

# Impact of E-Commerce Investment and Enterprise Performance Based on Customer Relationship Management

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**Abstract:** In the current dynamic and complex, competitive environment, the implementation of enterprise e-commerce plays an important role in the development of external business process activities. Through the Internet, information sharing and business process collaboration between enterprises and customers can be realized. This kind of e-service activity based on the e-commerce process is particularly important for customers. However, many business managers have some doubts about the implementation of customer-service-oriented online business activities, because customer service-oriented online business activities need a lot of IT investment, and the performance of this e-business activities is not easy to measure. Therefore, whether the internal e-commerce ability of internal e-commerce implementation and the external e-commerce ability of customer-service-oriented external e-commerce activities can bring performance to enterprises has become a hot issue in the development of enterprise e-commerce. This study provides effective e-commerce implementation strategies for enterprise managers, which has important practical management significance. This paper focuses on the relationship between internal and external e-commerce capabilities and performance and discusses the driving effect of customer-service-oriented e-commerce capabilities on its value. This paper studies the impact of customer relationship management capabilities on the relationship between e-commerce investment and enterprise performance. First, the relationship between E-B capabilities and CRM capabilities is tested. On this basis, the relationship between CRM ability and e-commerce investment, e-commerce ability and enterprise performance is studied. The results show that E-B is positively correlated with CRM ( $\beta = 0.345$ ,  $t = 4.445$ ,  $P < 0.05$ ;  $\beta = 0.382$ ,  $t = 4.997$ ,  $P < 0.05$ ;  $\beta = 0.274$ ,  $t = 3.449$ ,  $P < 0.05$ ;  $\beta = 0.341$ ,  $t = 4.380$ ,  $P < 0.05$ ;  $\beta = 0.205$ ,  $t = 2.535$ ,  $P < 0.05$ ).

**Keywords:** E-commerce Investment, Customer Relationship Management Ability, Enterprise Performance, E-commerce Ability

*Type of Paper--- Research paper*

## 1. Introduction

With the full application of information technology, the differentiation and stratification of consumers and the diversification of the demand for products and services, more and more enterprises begin to carry out customer-oriented e-commerce activities, the business model of marketization gradually changes to the business model of customization [1-3]. And the organizational structure also changes from the traditional single and independent organizational structure to the current dominant network organizational structure transformation [4-6]. At present, enterprises cannot rely on their own capabilities to adapt to the changing business environment [7-9]. They need to rely on the joint strength with partners or customers to integrate the stakeholders involved in business processes, such as customers, suppliers, distributors and retailers, into a close value chain or reintegrate complementary resources and allocate them in the supply chain of enterprises. Now online business process cooperation, so as to strive for more cross time and space capabilities and competitive advantages [10-12]. The interactivity and openness of Internet-based e-commerce technology in inter-organization data transmission make them have a significant impact on enterprise management practice. In fact, the Internet has surpassed the application of information technology such as cross-organization information system (IOS) and data exchange system (EDI) in information sharing ability and cost reduction [13-15]. For example, the application of enterprise online after-sales system, it can make enterprises solve problems for customers in time through the network. The automation of after-sales service can reduce the cost of enterprises and improve the efficiency of enterprises [16-18]. In the early days, online communication based on Web replaced the communication mode of fax and letter. The application of virtual community and community forum can provide help for enterprises to mine potential customers and study customer needs. In the e-commerce environment, the core of organization resources is not limited to the enterprise [19-21]. They have been extended to the outside of the organization and embedded in the activities and processes outside the organization [22-24]. E-commerce application based on Web makes business process transition from inside to outside [25]. In fact, the cross-application of business processes among enterprises is widespread in the supply chain [26]. The production of enterprise IT value is not independent, and the individuals involved in business activities are interrelated. The theory of IT enterprises using internal and external resources to create value can be understood as a part of the value system. Studying the relationship between e-commerce capability and its value from both internal and external aspects of the enterprise is of great theoretical significance for us to have a more comprehensive understanding of the IT value generated by its capability, which is more in line with the development of the times. This paper summarizes the implementation of e-commerce in enterprises based on the practice of enterprise management. The current situation and existing problems reflect the dynamic process and behaviour law of customer-service-oriented online business activities and eliminate the concern of enterprise managers for implementation [27]. Customer service oriented online business activities provide effective e-commerce implementation strategies for enterprise managers, which has essential practical management significance.

