

N is the total capacity, and the value is 417. Substitute it into the formula;

$$n_{adjust} = \frac{n\mathrm{N}}{n+N-1} = \frac{1067.11 \times 417}{1067.11+417-1} \approx 302.732$$

Therefore, the sample size is 300.

Data collection

When collecting data, it can be carried out in the following 2 ways, the first is to collect the data on the line, in the form of filling in electronic documents and questionnaire star links on the Internet; the second is telephone access. The questionnaire began surveying on April 30, 2022 and was conducted on May 20, 2022 day ends.

Variable measurement

In this study, 3 variables were mainly involved, namely entrepreneurial ability, entrepreneurial resources and growth of e-commerce startups.

Measurement of entrepreneurial ability

In order to effectively measure the "entrepreneurial ability", it is quantified by means of questionnaire design. In the problem design, the second-order six-dimensional entrepreneurial ability model of Jing & Yanfu (2008), Cai et al. (2014), Liu (2017) is referenced The relationship between the entrepreneurial ability of Ma (2019) and the entrepreneurial growth performance of enterprises is mainly from the ability to identify opportunities, the ability to operate and manage, the ability to learn, and the ability to communicate and communicate The four dimensions are analyzed, and combined with the connotation of the four dimensions and the design of the questionnaire questions on the situation of e-commerce entrepreneurship in Chongzuo city, each dimension measures more than 4 questions.

Measurement of entrepreneurial resources

When measuring the "entrepreneurial resources" variable, this paper combines Zhang (2011) on the basis of Yang and Xiong (2008) entrepreneurial resource division standards), Zhuang and Feng (2014), Yu (2017), Feng and Liu (2017) combined with the characteristics of e-commerce entrepreneurship in Chongzuo city, the entrepreneurial resources required for the growth of e-commerce entrepreneurship are discussed. It is mainly analyzed from three dimensions, such as resource integration, social network resources, and technical resources, and combined with the connotation of the three dimensions and the design of questionnaire questions on the situation of e-commerce entrepreneurship in Chongzuo city, each dimension measures more than 4 questions.

Measurement of growth of e-commerce startups

For the measurement of "growth of e-commerce startups", scholars on the measurement of growth performance have made different measurements and divisions according to different research fields and purposes. However, due to the general difficulty of obtaining financial performance in the actual research process, by combing the literature on the influencing factors of entrepreneurial growth performance, this paper mainly measures the situation of e-commerce entrepreneurship in Chongzuo city through business performance, brand audit, management performance and other aspects We will design a questionnaire and measure more than 5 questions.

In order to obtain effective measurement data, the above three variables are designed in the form of a 6-point Likeke's scale, and according to the situation of e-commerce entrepreneurship in Chongzuo city, each question is scored according to different degrees of 1 - 5 points. The specific questionnaire content is shown in the appendix.

Rellability and validity analysis

Reliability

Reliability analysis is used to study the reliability and accuracy of quantitative data answers (especially attitude scale questions).

Table 1 Reliability Statistics (Cronbach Alpha).

Variable	Number of items	Corrected Item-Total Correlation(CITC)	Cronbach α
Growth of e-commerce startups	6	0.781	0.934
Technical resources	6	0.783	
Social network resources	5	0.754	
Resource integration	6	0.747	
Communication ability	7	0.763	
Learning ability	5	0.794	
Management ability	4	0.777	
Opportunity identification ability	4	0.747	

As can be seen from the above table, the reliability coefficient value is 0.934, greater than 0.9, indicating that the reliability quality of the research data is very high. For the "α coefficient of deleted item", the reliability coefficient does not increase significantly after any item is deleted, so it indicates that item should not be deleted.

For "CITC value", the CITC values of the analysis items are all greater than 0.4, indicating that there is a good correlation between the analysis items and a good reliability level. In summary, the reliability coefficient value of the study data is higher than 0.9, which indicates that the data reliability is of high quality and can be used for further analysis.

