

Agricultural E-Commerce Sites Evaluation Research

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Abstract

At present, China has more than 6000 agricultural website. But with the development of network technology, further perfect the logistics distribution technology and the consumer is the pursuit of personalized demand situation, agricultural e-commerce website will have great development space, through the investigation of related domestic website found that domestic agricultural e-commerce is still in the primary stage, there are some problems of agricultural products has delayed their 'through e-commerce, mainly because standardization degree is not enough. So, the comprehensive evaluation of agricultural e-commerce sites is of great significance for the development of agricultural e-commerce. Based on the analysis of agricultural electronic commerce development present situation and influence factors on the basis of exploratory analysis of the agricultural products e-commerce sites evaluation related theory research, aimed to provide theoretical reference for relevant departments agricultural e-commerce sites, to speed up the development of China's e-commerce of agricultural products .

Key Words: Agricultural product, E-commerce ,website evaluation

1. The development of e-commerce of agricultural products

E-commerce is a new type of economic activity in the network, is booming at an unprecedented pace. E-commerce has become the main way to strengthen economic competition, and won the global allocation of resources advantage for developed countries. Through the electronic commerce, people are no longer face to face to do paper-based media documents (including cash) transactions, but through the wide variety of goods online information, perfect logistics distribution system and convenient security fund settlement system for trade.

Due to the novel and unique electronic commerce mode, e-commerce has huge development capacity. it will penetrate into the traditional industries. And with the combination of the traditional industries, e-commerce will be more and more important in the agricultural industry, e-commerce application prospect is also broad. China's agricultural e-commerce, as a new way of selling agricultural products is developing fast. China's agriculture is in the transformation of traditional agriculture to modern agriculture, the outstanding problem is the contradiction between small-scale production and big market circulation, farmers mainly wholesale market for agricultural products circulation mode can't meet the demand of market circulation effectively. E-commerce is a good way to solve China's agricultural "small farmers and big market", the contradiction of the agriculture production and market demand docking. To develop agricultural e-commerce, can improve circulation of agricultural products, promote the trade of agricultural products, increase farmers' income, to speed up the agriculture and rural economic structure strategic adjustment, improve China's agricultural international competitiveness. There is no doubt that agricultural e-commerce will become an important direction of China's agricultural development, can realize the demand docking between agricultural production and market.

Agricultural e-commerce is in the production of agricultural products processing and distribution sales in the process of comprehensive import electronic commerce system, the use of information network technology, release and collection of information on the Internet, at the same time relying on production base and logistics distribution system, complete product or service online purchase, sales, and the process of electronic payment, etc.

In 2006 China's ministry of commerce carry out 13 key projects, One of them is to promote the development of rural informatization and circulation.

The project was listed in 2007, after the central file no. 1, under the guidance of agricultural departments at all levels across the country, involving agriculture electronic commerce developed rapidly. In 2013, china issued the state council on further speed up the development of modern agriculture, enhance the vitality of rural development certain opinions ", the file again for the first time put forward the development of the family farm, the family farm at present in China more than 6670, the new policy will bring new opportunities to produce electricity.

2. The main problems existing in the development of e-commerce of agricultural products

2.1 Insufficient understanding to the development of agricultural e-commerce

The success of the development of electronic commerce in some industries let people to concern the new situation of economic, but agriculture as a traditional industry can't copy development electronic commerce success experience of other industry, at the same time, most of the domestic enterprises to develop electronic commerce lack of proper understanding, the necessity of the agricultural product circulation is particularly serious, therefore, these factors have greatly influenced the development of agricultural e-commerce in China. And enterprises related to agriculture and competent leadership also general lack of knowledge communication and knowledge of e-commerce business, lack of understanding of e-commerce applications in the field of circulation of agricultural products, lead to enterprise and government investment is insufficient, also restrict the development of agricultural products e-commerce business.

2.2 Play a leading role of government in agricultural information construction is not enough

Looking from abroad, weak industry agriculture is protected by the state, the government play a leading role in the informationization construction club, mainly to develop plans and policies, strengthen legislation and increase investment. But looking from the domestic situation, countries in this aspects role play was not enough. Although the ministry of agriculture has established many plan for the development of agriculture, but focus on the planning paper information, the information network interconnection and the insufficient recognition of information sharing, some contents have changed, need to improve the planning. On the investment, the ministry of agriculture proposed " Agricultural engineering", but the country has always attached great importance to enough, this to a certain extent, affected the agricultural informatization construction.