Wang investigates, whether early entrepreneurs (EMA) exist in start-up e-retailers on third-party e-commerce platforms. Contrary to the traditional view, this study assumes that due to the nature of the Internet and the characteristics of e-commerce platform system design, e-retailers may enjoy the advantages of forerunners. They also believe that CRM capabilities can help enhance early mobile strengths in an online environment. We use panel data of 7309 e-retailers to analyze and find empirical evidence to support the above hypothesis [28]. Li collected 250 days of daily market target data on the e-commerce platform and explained the short-term and long-term effectiveness differences of different customer relationship management strategies using the vector autoregressive model. The results show that the scope of competition among sellers improves the performance of the platform, while the depth of competition among sellers has a positive impact on the short-term performance of the platform. However, this has a negative effect on the long-term performance of their platform. Whether in the short term or in the long run, the advertising strategy of attracting new buyers can increase the competition scope of sellers, rather than attract existing buyers [29]. [Shwu-Ing Wu](#) established a relationship model to explore the impact of customer relationship management (CRM) and internal marketing on relationship management and business performance of three departments in the lodging industry. We investigated 231 accommodation and breakfast facilities, 240 hotels and 114 motels. The results show that CRM and internal marketing have a direct impact on relationship management, indirect impact on corporate performance CRM has been proved to be particularly useful and has an immediate effect on the financial and non-financial performance of accommodation, breakfast and hotels [30].

There are three innovations in this paper: (1) the relationship between E-B capability and its dimensions, CRM capability and its aspects are clarified. CRM and E-B are hot topics in business and academic circles. At present, most scholars have made a shallow analysis of the relationship between E-B and CRM, the impact of E-B capability on CRM and the impact of E-B on CRM capability. They have not discussed in-depth the effect of E-B skill and its different dimensions on CRM capability and its various aspects. Therefore, this is the first innovation of this study. (2) To determine the intermediary role of CRM capability in the relationship between e-commerce capability and enterprise performance although some studies have examined the influence of E-B capacity and CRM capability on enterprise performance, no further research on the role of CRM capability, the relationship between E-B capability and enterprise performance is another innovation of this study. (3) At the same time, it verifies the multiple intermediary roles of E-B ability and CRM ability in the path of E-B investment to enterprise performance formation. The research results are of considerable significance to answer the formation process of E-B investment value, which is the third innovation of this paper.

## **2. Proposed Method**

### *2.1 E-Commerce*

#### (1) E-commerce investment

The development of e-commerce has gone through a process from a low level to a high level. The first e-commerce (e-c) only refers to the process that enterprises use the Internet to purchase, sell, transport or trade data, products or services. Later, with the development of information technology, some scholars think that it is narrow to describe the transactions between business partners with business. Therefore, high-level e-commerce is used instead. In this stage, e-commerce is not only limited to the purchase and sale of products or services but also includes a variety of online businesses such as customer service, business cooperation, e-learning, etc. Accordingly, the investment in e-commerce technology has expanded from the initial investment in related e-commerce applications, including a computer system, payment, logistics, etc., including all foreground and background applications and processes, which can help enterprises business transactions.

The investor refers to whether the enterprise making e-commerce investment is independent or has strategic partners; the investment mode refers to whether the enterprise makes one-time investment or staged continuous investment when making e-commerce investment; the investment content refers to the development cost (such as hardware, software, network, etc.), E-B technical personnel training, process transformation and maintenance prices. E-B investment shall consider all factors affecting investment income, including E-B development cost, personnel training cost, process transformation cost and maintenance cost. The research on the type and stage of E-B investment is based on two standards: the direction of follow-up investment and the composition of investors.

#### (2) E-B capability

Enterprise capability refers to the combination of skills and knowledge that enterprises acquire, allocate and utilize various resources to achieve outstanding performance. It is often embedded in the organizational process, and practical cooperation with other activities, which is the key to establish competitive advantage E-B capability as an enterprise capability, closely related to E-B resources, and embedded in the organization's business processes. Because each enterprise has different resources, embeddedness and matching degree, it will form its own unique ability. The rapid development of e-commerce, with its own convenient and fast advantages, has won the trust of consumers. The buyer and the seller do business online through information technology and do not meet each other. However, the investment results of many e-commerce enterprises show that some enterprises' investment in e-commerce not only does not bring about the improvement of enterprise performance but also leads to the decline of enterprise competitiveness. The research-based on the dynamic energy theory shows that the lack of e-commerce ability is the reason why the investment efficiency of e-commerce cannot be improved. E-B investment is not only a simple direct relationship to the improvement of enterprise performance; enterprises can improve enterprise performance only if they have heterogeneous resources that are difficult to be imitated by competitors. However, the research on e-b capability is not in-depth enough at present, and there are many dimensions that

have not formed a consensus on the connotation and composition of E-B skill, but so far there is no unified statement. However, there are still some common points in the basic understanding of e-commerce characteristics, that is, e-commerce ability refers to the ability of enterprises to carry out activities related to operation and marketing in the Internet environment, and also involves the management ability to share information and process collaboration with cooperative enterprises. Although enterprise management ability and technical resources are the material embodiment of enterprise e-commerce ability, from the perspective of long-term development, enterprise-level planning is also the embodiment of knowledge.