Validity

Validity analysis is a measure of the degree to which a study scale achieves its intended purpose. It is used to test the validity of balances. Scale effectiveness usually includes content effectiveness and structure effectiveness. Because the scale used in this study is mature, it has high connotative validity. In order to determine the validity of the research scale, on the one hand, industry experts should be invited to confirm

the questionnaire; on the other hand, the number of samples collected and the standard of data are sufficient. Therefore, the questionnaire has a high content validity.

Table 2 KMO and Bartlett's test.

KMO		0.944
Bartlett's test of sphericity	Chi-square	1613.130
	df	28
	p	0.000

KMO and Bartlett tests were used for validity verification. As can be seen from the above table, KMO value was 0.944 and KMO value was greater than 0.8, indicating that the research data were very suitable for extracting information (with good validity reflected from the side).

Data analysis

In this study, SPSSAU was used to conduct frequency analysis on the gender, age, educational background, occupation before entrepreneurship, form of e-commerce entrepreneurial organization, years of entrepreneurship, enterprise size and business of e-commerce enterprises.

Table 3 Frequency.

Items	Categories	N	Percent (%)	Cumulative Percent (%)
1) Your gender	1.0	158	53.92	53.92
	2.0	135	46.08	100.00
2) Your age	1.0	10	3.41	3.41
	2.0	33	11.26	14.68
	3.0	186	63.48	78.16
	4.0	64	21.84	100.00
3) Your academic qualifications	1.0	31	10.58	10.58
	2.0	150	51.19	61.77
	3.0	65	22.18	83.96
	4.0	42	14.33	98.29
	5.0	5	1.71	100.00
4) Your career when you started your business	1.0	26	8.87	8.87
	2.0	147	50.17	59.04
	3.0	22	7.51	66.55
	4.0	33	11.26	77.82
	5.0	18	6.14	83.96

Items	Categories	N	Percent (%)	Cumulative Percent (%)
	6.0	18	6.14	90.10
	7.0	12	4.10	94.20
	8.0	17	5.80	100.00
5) You are engaged in the form of e-commerce entrepreneurship organization	1.0	54	18.43	18.43
	2.0	84	28.67	47.10
	3.0	61	20.82	67.92
	4.0	38	12.97	80.89
	5.0	29	9.90	90.78
	6.0	27	9.22	100.00
6) The number of years you have been engaged in e-commerce	1.0	73	24.91	24.91
	2.0	93	31.74	56.66
	3.0	89	30.38	87.03
	4.0	38	12.97	100.00
7) The size of your e-commerce business	1.0	59	20.14	20.14
	2.0	107	36.52	56.66
	3.0	86	29.35	86.01
	4.0	41	13.99	100.00
8) Which of the following businesses is your company mainly engaged in?	1.0	44	15.02	15.02
	2.0	67	22.87	37.88
	3.0	68	23.21	61.09
	4.0	37	12.63	73.72
	5.0	23	7.85	81.57
	6.0	22	7.51	89.08
	7.0	32	10.92	100.00
Total		293	100.0	100.0

As can be seen from the above table:

1) In terms of gender, the proportion of male and female e-commerce entrepreneurs is 53.92 and 46.08 %, respectively.

2) In terms of age, the majority of e-commerce entrepreneurs aged 31 - 40 are 63.48 %.

3) For the education of e-commerce entrepreneurs, high school or technical secondary school accounted for the highest 51.19 %, followed by college degree accounting for 22.18 %.

4) In terms of occupational distribution before starting a business, most of the samples were general workers, accounting for 50.17 %.

5) In terms of the form of e-commerce entrepreneurial organizations, 28.67 % of the samples are partnerships, and 20.82 % of the samples are private.

6) More than 30 % of the samples have been engaged in e-commerce entrepreneurship for 2 - 4 years. And the proportion of samples 4 - 6 years is 30.38 %.

7) From the perspective of the scale of e-commerce enterprises, the number of "9 - 15 employees" in the sample is relatively large, accounting for 36.52 %. The proportion of 16 - 25 employees is 23.21 %.

8) In terms of which of the following businesses the company is mainly engaged in, the samples are mainly service and catering, of which service business accounts for 22.87 % and catering business 23.21 %.