2.3 Agricultural structure system is not sound and information utilization efficiency is low

Unreasonable agricultural structure setting, some agricultural products often can not adapt to the market demand. Combined with many collection and release information of all kinds of useful information on the website update not in time, make information has timeliness is low, difficult to meet the increasing market demand competition. In addition, the pattern of agricultural information collection and release, though a preliminary formation, but the agriculture information processing, analysis, using and the opening of the agricultural information, agricultural information market cultivation, such as slow development, especially the agricultural information service market, the design market of agricultural products, agricultural capital raise, transfer, investment) (market, agricultural products processing industry, agricultural products storage and transportation, etc., and even the packaging market has not been developed or form, makes the information efficiency is not high.

2.4 The lack of professional talents

Agricultural electronic commerce development, need a large number of not only proficient in e-commerce professional technology, and be familiar with the operation of agricultural economy law professionals, such ability for dealers to provide timely and accurate information for agricultural products, under the environment of Internet information collection, sorting, analysis of market conditions, positioning the product development strategy. Due to insufficient attention to agricultural electronic commerce talented person, the less investment funds, plus the training mechanism is not perfect, the current agricultural e-commerce talents are relatively lack, slow development of e-commerce in agriculture.

2.5 The lack of perfect credit environment

To carry out the electronic commerce, supply and demand both sides need to trade on the net, trust is the fundamental guarantee of trading success. At present China's commercial credit market system, the lack of complete system payment environment exist many hidden dangers, to a large extent hindered the development of e-commerce of agricultural products.

The solution of the problem needs by setting the reasonable operational mechanism and operational standards, to ensure that the supply and demand both sides establish a commercial credit, and through the watchdog, guarantee trading activities carried out in accordance with the specification.

3. The urgency of e-commerce sites to establish evaluation system of agricultural products

China's e-commerce market enter into the boom. According to China Internet network information center (CNNIC) released in July 2012 the 30th China Internet development statistics report, it shows that by the end of June 2012, a total of 538 million Chinese Internet users, Internet penetration rate of 39.9%. An increase of 24.5 million in the first half of 2012 Internet users, the penetration rate increase of 1.6% .Scale of the network shopping users reached 210 million, Internet utilization rate up to 39.0%, from 2011 users by the end of growth of 8.2%, growth in various network applications in the first place. Thus, e-commerce in playing a greater role, constantly changing people's consumption habits, e-commerce will become the main development direction of the future.

E-commerce penetrated into various industries, including agriculture, which belongs to the traditional industry. China is an agricultural country, at present China's agriculture is in the transformation of traditional agriculture to modern agriculture, agricultural development of the prominent problems is the contradiction between small-scale production and big market circulation, farmers e-commerce sites is to carry out the electronic commerce the most basic platform, integrating exhibition, trade, services, and other functions, is a good way to solve the contradiction between "small farmers and big market", to realize the agricultural production and market demand docking. Statistics show, at present the national agricultural website for more than 30000. But China's agricultural e-commerce has just started, business model and system are still not perfect, so China's agricultural e-commerce in the present stage is impossible to replace the traditional business model, China's agricultural e-commerce development is a gradual process, inevitably has not a unified standard. But with the application of e-commerce in agriculture, agricultural e-commerce sites have sprung up in succession, make the agricultural product market competition in increasingly fierce, the consumer in order to get the best service and expect to maximize their own interests, will look for a better shopping website. Website service quality determines the key enterprise competitiveness. For e-commerce site managers, therefore, they need to know the web site of the success and deficiency, the market potential and brand value evaluation website, in order to improve the service quality and future strategy.

To try to solve the above problem, this needs to take a set of practical indicator system and evaluation method. Therefore, this trend has prompted agricultural e-commerce sites evaluation activity of research and practice. Agricultural e-commerce sites, therefore, the establishment of the evaluation system is imminent.