### (3) CRM capability

Customer Relationship Management (CRM) refers to the process of attracting customers, maintaining and developing customer relationship. Customer relationship management increases opportunities for enterprises to use data and information to understand customer needs and create value. CRM is a cross-functional organizational process, which requires enterprises to integrate business processes, personnel, operations, news, technology and application support and other market capabilities. This further reveals that CRM is not only a technology but also a unique ability formed through integration with other organizational resources. As a kind of enterprise capability, CRM capability is embedded in the CRM activities of enterprises, which reflects that enterprises identify attractive customers and potential customers, establish and maintain the relationship with customers, and transform it into the skill and knowledge combination of customer level benefits. The ability of CRM has a direct impact on the competitiveness of enterprises. It is the key to improve market share and obtain excess profits. Because CRM activities include the acquisition and analysis of customer information, the establishment, maintenance and return of customer relationship, and the use of customer data, its ability is a multi-dimensional concept.

### (4) Enterprise performance

Enterprise performance is a complex concept, which is the economic benefit and operator performance of an enterprise in a certain period of time. In today's competitive environment, because of the unmeasurable factors cannot be controlled, the uncontrollable factors are not easy to measure. Therefore, it is a critical topic to measure the performance of an enterprise. The use of financial indicators to reflect the business performance of an enterprise is determined by the profitability requirements of the enterprise. However, economic indicators have certain limitations. They can only measure what happened in the past, cannot evaluate an organization's expected investment, and are not easy to obtain. In the information society, only the traditional performance management method is not comprehensive. Enterprises must also invest in customers, suppliers, employees, organizational processes, technology and innovation to achieve sustainable development. The earliest enterprise performance is based on the concept of productivity, i.e. input-output ratio, which is used to measure the operation status of enterprises and judge whether enterprises have achieved the expected goals. Enterprise performance refers to the income that an enterprise obtains through operation in a certain period of time, which is reflected in the assets, profits and future development ability of the enterprise. Enterprise performance evaluation can objectively evaluate the operation of the enterprise.

## 2.2 Relevant Theories

### (1) Resource-based theory

Resource-based view is one of the most influential methods in the field of strategic management. With the further development of this theory, some scholars associate it with organizational performance and make different researches on resource characteristics.

### (2) CRM theory

The concept of CRM refers to the process of attracting customers, maintaining and developing customer relationships. These long-term customer relationships are the necessary conditions to increase the profits of enterprises. From the perspective of ability, CRM is the ability of enterprises to predict customer needs, formulate market strategies, identify attractive customers, establish and maintain relationships, and transform them into enterprise value. The rapid development of E-B and its technology has pushed CRM to a new height. Enterprises can make full use of a large number of data and information, understand customer needs and create enterprise value. The acquisition of these valuable information requires enterprises to integrate human resources, operations, knowledge and various technologies. Therefore, CRM is not only a technology but also a capability to incorporate multiple customer technical resources. Although its technology is a necessary resource to improve enterprise performance, the definition and concept of CRM reveal that CRM is the result of continuous development and integration of customer information, its technology and marketing concept. From the perspective of capability, CRM emphasizes that enterprises must invest in the development and acquisition of resources so that enterprises can use these resources to predict customer behaviour and formulate corresponding strategies. Therefore, the unique ability of enterprises to integrate resources is the key to improve performance.

## 2.3 Relationship Study

### (1) Relationship between e-commerce capability and enterprise performance

With the rapid development of IT technology and E-B technology, many enterprises have increased their investment in related technology resources. Therefore, how to integrate and use these resources has become a hot issue in the development of e-commerce. Consequently, it has become the focus of the business community to maximize the profits of enterprises by improving E-B capability. Based on this, this study combs the relationship between E-B capacity and enterprise performance, which lays a theoretical foundation for enterprise performance evaluation.

