

2014

# BioTechnology

*An Indian Journal*

FULL PAPER

BTAIJ, 10(10), 2014 [4318-4326]

## The research on the influence factors of online reputation from social network point

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### ABSTRACT

With the rapid development of the Internet, the model of online shopping is welcomed by the people. However, the problem of online reputation is gradually revealed. The problem of online reputation is becoming the biggest obstacle in the development of e-commerce. The article analyzed and summarized the research results of online reputation with researchers at home and abroad, combining with the actual situation of online transactions. It is to use the system dynamics to verify the factors that extracted from the network consumption behavior. Discussing the factors of online reputation is to build a good credit environment for e-commerce and meet the demand for the development of E-commerce and the network economy.

### KEYWORDS

E-commerce; Social network; Online reputation; Factors; System dynamics; Simulation.



## INTRODUCTION

As With the rapid development of Internet and the transformation of consumption concept, online shopping has been widely welcomed by the public. Social network refers to a relatively stable system become of the interaction and contact among the members. It has a direct effect on human behavior. The essence of online shopping is a social network. Online shopping is completed in the social network. It is interwoven by consumers, sellers and the third-party through using the Internet. At present, the problem of online reputation is an important factor to influence online shopping and the success rate of online trading.

Online reputation refers to the reputation in the network environment. The significant difference between the network environment and the traditional business environment, such as anonymity and dynamic, resulted to online reputation is complex, dynamic and multidimensional. So the factors of online reputation are multifaceted and complex. Many scholars at home and abroad have done a lot of research on the factors of online reputation. However, with the rapid development of e-commerce, the conclusions of the research on online reputation are relatively old. Therefore, the article combined with the actual situation of network transactions in china to analyze the factors of online reputation from the perspective of social network. Then it uses the methods of system dynamics to simulate the process that the factors affected the online reputation. The results provide a reference to solve the problems of online reputation in the process of the development of electronic commerce. It also can promote the participation of online reputation and improve the success rate of online transactions.

### THE FACTORS OF ONLINE REPUTATION FROM SOCIAL NETWORK POINT

Due to the lack of in-depth experience of online transactions, the consumers need to know the situation of sellers and familiar the e-commerce sites and environment of e-commerce. Then consumers gradually establish the trust to the sellers and make the actual network consumer behavior. The article analyzed and summarized the research results of online reputation with researchers at home and abroad. And it analyzes the factors of online reputation from four aspects with sellers, consumers, e-commerce websites and systems. The article extracted specific factors of online reputation combined with the actual situation of online transactions and actual network behavior of the consumers. It is shown in TABLE 1.

**TABLE 1 : The factors of online reputation from social network point**

Factors	The subdivision of factors	Author
sellers	Reputation	Guangxing Song[1]
	Scale of business	Kim[2]
	privacy protection of consumer	McKnight&Chervany[3]
	Service level	Rousseau[4]
consumers	The intention of trust to sellers	Ang, Dubelaar & Lee[5]
	Experience in online shopping	Pavlou[6]
	Income	Zhaoji Yu[7]
	Education	Yaobin Lu[8]
e-commerce websites	Stability of System	Corriore & Wiedenbeek[9]
	Ease of use	Ranganathan&Ganapathy[10]
	Beauty of web design	Wang[11]
system	Authoritative legal norms	Zhaoji Yu[7]
	certification of Third-party	Lee&Turban[12]
	evaluation system of online reputation	Gefen[13]