4. E-commerce Sites Evaluation Method

There are many methods to evaluate the e-commerce sites , in many of the existing research results, each kind of e-commerce sites evaluation method has its unique discipline background, also have their own the most appropriate application environment, in the research and application ,we need to select the appropriate method in view of the actual situation. From the evaluation main body and the required data acquisition method, the current general e-commerce sites evaluation methods can be divided into three categories: subjective assessment and objective assessment and comprehensive evaluation.

(1)the subjective evaluation refers to rely mainly on people's subjective judgment to evaluate the quality of service quality in e-commerce. Expert evaluation and the questionnaire survey is a commonly used two methods of subjective evaluation.

A. expert judgment method

This is a way of prediction by experts, by every expert advice, and then to predict and analyze collected opinions, applied to the evaluation of e-commerce sites, which is held by industry experts rely on its own e-commerce sites of professional knowledge, evaluate the website service quality indicators forecast. This way can give full play to the experts of personal knowledge, experience and talent advantage.

Its advantage is simple and easy, experts can stay away from interference with psychological pressure, they can full play their personal intellectual potential . The defect is it is easily influenced by expert experience and subjective factors, unavoidably take one-sided.

B. Questionnaire Investigation Method

Questionnaire survey method is also called the questionnaire method which investigators designed questionnaire in the form of written questions according to the key indicators to the website, and then select respondents understanding a situation or consultation. We will have to research the problem formulation of a problem form, by mail, answering face to face or tracking access orientation, so as to understand the respondents' subjective views and opinions to a phenomenon or problem, finally we received opinions and views and evaluate e-commerce sites.

(2) the objective evaluation is based on the actual operation of the objective indicators to e-commerce sites in to judge the website service quality and operating efficiency.

A. site tracking statistics

Website tracking statistics is the method which used professional technical or specific software to long-term, ongoing tracking website traffic statistics to evaluate the website accordingly. Relatively famous sites, for example, the statistics institutions of the technical indicators ALEXA web site, it's ranking is recognized as the embodiment of the website profile. In ALEXA web site, we can inquire the evaluation of comprehensive ranking and flow of the website ranking, the number of users, web access, the link to visit the web site, the site's user's access behavior, the site's contact information, and the user of the site, etc., for example, China's Internet center (CNNIC) periodically release "quantity survey of Internet network information resources of China", it statistics the site daily page access number, the number of links to sites, the website information sources, number of web servers, and operating system type, etc. macroeconomics

B. Software for Real-Time Testing

Real-time software testing method is the use of professional performance test software for real-time testing site, evaluation of the website content such as velocity, links, efficient, program error rate. Common testing tools such as QALoad is compuware company performance testing tool suite of pressure load tools, QALoad is client/server system, enterprise resource configuration (ERP) and e-business application load test automation tool. It can simulate hundreds of thousands of concurrent users to perform critical business and complete the application test, the various performance of the current web site monitoring.

C. Statistical Evaluation

Statistical evaluation refers to the number on the scale of the show and explain the research object, the size of the level of high and low, moderate speed, as well as the analysis method and process of various kinds of relationship coordination. Number comparison, for example, according to the website of the objective to obtain data, intuitively the comparison, in order to obtain the evaluation of performance, quality of the web site.

(3)Comprehensive evaluation method is based on the theory of system engineering, first we should establish weighted comprehensive evaluation index system, and then collect data through technology measure, expert investigation, questionnaire survey, and then we used comparative analysis, model analysis and mutual combination of qualitative and quantitative methods to excavate and analysis the data and related data , last we get the evaluation result .

A. AHP (The analytic hierarchy process),formally put forward by The United States operational researcher Thomas Setiawan (T.L.Saaty) in the mid 1970s. It is a combination of qualitative and quantitative, systematic and hierarchical analysis method. According to the nature of the problem and form factor of target decomposition, and according to the relationship between the factors, it will be hierarchical factor set, form a hierarchy model; Then according to the analysis, according to two comparison relations between the two factors weight factors is set.

B. Fuzzy comprehensive evaluation is a kind of fuzzy mathematics principle analysis and evaluation system with "ambiguity" of things analysis method. It is mainly composed of fuzzy reasoning is a kind of combination of qualitative and quantitative, accurate and precise integration method of analysis and evaluation.