### (2) The relationship between CRM capability and enterprise performance

The concept of CRM is firstly defined as the process of attracting customers, maintaining and developing customer relationship. These long-term customer relationships are necessary to increase the profits of enterprises. High level of customer relationship management ability usually leads to high financial performance. High CRM capability enables enterprises to create and deliver outstanding customer value, maintain a large number of loyal customers, and create lasting competitive advantage. The rapid development of E-B and its technology has pushed CRM to a new height. Enterprises can make full use of a large number of data and information, understand customer needs and create enterprise value. The acquisition of these valuable information requires enterprises to integrate human resources, operations, knowledge and various technologies. Therefore, CRM is not only a technology but also a capability to incorporate multiple customer technical resources. Although its technology is a necessary resource to improve enterprise performance, the definition and concept of CRM reveal that CRM is the result of continuous development and integration of customer information, its technology and marketing concept. From the perspective of capability, CRM emphasizes that enterprises must invest in the development and acquisition of resources so that enterprises can use these resources to predict customer behaviour and formulate corresponding strategies. Therefore, the unique ability of enterprises to integrate resources is the key to improve performance.

(3) The relationship between E-B capability, CRM capability and enterprise performance

In the research of E-B capability, CRM capability and enterprise performance, there are few detailed studies in the current research results. Most of them are about the investigation of E-B capacity or CRM capability on enterprise performance. They think that E-B capability or CRM capability has an essential influence on the enterprise's long-term competitive advantage and performance improvement. The improvement of E-B capacity is helpful to better implement CRM activities, and the growth of CRM capability is inseparable from abundant E-B resources.

(4) The relationship between E-B investment, CRM capability and enterprise performance

From the perspective of resources and capabilities, this paper puts forward that enterprise performance consists of the transformation of these resources into resources and capabilities. In the past decade, e-commerce technology has developed rapidly. In management practice, many enterprises think that e-commerce is conducive to the realization of information technology exchange within enterprises. E-commerce is one of the hot topics in the manufacturing industry. E-commerce is the advanced stage of e-commerce operation in the first e-commerce, and it is the process of assisting all the foreground and background applications of e-commerce market transactions. The evolution of e-commerce from one mature stage to another requires enterprises to continuously learn and develop new capabilities to meet the needs of different scenes. E-commerce applications based on Internet technology can realize e-commerce functions such as network sales, online shopping, online collaboration, and network information sharing through docking with enterprises. It enables enterprises to develop from the organization of the physical network and computer network to the organization connecting different business partners. Therefore, the application of e-commerce is not only an investment choice but also a necessary investment for enterprises to maintain competitiveness. Whether to invest in e-commerce or not, we should not only consider the benefits brought by e-commerce to enterprises but also consider the use cost, maintenance cost and capital constraint of e-commerce in the field of information technology. The research on the relationship between IT investment and enterprise performance is relatively mature because the application of e-commerce is a particular case of IT implementation. The research on its investment benefit can be the relationship between e-commerce investment and enterprise performance. There is an individual relationship between IT investment and enterprise performance. However, the application of information technology and e-commerce is different. E-commerce pays more attention to business activities with suppliers and customers, and cannot explain the phenomenon of e-commerce application with mature results of its research.

### 3. Experiments

#### 3.1 Experimental Data Set

According to the research content of this paper, we need to study four aspects of enterprises: E-B investment, E-B capability, CRM capability and enterprise performance. Because this research involves many problems such as enterprise capital, operation, customer, etc., the corresponding research object should be the senior management of each enterprise or the general manager who understands the E-B and CRM situation of the enterprise and some supplier customers.

This research questionnaire is distributed in many ways: first, the tutor project team members send the inquiry to the relevant enterprises in paper or electronic form, and ask the respondents to fill it out and return it to the appropriate project team members; second, send the paper questionnaire to the students of University MBA and EMBA, so that those who are in charge of the enterprise can fill it out and recycle it on the spot; finally, send the paper questionnaire to the graduates and return it to the relevant project team members. The University Management Master's, masters and undergraduates who are engaged in related work shall issue electronic questionnaires.