As can be seen from the sample data, more than half of those engaged in e-commerce entrepreneurship are males aged 31 - 40, who have a high school, technical secondary school or college degree and low education level. More than half of the entrepreneurs were ordinary workers before starting their own business, which may be local or migrant workers returning to their hometown to start their own business. In the form of e-commerce entrepreneurial organizations, almost half of them are partnerships or private companies, and more than 30 % of them have 2 - 4 years, which belong to the initial development stage of enterprises and are not mature in all aspects. The scale of enterprises is not large, and more than half of the samples are enterprises with less than 25 employees. And engaged in the industry is mainly service, catering.

Pearson correlation coefficient was used in this study to measure the correlation between variables. The greater the absolute value of the correlation coefficient, the stronger the correlation. The smaller the absolute value, the weaker the correlation. If the correlation coefficient is positive, it changes in the same direction. If the correlation coefficient is negative, the change is in the opposite direction. This study used SPSSAU to analyze the correlation between variables.

Table 4 Pearson correlation (n = 293).

	Mean	**Std. Deviation**	**Growth of e-commerce startups**	**Technical resources**	**Social network resources**	**Resource integration**	**Communication ability**	**Learning ability**	**Management ability**	**Opportunity identification ability**
Growth of e-commerce startups	2.892	1.451	1							
Technical resources	2.863	1.441	0.670**	1						
Social Network resources	2.982	1.422	0.607**	0.614**	1					
Resource integration	2.972	1.488	0.632**	0.610**	0.617**	1				
Communication ability	2.922	1.416	0.643**	0.697**	0.622**	0.605**	1			
learning ability	2.883	1.412	0.620**	0.669**	0.681**	0.656**	0.682**	1		
Management ability	2.885	1.411	0.715**	0.640**	0.654**	0.606**	0.631**	0.643**	1	
Opportunity identification ability	2.935	1.431	0.644**	0.642**	0.602**	0.634**	0.563**	0.650**	0.623**	1
*$p < 0.05$ ** $p < 0.01$										

As can be seen from the above table, use correlation analysis to study the growth of e-commerce startups and technical resources, social network resources, resource integration, communication ability, learning ability, management ability, opportunity identification ability Pearson correlation coefficient was used to indicate the strength of the correlation. Specific analysis shows that:

Growth of e-commerce startups and technical resources, social network resources, resource integration, communication ability, learning ability, management ability and opportunity identification ability are all significant. The phase relation values are 0.670, 0.607, 0.632, 0.643, 0.620, 0.715, 0.644, respectively, and the phase relation values are all greater than 0. Means growth of e-commerce startups and technical resources, social network resources, resource integration, communication ability, learning ability, management ability and opportunity identification ability are positively correlated with each other.

Regression analysis

Regression analysis is used to study the influence relationship between X (quantitative or categorical) and Y (quantitative), whether there is an influence relationship, and what is the direction and degree of influence.

Table 5 Parameter estimates (n = 293).

	Unstandardized Coefficients		**Standardized Coefficients**	***t***	***p***	**VIF**	R^2	Adj R^2	***F***
	B	**Std. Error**	***Beta***						
Constant	0.100	0.139	-	0.719	0.473	-	0.634	0.625	$F(7,285) = 70.514$, $p = 0.000$
Technical resources	0.172	0.058	0.171	2.949	0.003**	2.609			
Social Network resources	0.038	0.056	0.037	0.665	0.506	2.387			
Resource integration	0.132	0.052	0.135	2.513	0.013*	2.253			
Communication ability	0.135	0.058	0.132	2.319	0.021*	2.521			
learning ability	−0.007	0.062	−0.007	−0.118	0.906	2.819			
Management ability	0.333	0.057	0.324	5.876	0.000**	2.371			
Opportunity identification ability	0.157	0.055	0.155	2.857	0.005**	2.286			
Dependent variable: Growth of e-commerce startups									
D-W: 2.156									
* $p < 0.05$ ** $p < 0.01$									