Applied to the evaluation of e-commerce sites is the first building site of each evaluation index fuzzy evaluation set, use the evaluation set to evaluate the indicators,; And then select the appropriate membership degree matrix for each index fuzzy evaluation of blurred, get the final website the indicators of the evaluation results.

C. R - Q type factor analysis. R - Q type factor analysis is a kind of multivariate analysis method developed on the basis of R and Q factor analysis, it combine two kinds of factor analysis, classifying drawing, and explaining to causes between variables and samples at the same time.

This method is proposed by the French scholar Benzenci in 1970. The evaluation process is to build index collection and grading for web properties respectively, then build the connection diagram through analyzing R and Q factor. The results of the analysis provided decision-making support for the web site.

5. The evaluation research of existing agricultural e-commerce sites

Yujia Wang^[1] analysis the level of electronic commerce function from the perspective of the websites of the agricultural enterprises. He introduced the fuzzy clustering analysis method of fuzzy mathematics and fuzzy pattern recognition method to analysis the current agricultural enterprises' role of e-commerce sites, and the ability of to restrict the agricultural enterprise e-commerce website function can improve many influence factors, and the development and construction of websites of the agricultural enterprise were discussed.

Liang Tan, Xicheng wang^[2] used e-commerce function, information release, e-commerce website quality, website characteristic application basic website evaluation index to study the agricultural websites, such as features of the application should also join the agricultural website, complementarity of agricultural information resources links, local characteristic service, personalized service and the new indicators, in order to better evaluate the quality of service.

Haixia Lu, Yan Li^[3] embarks from the fruit industry of agricultural products, through the questionnaire survey and analytic hierarchy process (ahp) to determine the index weight, and on the basis of mathematical model, proposed the fruit retail e-commerce site, a comprehensive evaluation index system. And easy fruit, fresh fruit pie and pinggu green fruit makes an analysis of the network as examples, finally it is concluded that fruits of e-commerce sites should pay attention to the following improvements: (1) when introduced products, it is important to note that to introduce detailed and vivid, let visitors can generate impulse buying. (2) Should pay attention to the design and use of community service function. (3) to do online and offline channels simultaneously.

Yicheng Liu, Hua Li^[4] thinks agriculture website evaluation according to the principle of combining subjective evaluation and objective data, from the statistical data, web technology, web interface, content, and safety management system and the subjective evaluation etc. Put forward a set of evaluation index system of agricultural websites, including five primary indicators and 16 secondary indexes, according to the evaluation of key gives different weights to each index, in order to evaluate the quality of service.

Famin Yi, Xianmin Rong^[5] quote a comprehensive evaluation method^[5] to establish agricultural website evaluation index system, the system includes information indexes, function indexes, the technical indicators, and 40 websites of the agricultural enterprises in Guangdong province are analyzed in practice. On the basis of the measurement data of 40 samples of agricultural website, using SPSS analysis software on the sample cluster analysis. Finally found that the technical level of agricultural website does not constitute a diversity index, information and function level become the main factors influencing the level of agricultural e-commerce website.

Na Li^[6] use the AHP method to determine evaluation index weights, and use of multi-level gray evaluation method to establish evaluation model, based on the construction of evaluation index system for agricultural B2B e-commerce sites to evaluate operating efficiency. Constructing a system including overall operation, website construction, marketing and service which will be an index of the ability of agriculture B2B e-commerce operation efficiency evaluation system. For Chinese agriculture B2B e-commerce site optimization, improve and provides guidance to management specification.

6. Conclusion

Comprehensive research situation at home and abroad, at present the development of China's agricultural e-commerce is still in its infancy, the evaluation of agricultural e-commerce sites have not form a unified theory system, various methods are still on the stage of theoretical exploration, all kinds of theory only from the perspective of one or several studies some properties of the e-commerce sites, the lack of a comprehensive system of evaluation system. Most of the evaluation index is derived from the author's subjective analysis of site, the scientific nature of the index selection is not strong. Some evaluation model cannot be validated, make its evaluation results of reliability is low. In addition, some evaluation indexes are in general, is not easy to grasp. Based on the current agricultural e-commerce sites evaluation problems, It requires a set of reliable evaluation system. Such a system can science reflects the website service quality, which can provide decision support to the development of agricultural e-commerce sites.

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