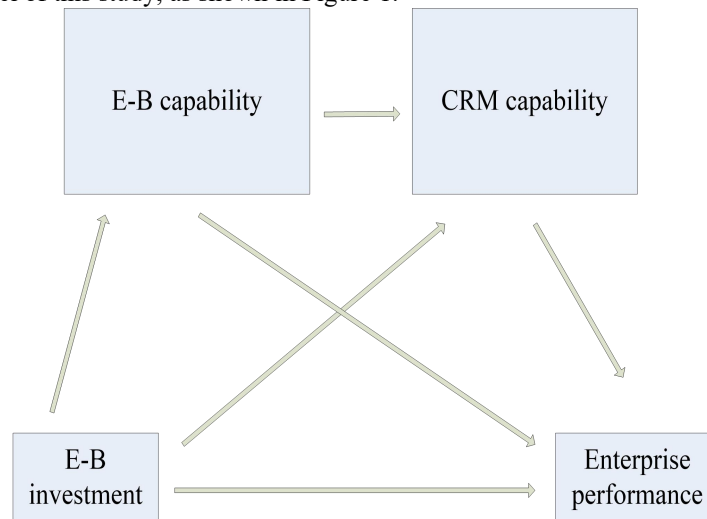
In the stage of large-scale questionnaire distribution, 270 questionnaires were distributed to the members of the tutor project team, and 107 surveys were finally recovered, of which 65 were valid questionnaires, the recovery rate was 39.63%, and the effective rate was 24.07%. One hundred eighty questionnaires were distributed to University MBA and EMBA students, 91 questionnaires were recovered, and 74 were valid questionnaires. The on-site distribution and recovery of inquiries can effectively control the filling and improvement of the surveys, with a recovery rate of 50.56% and an effective rate of 41.11%; 480 questionnaires were distributed to University MBA students, including 93 invalid addresses and 293 on returned ones during their working period, with a recovery rate of 19.58%, 9 effective ones, and an effective rate of 1.88%.

See the distribution and recovery of the questionnaires in this study, Table 6.1. A total of 148 valid questionnaires were collected by the three methods, which met the requirements of the study design. In addition, due to the specific financial problems of the company involved in E-B investment, there are many missing values. Only 79 valid data are included in this part of the data, as shown in Table 1.

**Table 1.** Distribution and recovery of the questionnaire

Distribution object	Number of questionnaires	Questionnaire recovery rate	Effective questionnaire rate
Regional enterprises	270	39.63%	24.07%
MBA、EMBA	180	50.56%	41.11%
Previous MBA, master's degree	480	19.58%	1.88%
Total	930	31.40%	15.91%

Based on the analysis of the relationship between the four variables of E-B investment, E-B capability and CRM capability and enterprise performance, this paper constructs the enterprise performance evaluation index system and establishes the theoretical model of this study, as shown in Figure 1.



**Figure 1.** A theoretical model of the relationship between CRM capability and EB investment and enterprise performance

### 3.2 Sample Characteristics

Most of the enterprises involved in this study have been established for 5-20 years, accounting for 68.92% of the total number of enterprises, of which 35.81% have been found for 5-10 years, indicating that most of the enterprises under investigation have not been found for a long time; there are many enterprises in the manufacturing of electrical equipment, chemical raw materials and chemical products, accounting for 40.54%; nearly half of the enterprises with assets of more than 50 million yuan, accounting for 45.95% and more than 1 / 3 (42.57%) of the enterprises under investigation there are more than 1000 employees.

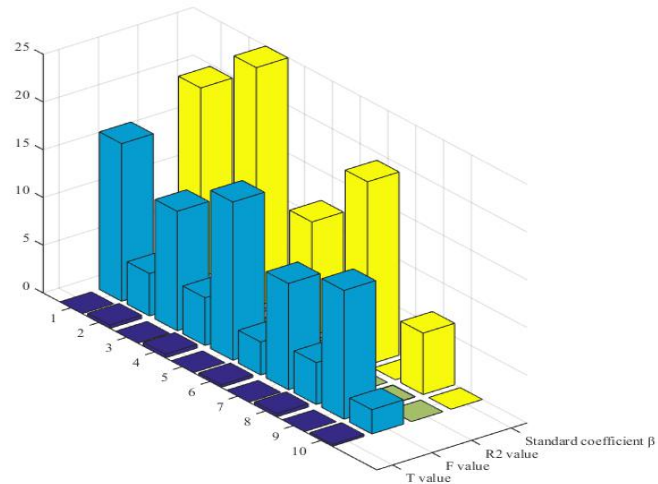
### 3.3 Reliability and Validity of the Questionnaire

Reliability refers to the stability and consistency of the results measured by the scale tool. The higher the authenticity of the scale, the smaller the error of the measurement standard. The commonly used reliability test methods are the  $\alpha$  coefficient method and half confidence method in the field of social science research or journals, and the utilization rate of the  $\alpha$  coefficient is very high. Therefore, the reliability of the scale was judged by  $\alpha$  - coefficient.