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**EXPERIMENTAL DESIGN AND MODEL CONSTRUCTION**

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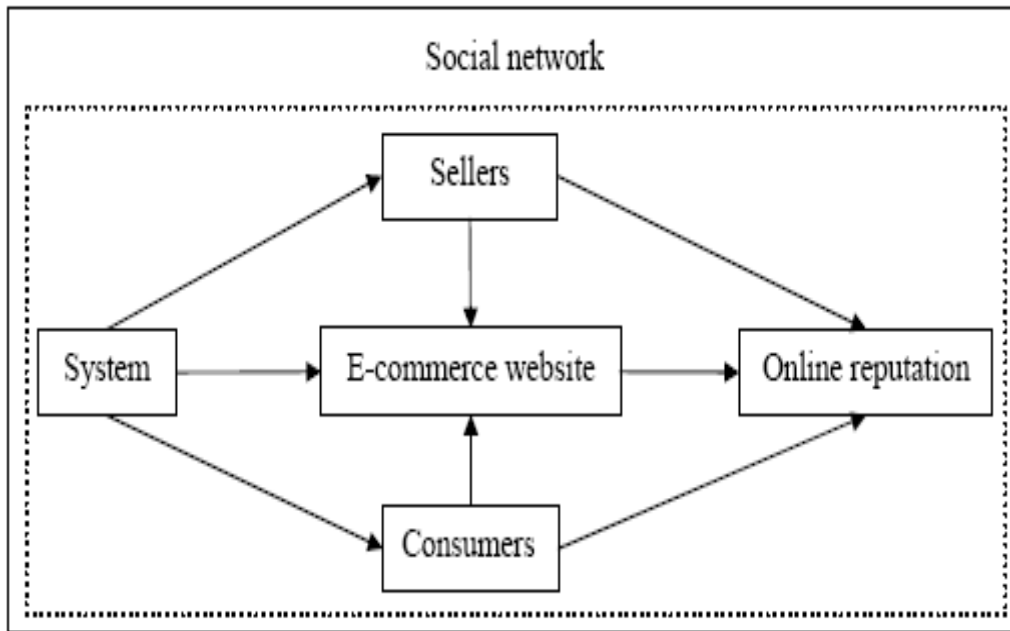
**The method of system dynamic**

System dynamics is a new discipline with comprehensive and interdisciplinary to recognize and resolve system problems. It absorbs a lot of discipline knowledge with computer simulation technology, decision theory and management science and is based on the essence of systems theory, cybernetics and information theory. System dynamics defines the system boundary, transfer processes and operations of information from the viewpoint of system. It describes the system with dynamic and complexity and creates a simulation models based on the feedback of causal relationship. The simulation model determines the behavior of the system through the structure of the system.

The essence of online reputation is social network which consisting of multi-causal feedback with many factors in the internet environment. It is a complex interweaving of various casual relationships. System dynamics introduced the simulation of artificial society into the field of online reputation research and described the factors of online reputation from the viewpoint of system. It can sort out the casual relationship of factors with online reputation in the communication medium of social network and explore the impact of factors with online reputation by using computer to simulate actual situation.