As can be seen from the above table, the technical resources, social network resources, the resource integration, communication ability, learning ability, management ability, opportunity identification ability as independent variable, and growth of e-commerce startups as dependent variable for linear regression analysis, it can be seen from the above table that the model formula is: Growth of e-commerce startups = 0.100 + 0.172*Technical Resources + 0.038* Social Network Resources + 0.132* Resource Integration + 0.135*Communication ability − 0.007*Learning Ability + 0.333*Management Ability + 0.157*Opportunity Identification Ability, model R square value is 0.634, Means the technical resources, social network resources, the resource integration, communication ability, learning ability, management ability, opportunity identification ability can explain 63.4 % of the growth of e-commerce startups. The model passed the *F*-test ($F = 70.514$, $p = 0.000 < 0.05$). Means that the technical resources, social network resources, the resource integration, communication ability, learning ability, management at least one item of ability and opportunity identification ability will have an impact on growth of e-commerce startups. In addition, the multicollinearity test of the model shows that all VIF values in the model are less than 5. That means there is no collinearity problem; in addition, the D-w value is near the number 2, which indicates that the model does not have autocorrelation and there is no correlation between sample data. Therefore, the model is good. The final concrete analysis shows that:

The regression coefficient value of Technical resources is 0.172 ($t = 2.949$, $p = 0.003 < 0.01$), which means that Technical resources will have a significant positive impact on Growth of e-commerce startups.

The regression coefficient value of social network resources is 0.038 ($t = 0.665$, $p = 0.506 > 0.05$). This means that social network resources do not affect the growth of e-commerce startups.

The regression coefficient value of resource integration is 0.132 ($t = 2.513$, $p = 0.013 < 0.05$). This means that Resource integration has a significant positive impact on growth of e-commerce startups.

The regression coefficient value of communication ability is 0.135 ($t = 2.319$, $p = 0.021 < 0.05$). This means that communication ability has a significant positive impact on Growth of e-commerce startups.

The regression coefficient value of learning ability is −0.007($t = -0.118$, $p = 0.906 > 0.05$), which means that learning ability does not have an impact on Growth of e-Commerce startups.

The regression coefficient value of Management ability is 0.333(t =5.876, $p = 0.000<0.01$), which means that Management ability has a significant positive influence on Growth of e-commerce startups.

The regression coefficient value of opportunity identification ability was 0.157($t = 2.857$, $p = 0.005 < 0.01$). This means that opportunity identification ability has a significant positive impact on growth of e-commerce startups.

Summary analysis shows that: Technical resources, resource integration, communication ability, management ability, opportunity identification ability has a significant positive impact on growth of e-commerce startups. However, social network resources and learning ability do not affect the growth of e-commerce startups.

F test is used to test whether the regression model is meaningful; First, if the model passes the F-test ($p < 0.05$), it indicates that the model is meaningful and at least one X will affect Y. Second: if the model does not pass the *F*-test ($p > 0.05$), it indicates that the model construction is meaningless and X has no effect on Y.

Table 6 ANOVA.

	Sum of Squares	***df***	**Mean Square**	***F***	***p*-value**
Regression	389.763	7	55.680	70.514	0.000
Residual	225.045	285	0.790		
Total	614.808	292			

As can be seen from the above table, the model passed the *F*-test ($F = 70.514$, $p = 0.000 < 0.05$) during the *F*-test of the model, which indicates that the model construction is meaningful. White test and blood pressure test were used to test the heteroscedasticity of the model.

Table 7 Heteroscedasticity test results.

White test		**BP test**	
χ^2	p	χ^2	p
81.200	0.000	12.210	0.094

As can be seen from the above table, White test and BP test are used to test for heteroscedasticity. The test null hypothesis is that the model has no heteroscedasticity; White test showed that the null hypothesis was rejected ($p = 0.000 < 0.05$), indicating that the model had heteroscedasticity problem. However, BP test showed that there was no heteroscedasticity problem in the model ($p = 0.094 > 0.05$), SPSSAU suggested that White test should prevail, and Robust standard error regression method could be used for research to solve the heteroscedasticity problem.

Robust regression analysis

If there are outliers in the data, then the conventional linear regression will be affected by outliers, and Robust regression is needed. There are 2 scenarios of Robust regression. One is regression analysis when there are outliers in the data; The second is to verify the stability of the regression conclusion; analyze the significance of X; if significant ($p < 0.05$ or 0.01); then, it shows that X has an influence on Y, and then analyzes the direction of the influence relationship in detail.