## 4. Discussion

### 4.1 Analysis of the Relationship between E-B Capability and CRM Capability

Taking E-B ability as independent variable and CRM ability and its sub dimensions as dependent variable, the linear regression analysis of sample 1 is shown in Figure 2 ( $R^2 = 0.119$ ,  $f = 19.754$ ,  $P < 0.05$ ;  $R^2 = 0.146$ ,  $f = 24.967$ ,  $P < 0.05$ ;  $R^2 = 0.075$ ,  $f = 11.896$ ,  $P < 0.05$ ;  $R^2 = 0.116$ ,  $f = 19.188$ ,  $P < 0.05$ ;  $R^2 = 0.042$ ,  $f = 6.428$ ,  $P < 0.05$ ). The regression model results show that E-B ability and CRM ability and its sub dimensions are in a positive phase close ( $\beta = 0.345$ ,  $t = 4.445$ ,  $P < 0.05$ ;  $\beta = 0.382$ ,  $t = 4.997$ ,  $P < 0.05$ ;  $\beta = 0.274$ ,  $t = 3.449$ ,  $P < 0.05$ ;  $\beta = 0.341$ ,  $t = 4.380$ ,  $P < 0.05$ ;  $\beta = 0.205$ ,  $t = 2.535$ ,  $P < 0.05$ ).

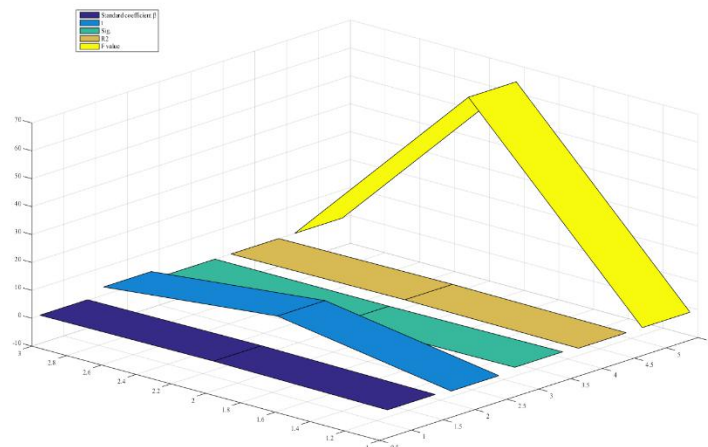


**Figure 2.** E-B capability and CRM capability and their sub-dimension test

This paper finds that E-B ability has a significant impact on CRM ability, that is, the strength of enterprises to integrate and apply E-B resources can improve customer serviceability and maintain long-term CRM ability, which is consistent with the existing research. E-B resources are the basis of CRM ability formation. E-B port stores a lot of consumer information, which is an essential source of customer behaviour analysis. Through these e-commerce technologies, enterprises can not only share information with suppliers, but also analyze consumer behaviour, find problems in products or services, correct them in time, and provide data support for the further design and development of new products, so that enterprises can maintain proper customer relationship management for a long time and gain lasting competitive advantage. The research shows that E-B capability and its sub-dimensions have a significant impact on CRM capability and its sub-dimensions. That is to say, the effect of E-B capability on CRM capability is that abundant E-B resources provide a large number of data support for enterprises to analyze customer behaviour, predict current and potential customer needs, preferences and other factors, maintain customer relationship, and maximize enterprise profits. Thus, the ability of enterprise customer knowledge management is enhanced. Through CRM system, ERP system, social media and other interactive E-B technical resources, enterprises can communicate with customers in a timely manner, understand customers' needs or dissatisfaction, enhance customers' contact ability, improve customers' ability to win and return, discover customers that have been or will be lost in time, so as to carry out scientific management in the future; from various E-B should use ports to get a lot of interaction. The marketing of more advanced products can be carried out accurately; that is to say, the upgrading ability of customers can also be strengthened. It can be seen that the acquisition and enhancement of enterprise CRM capability are inseparable from a large number of E-B technical resources and their strategic planning and management capabilities.

#### 4.2 Analysis of The Relationship Between E-B Capability, CRM Capability and Enterprise Performance

Take customer relationship management ability as the intermediary variable, carry out linear regression analysis on sample I, and the specific test results are shown in Table 6.15: the F value in the model reaches the significant level of 0.001, indicating that the overall explanatory variation of the model reaches the vital level, while the E-B ability also reaches the considerable level ( $\beta = 0.602$ ,  $t = 9.392$ ,  $P < 0.05$ ), as shown in Figure 3, indicating the relationship between the E-B ability and enterprise performance. It plays an intermediary role in the relationship.