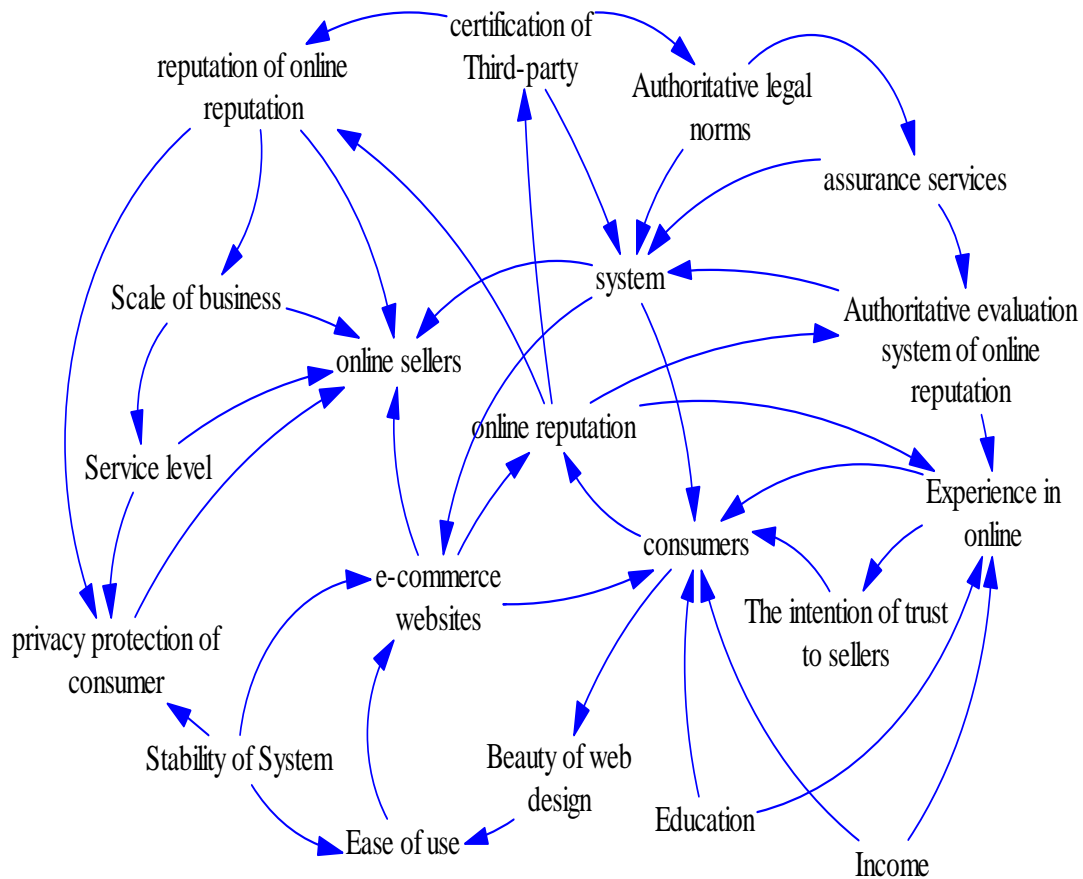
**Experimental design program**

Online reputation is a relationship of reputation among the parties of online transaction in the internet environment. It also is a comprehensive evaluation with results of past transaction involved in e-commerce transactions subject. The online consumer behavior has been throughout the process of online transaction as a transmission medium. The article sees formation mechanism of online reputation as a practice body. It extracted the driving variables and output variables of factors system with online reputation from the social network point through a research on the formation of online reputation with typical process of online transaction. In this article, the system of online transaction is driving variables. Consumers, sellers and websites are process variables. Online reputation is output variables. On this basis, the conceptual model of factors system with online reputation was established. It is shown in Figure 1. According to this conceptual model, it established a system dynamic model of factors system with online reputation under the social network point. And it used this model to do simulation experiments in order to examine the influence of different factors of online reputation.



**Figure 1 : The conceptual model of factors system with online reputation from social network point**  
**The system dynamic model of factors with online reputation from social network point**

On the basis of the basic analysis of factors with online reputation and the conceptual model of factors system with online reputation from social network point, the graph of causality with factors of online reputation was established. The graph of causality sees the system variables as main driving variables and sees the subject behavior of consumers and sellers as main line. The graph of causality was shown in Figure 2.



**Figure 2 : The graph of causality with factors of online reputation from social network point**

There are four main feedback paths shown in the graph of causality with factors of online reputation from social network point. The result of specific factors of seller impact on online reputation was expressed in the first feedback path. The result of specific factors of consumer impact on online reputation was expressed in the second feedback path. The result of specific factors of e-commerce websites impact on online reputation was expressed in the third feedback path. The result of specific factors of system impact on online reputation was expressed in the fourth feedback path. In addition to above major feedback path, there are a lot of feedback path with auxiliary functions shown in the graph of causality. It reflected the influence relationship among the factors of online reputation. Given the focus of analysis of the problem, there are not elaborated. According to the graph of causality and research needs, the system dynamic flow of factors with online reputation was established combined with the availability of data, appropriate indicators and related measure and examination. The flow was shown in Figure 3.