Generally, *R* square or *F* test is not analyzed in Robust regression, which have lost their original significance.

Table 8 Robust regression analysis results ($n = 293$).

	Regression coefficient	**Standard error**	***t***	***p***	**95 % CI**	R^2	**Adjust** R^2	***F***
Constant	−0.115	0.078	−1.481	0.139	−0.268 ~ 0.037			
Technical resources	0.187	0.033	5.706	0.000**	0.122 ~ 0.251			
Social Network resources	0.042	0.032	1.337	0.181	−0.020 ~ 0.104			
Resource integration	0.047	0.029	1.606	0.108	−0.010 ~ 0.105			
Communication ability	0.110	0.033	3.376	0.001**	0.046 ~ 0.174	0.623	0.614	$F(7,285) = 67.287$, $p = 0.000$
Learning ability	0.050	0.035	1.437	0.151	−0.018 ~ 0.118			
Management ability	0.426	0.032	13.396	0.000**	0.364 ~ 0.489			
Opportunity identification ability	0.152	0.031	4.933	0.000**	0.092 ~ 0.212			

Dependent variable: Growth of e-commerce startups

* $p < 0.05$ ** $p < 0.01$

As can be seen from the above table, technical resources, social network resources, resource integration, communication ability, learning ability, management ability and opportunity identification ability were taken as independent variables, and growth of e-commerce startups was taken as dependent variables for Robust regression analysis (M-estimation method). The regression coefficient value of Technical resources is 0.187($t = 5.706$, $p = 0.000 < 0.01$), which means that technical resources will have a significant positive impact on growth of e-commerce startups.

The regression coefficient value of social network resources is 0.042 ($t = 1.337$, $p = 0.181 > 0.05$). This means that social network resources do not affect the growth of e-commerce startups.

The regression coefficient value of resource integration is 0.047($t = 1.606$, $p = 0.108 > 0.05$), which means that resource integration has no influence on growth of e-commerce startups.

The regression coefficient value of communication ability was 0.110($t = 3.376$, $p = 0.001 < 0.01$). This means that communication ability has a significant positive impact on Growth of e-commerce startups.

The regression coefficient value of learning ability is 0.050($t = 1.437$, $p = 0.151 > 0.05$), which means that learning ability has no influence on growth of e-commerce startups.

The regression coefficient value of management ability is 0.426($p = 13.396$, $p = 0.000 < 0.01$), which means that management ability has a significant positive influence on growth of e-commerce startups.

The regression coefficient value of opportunity identification ability was 0.152 ($t = 4.933$, $p = 0.000 < 0.01$). This means that opportunity identification ability has a significant positive impact on Growth of e-commerce startups.

Summary analysis shows that: Technical resources, communication ability, management ability, opportunity identification ability has a significant positive impact on growth of e-commerce startups.

however, social network resources, resource integration and learning ability do not affect the growth of e-commerce startups.

Results and discussion

Technical resources, communication ability, management ability, opportunity identification ability has a significant positive impact on growth of e-commerce startups. However, social network resources, resource integration and learning ability do not affect the growth of e-commerce startups. The summary of hypothesis test results is shown in Table 9.

Table 9 The summary of hypothesis test results.

NO.	Hypothetical content	Results
H1	There is a positive correlation between opportunity identification ability and growth of e-commerce startups.	Hypothesis test passed
H2	There is a positive correlation between business management ability and growth of e-commerce startups.	Hypothesis test passed
H3	There is a positive correlation between learning ability and growth of e-commerce startups.	The hypothesis test fails
H4	There is a positive correlation between communication ability and growth of e-commerce startups.	Hypothesis test passed
H5	There is a positive correlation between resource integration and growth of e-commerce startups.	The hypothesis test fails
H6	There is a positive correlation between social network resources and growth of e-commerce startups.	The hypothesis test fails
H7	There is a positive correlation between technical resources and growth of e-commerce startups.	Hypothesis test passed

After investigation and data analysis, I believe that learning ability, resource integration and social network resources have no impact on the growth performance of e-commerce entrepreneurship, mainly for the following reasons:

First, in terms of learning ability, most of the e-commerce entrepreneurs in Chongzuo are ordinary workers whose education is not below junior college. They are basically local people or migrant workers who return home to start businesses. Because they have not received higher-level systematic learning and have long lived at the bottom of the working society, they have no clear purpose for self-discipline and direction of learning, and their learning ability is weak. There is no awareness of learning and learning time and energy.