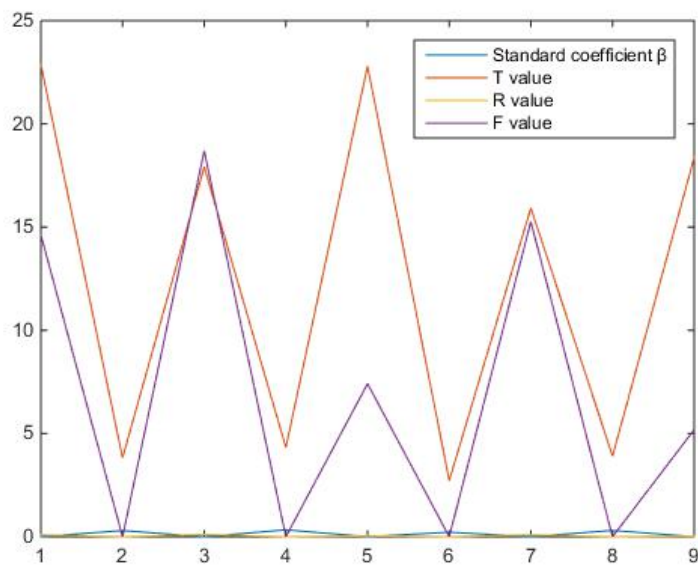


**Figure 3.** Model CRM capability mediation



CRM ability plays an intermediary role between E-B ability and enterprise performance. According to the research results of the resource-based theory, E-B ability and CRM ability, as the unique, non-replicable and non-replicable ability of an enterprise, have a positive impact on enterprise performance, but the effect of e-commerce ability on enterprise performance is partly achieved by strengthening customer contact and improving customer satisfaction, that is to enhance the ability of customer relationship management. E-B capability is the ability of an enterprise to call, deploy and integrate E-B related resources according to the changes of the internal and external environment. The improvement of knowledge means the growth of customer data application and management ability, that is, the continuous enhancement of data collection, implementation and analysis capability, which enables enterprises to interact with customers in a timely manner, find out the deficiencies in products or services, and guide the prediction of new products in the future, reflecting the ability of enterprises to obtain business value by reasonably using and managing E-B resources and improving CRM ability Power.

Taking E-B management ability as independent variable and CRM ability and its sub dimensions as dependent variable, the linear regression analysis of sample I is shown in Figure 4 ( $R^2 = 0.091$ ,  $f = 14.617$ ,  $P < 0.05$ ;  $R^2 = 0.113$ ,  $f = 18.690$ ,  $P < 0.05$ ;  $R^2 = 0.048$ ,  $f = 7.414$ ,  $P < 0.05$ ;  $R^2 = 0.095$ ,  $f = 15.261$ ,  $P < 0.05$ ;  $R^2 = 0.034$ ,  $f = 5.189$ ,  $P < 0.05$ ). Regression model showed that E-B management ability was positively correlated with CRM ability and its sub dimensions ( $\beta = 0.301$ ,  $t = 3.823$ ,  $P < 0.05$ ;  $\beta = 0.337$ ,  $t = 4.323$ ,  $P < 0.05$ ;  $\beta = 0.220$ ,  $t = 2.723$ ,  $P < 0.05$ ;  $\beta = 0.308$ ,  $t = 3.907$ ,  $P < 0.05$ ;  $\beta = 0.185$ ,  $t = 2.278$ ,  $P < 0.05$ ).

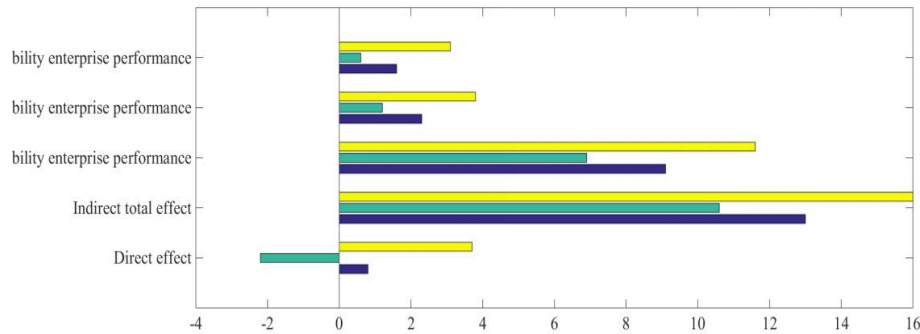


**Figure 4.** E-B management ability and CRM ability and their sub-dimensions

Customer relationship management ability plays an intermediary role in the relationship between e-commerce investment and enterprise performance. The research-based on resource-based theory shows that E-B resources/investment itself can not provide any differentiation advantage different from competitors. Compared with E-B resources/investment itself, the ability to form the best use of e-commerce resources is unique to the enterprise, deeply rooted in the business process that is not easy to transplant. It is the source of the enterprise's lasting competitive advantage. CRM ability is that the enterprise uses existing knowledge and skills to establish with customers. The long-term friendly relationship is ultimately transformed into the strength of enterprise performance. Investing in all the foreground and background of applications and processes can help enterprises to provide business transactions, enable enterprises to obtain a large number of E-B technical resources for real-time interaction with customers, online purchases, information sharing with suppliers, timely improve products or services, strengthen two-way communication between enterprises and customers, collect a large number of data resources and analysis, and enable enterprises to develop new products according to existing customer needs or potential needs, maintain long-term good customer relations, and then establish the enterprise value base.