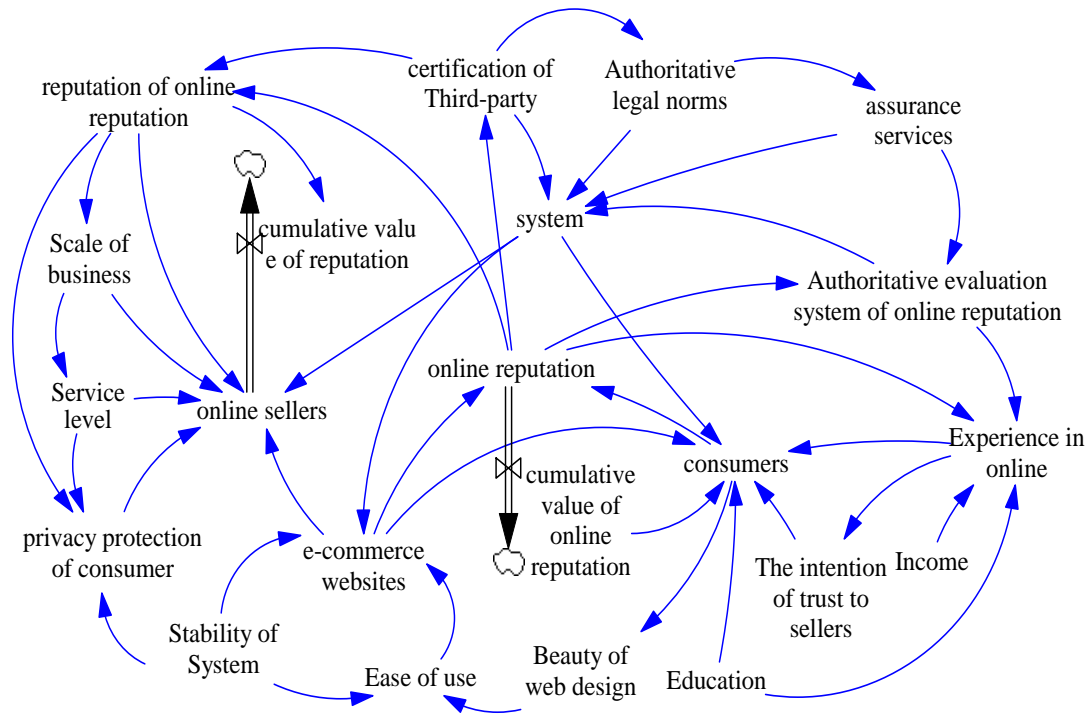


Figure 3 : The system dynamic flow with factors of online reputation from social network point

### THE ANALYSIS OF SIMULATION RESULTS

#### The simulation

The article applied Vensim software to simulate. The simulation time is from 2013 to 2017. The DT is 0.25 year. The data involved in the simulation was mainly from well-known e-commerce website in china and related results of other researchers.

System dynamics is method of quantitative analysis. But some constant variables can not accurately represent the actual value in the process of simulation. In this situation the article applied the average or fitted values to represent the actual values, but the result must have some error. The article applied the function of optimization in the software to adjust the parameters in order to narrow the gap between simulation and reality. This function can give the actual values of one or some key system variables and the range of possible changes with some constant variables in advance. So it can simulate the values of constant variables. The values of constant variables are the closest to the real value. And then it can correct the model.

#### The result and analysis

##### The simulation results and analysis of factors with online sellers

The simulation results of factors with online sellers were shown in Figure 4. With the change of time, the curve of online reputation showed significant upward trend affected by the reputation of online sellers, service level and privacy protection of consumer during the time of simulation. It was indicated that these factors of online sellers had a significant impact on online reputation. However, with the change of time, the curve of online reputation did not show obvious trend affected by the Scale of

business during the time of simulation. It was indicated that the factor of online sellers had not significant impact on online reputation.

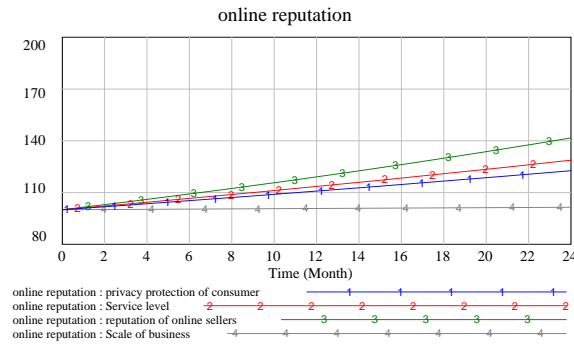


Figure 4 : The Simulation results of factors with online sellers

**The simulation results and analysis of factors with consumers**

The simulation results of factors with consumers were shown in Figure 5. With the change of time, the curve of online reputation showed significant upward trend affected by the intention of trust to sellers and experience in online shopping during the time of simulation. It was indicated that the two factors of online sellers had a significant impact on online reputation. However, with the change of time, the curve of online reputation did not show obvious trend affected by income and education of consumers during the time of simulation. It was indicated that factors of online sellers had not significant impact on online reputation.