Second, for resource integration, most of the current enterprises of Chongzuo e-commerce entrepreneurs have 2-4 years of entrepreneurial experience, which belongs to the early stage of enterprise development and is immature in all aspects. There are not many enterprise personnel. At present, the stage of looking for resources and giving full play to the use of resources. In addition, entrepreneurs' academic qualifications and learning ability are not high, and they will not make optimal use of resources in all aspects.

Third, in terms of social networks, because Chongzuo e-commerce entrepreneurs are local people or migrant workers who return home to start businesses, and in the early stage of entrepreneurship, many of

their relatives and friends are in a wait-and-see attitude towards entrepreneurs returning home to start businesses, which can't help much. In the eyes of entrepreneurs, the process of entrepreneurship is lonely. Social networking resources have little impact on their entrepreneurial growth.

Conclusions

In this paper, through the questionnaire star network survey of Chongzuo city, Guangxi e-commerce entrepreneurial growth data, using regression analysis method, empirical analysis of Chongzuo city, Guangxi growth of e-commerce startups performance factors. Research shows that, more than half of those engaged in e-commerce entrepreneurship are males aged 31 - 40, who have a high school, technical secondary school or college degree and low education level. More than half of the entrepreneurs were ordinary workers before starting their own business, which may be local or migrant workers returning to their hometown to start their own business. In the form of e-commerce entrepreneurial organizations, almost half of them are partnerships or private companies, and more than 30 % of them have 2 - 4 years, which belong to the initial development stage of enterprises and are not mature in all aspects. The scale of enterprises is not large, and more than half of the samples are enterprises with less than 25 employees. And engaged in the industry is mainly service, catering.

In addition, the growth performance of e-commerce start-ups in Chongzuo city of Guangxi is influenced by a variety of factors. Technical resources, communication ability, management ability, opportunity identification ability has a significant positive impact on growth of e-commerce startups. However, Social Network resources, Resource integration, and learning ability do not have an impact on growth of e-commerce startups, contrary to expectations.

H1: There is a positive correlation between opportunity identification ability and growth of e-commerce startups.

H2: There is a positive correlation between business management ability and growth of e-commerce startups.

H3: Learning ability has no influence on the growth of e-commerce startups.

H4: There is a positive correlation between communication ability and growth of e-commerce startups.

H5: There is no influence between resource integration and growth of e-commerce startups.

H6: There is no influence between social network resources and growth of e-commerce startups.

H7: There is a positive correlation between technical resources and growth of e-commerce startups.

Countermeasures and suggestions

Based on theoretical research and empirical analysis, this chapter aims to put forward countermeasures and suggestions for optimizing the growth of e-commerce entrepreneurship in Guangxi from the perspective of the government and entrepreneurs.

1) Improve entrepreneurs' ability to start businesses.

From the analysis in the above chapter, it can be seen that the factors of entrepreneurs' ability have a significant comprehensive impact on the growth performance of e-commerce entrepreneurship in Guangxi. Entrepreneurs' ability of opportunity identification, communication and management plays a significant role in e-commerce entrepreneurship. Therefore, entrepreneurs in Chongzuo, Guangxi, need not only encouragement and support from the government, but also their own efforts to improve their entrepreneurial ability.

From the perspective of the government, the following 2 points can promote the improvement of entrepreneurial ability of entrepreneurs in Chongzuo city, Guangxi. One is to build Chongzuo entrepreneurship network authentication platform. Formed inside Congzuo city area can reflect characteristics of entrepreneur activity certification system, and the certification system and to apply for a loan, vocational training, are tied to pay subsidies, build a set of entrepreneurs based knowledge, skill and quality evaluation system, and stimulate the entrepreneurs to promote entrepreneurship ability from the potential consciousness of determination. Second, we will strengthen training for entrepreneurs. Local

governments may consider assigning professional and technical personnel and management personnel to provide entrepreneurs with regular or irregular guidance within specific areas. On the one hand, it can solve existing problems and find potential problems. On the other hand, through communication between experts and entrepreneurs, it can timely obtain entrepreneurial needs and constantly charge entrepreneurs.