#### 4.3 Chain Multiple Intermediary Analysis of E-B Capability and CRM Capability

The direct effect of E-B investment on enterprise performance is not significant as shown in Figure 5 ( $\beta_4 = 0.0008$ ,  $P > 0.05$ , 95% confidence interval is  $[-0.0022, 0.0037]$ ), while the indirect effect of E-B investment on CRM capability enterprise performance is significant ( $\beta_1 \beta_5 = 0.0016$ ,  $P < 0.05$ , 95% confidence interval is  $[0.0006, 0.0031]$ ). The indirect effects of E-B investment, E-B capability, CRM capability and enterprise performance were significant ( $\beta_1 \beta_2 \beta_3 = 0.0023$ ,  $P < 0.05$ , 95% confidence interval  $[0.0012, 0.0038]$ ).



**Figure 5.** The chain multiple intermediary functions of E-B ability and CRM ability

E-B ability and CRM ability play a chain and multiple intermediary roles in the relationship between E-B investment and enterprise performance, that is, enterprises can improve E-B ability through E-B technology investment, and then enhance CRM ability to enhance enterprise performance. E-commerce resources are the basis for enterprises to obtain differentiated competitive advantages. Integrating these resources and forming their own unique capabilities will bring intangible benefits. E-B technology resources are the primary sources for identifying customer needs and obtaining customer consumption behaviour information. Making full use of the enterprise ability formed by E-B resources can make the enterprise provide more accurate and timely services for customers, so as to improve the customer relationship management ability. To strengthen the enterprise, customer relationship management means to use and analyze customer data, improve customer satisfaction, and ultimately maximize customer benefits. Therefore, through E-B ability to enhance CRM ability, we can realize the impact of E-B investment on enterprise performance.

## 5. Conclusions

Aiming at the practical application of the e-commerce process, this paper analyzes the relationship among e-commerce capability, e-commerce process performance and enterprise performance. Through a large-scale investigation and interview on the enterprises implementing e-commerce, after processing the recovered data, the empirical research method of structural equation modeling is used to verify the research model, and the nested model test is used to obtain the optimal model experimental results show that E-B is positively correlated with CRM ( $\beta = 0.345$ ,  $t = 4.445$ ,  $P < 0.05$ ;  $\beta = 0.382$ ,  $t = 4.997$ ,  $P < 0.05$ ;  $\beta = 0.274$ ,  $t = 3.449$ ,  $p < 0.05$ ;  $\beta = 0.341$ ,  $t = 4.380$ ,  $p < 0.05$ ;  $\beta = 0.205$ ,  $t = 2.535$ ,  $p < 0.05$ ).

This paper makes an empirical study on the impact of CRM capability on the relationship between e-commerce investment and enterprise performance. Firstly, it tests the relationship between E-B capability and CRM capability. On this basis, this paper studies the relationship between customer relationship management ability and e-commerce investment, e-commerce ability and enterprise performance. Finally, based on the existing research, this paper analyzes the multiple intermediary roles of E-B ability and CRM ability in the relationship between E-B investment and enterprise performance. The results show that E-B ability and its sub-dimensions have a significant influence on CRM ability and its sub-dimensions; CRM ability has a partial intermediary role in the relationship between E-B ability and enterprise performance; CRM ability has an intermediary role in the relationship between E-B investment and enterprise performance; E-B ability and CRM ability have chain multiple intermediary roles in the relationship between E-B investment and enterprise performance.

On the basis of the current research results, this paper constructs a theoretical model between the four variables of e-commerce investment, e-commerce ability, customer relationship management ability and enterprise performance. Through the structural equation model and regression analysis, the relationship between research variables is discussed. It is found that e-commerce capability and its sub-dimensions have a positive impact on CRM capability and its sub-dimensions; CRM capability has an intermediary role between e-commerce investment, e-commerce capability and enterprise performance; E-commerce ability and CRM ability play a chain and multi intermediary role between e-commerce investment, e-commerce ability and enterprise performance.

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