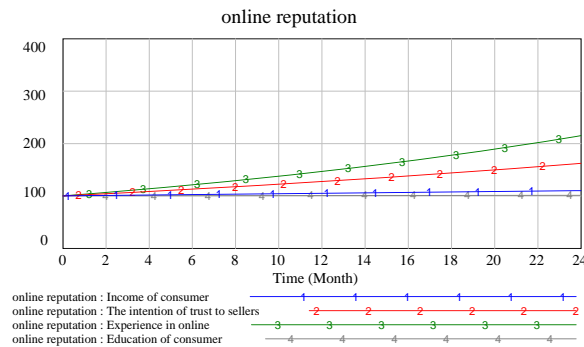


Figure 5 : The Simulation results of factors with consumers

**The simulation results and analysis of factors with e-commerce websites**

The simulation results of factors with e-commerce websites were shown in Figure 6. With the change of time, the curve of online reputation showed significant upward trend affected by Stability of System during the time of simulation. It was indicated that Stability of System had a significant impact on online reputation. However, with the change of time, the curve of online reputation did not show obvious trend affected by Ease of use and Beauty of web design during the time of simulation. It was indicated that factors of e-commerce websites had not significant impact on online reputation.

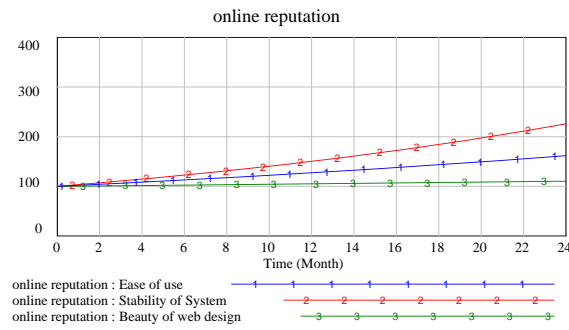


Figure 6 : The Simulation results of factors with e-commerce websites

**The simulation results and analysis of factors with system**

The simulation results of factors with system were shown in Figure 7. With the change of time, the curve of online reputation showed significant upward trend affected by authoritative legal norms, certification of third-party, the authoritative evaluation system of online reputation and assurance services during the time of simulation. It was indicated that these factors of online sellers had a significant impact on online reputation.

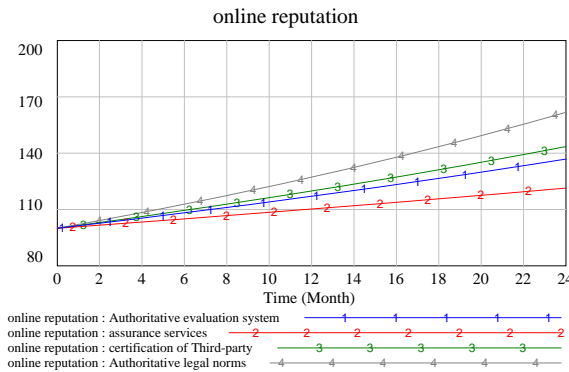


Figure 7 : The Simulation results of factors with system

**CONCLUSION**

The problem of online reputation in online transaction is an important reason to hinder the development of network consumption. The article discussed the factors of online reputation and applied system dynamics to simulate the impact from social network point. The results showed that the reputation of online sellers, service level, privacy protection of consumer, the intention of trust to sellers, experience in online shopping, stability of system, authoritative legal norms, certification of third-party, the authoritative evaluation system of online reputation and assurance services had a significant influence on online reputation. The above aspects need to be considered in the development of online transaction. Consumers would have confident in the online transaction. And it can improve the success rate of online transaction and promote the further development of the e-commerce.

**ACKNOWLEDGMENTS**

This paper was supported by Liaoning Provincial Natural Science Foundation of china(201202169) and the National Soft Science Research Program(2012GXS4D078).

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