From the perspective of entrepreneurs themselves, entrepreneurs should focus on national and government-related entrepreneurship policies, identify development opportunities and change business strategies; secondly, they should summarize and reflect on their own management methods, and make up for their lack of management experience by establishing reciprocal relationships with entrepreneurial enterprises with experience level and innovative value ability. Third, take the initiative to participate in the industry exchanges organized by the government or community groups, and strengthen 2-way interaction with peers and industry experts. Finally, entrepreneurs should strengthen the learning and training of knowledge and ability to improve their own ability.

2) Improve the quality of entrepreneurial resources

From the analysis of the above chapter, it can be seen that technical resources in entrepreneurial resources have the most prominent impact on the growth of e-commerce entrepreneurship in Chongzuo city, Guangxi, while resource integration and social network relations in entrepreneurial resources have no impact on the growth of entrepreneurial enterprises. How to improve the quality of entrepreneurial resources needs the joint efforts of government agencies and entrepreneurs.

From the perspective of the government, Chongzuo municipal government and relevant departments should first give preferential policies to encourage local entrepreneurs to make full use of local advantages to carry out entrepreneurial activities and highlight local characteristics in combination with local regional economic development characteristics and industrial structure adjustment direction. Second, government departments should open up logistics and sales channels, organize all counties to strengthen the connection with major logistics and express delivery enterprises, coordinate and solve the upstream blocking points of products, and help solve the sales difficulties of local products. Third, Congzuo city government should actively encourage entrepreneurs to undertake relevant government agricultural projects, also can get a larger organization performance of entrepreneurs to establish strategic cooperation with universities, professional organizations, or the name of the government held a variety of forms of creative entrepreneurship competition, entrepreneurial BBS, business association, the electricity business recruitment, to broaden access to local business resources. Finally, extensive production and marketing docking activities. Make full use of holidays and traditional ethnic festivals, organize major supermarkets and production enterprises to carry out online and offline production and marketing docking activities, and promote products “out of villages and into cities”.

From the perspective of the entrepreneur itself, first of all, entrepreneurs cannot be satisfied with only rely on enterprise technology innovation ability and mining technology talents, rely on the government online platform, to build a full range of the social network system, strengthen the relationship with local government, in time for the latest policy, while positive support for relatives and friends, close coupling relationship with the interests of the upstream and downstream manufacturers; second, attach importance to the cultivation of talents, increase the training and treatment of technical and managerial talents, and retain skilled talents; third, we should establish a global concept, and try to get more favorable resources for entrepreneurial growth by actively participating in government and community activities. Finally, entrepreneurs should learn to learn to integrate existing resources to achieve the maximum degree of optimal utilization and promote the growth and development of enterprises.

3) Excavate local product features and improve brand image

First of all, government departments should strengthen the construction of localized e-commerce platforms and focus on strengthening grassroots platform construction. Second, strengthen the publicity of local entrepreneurs’ e-commerce brand, and increase the credibility and popularity of local entrepreneurs’ e-commerce website with the help of online media and TV media. Third, actively carry out the work of attracting investment, relying on the government to attract and integrate more resources such as capital,

technology and talent, set up special zones for famous and high-quality agricultural products at the municipal and county levels, and help entrepreneurs create products with distinctive characteristics of the city and county levels.

From the perspective of entrepreneurs, we make full use of the opportunities of the current national efforts to promote the integrated development of rural three industries, rely on the characteristics of rural industrial development, and combine our own resource advantages to establish the concept of "one product in one village, one product in one shop, one shop in one rich side" scale economic effect. Through the entrepreneurial growth paths such as the integration of planting, breeding and processing, the extension of industrial chain, multi-functional expansion and the penetration of advanced technology, the industrial chain is extended, the value chain is upgraded, the dividend of industrial integration is shared, the performance of entrepreneurial growth is improved and the sustainable growth of entrepreneurship is promoted.

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