

The Study of the Farmer Financial Institutions Survey AI Model in Papua New Guinea: Numerical Analysis by Cloud Computing

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Abstract. The questionnaire survey method is the research method and the structural equation model (SEM) as a statistical analysis. The expected result will be the establishment of the import model for the first farmer financial institution in PNG and the successful strategy for providing the first farmer financial institution in PNG and the concept of research results can be applied to third-world countries.

Keywords: Cloud Computing, Artificial Intelligence, Information Systems Success Model, Theory of Reasoned Action, Transaction Cost Theory, Structural Equation Model, Papua New Guinea, mathematical statistics.

1. INTRODUCTION

1.1 RESEARCH PROBLEM

Of the more than 7 million people in PNG, less than 1.5 million own bank accounts, providing basic financial services to residents in remote areas. This is an important step for the economy to achieve diversification and reduce resource dependence. Moreover, PNG's people in rural areas financial exclusion is an important issue. In the past few years, PNG government has been working hard to solve this problem. Because farmers' financial institution are still unfamiliar to the development of PNG finance, and there are few relevant research literatures in the country. There is no literature research and discussion. Therefore, this study explores the emerging countries of PNG. What are the key successful factors in the construction of the import model of domestic farmer financial institution?

1.2 Research Purposes

- Establishing the import model of the first farmer financial institution in PNG.
- According to the model established in the preceding paragraph, the strategic direction for the success of the first farmer financial institution in PNG is proposed.
- The concept of this research can be applied to third-world countries.

2. LITERATURE REVIEW

2.1 Information System Success Mode

DeLone and McLean[1] first put forward the information system success model in 1992, which is the most famous model in the research of information system success. It provides a good theoretical framework for measuring the performance of information system. In 2003, DeLone and McLean improved the model according to relevant research results and practical application after continuous analysis and research. They believed that the change of information system role made service quality become a separate variable inevitably, so they added service quality into the model. The improved D&M ISM believes that the quality of information system mainly includes three aspects: system quality, information quality and service quality. The quality of information is related to the accuracy, relevance, ease of understanding and personalization of the content on the website. Quality of service is the overall support or back office services provided by the service provider, which can be measured by timeliness, reliability, etc. Intention to use or use is a comprehensive measure of a user's intention to use or behavioral outcome for all activities, from accessing a website to within a website, navigating to information searching and doing things. User satisfaction is an important factor to measure the user's evaluation of information system, and it is also the overall attitude towards the use of information system. In the improved model, "personal impact" and "organizational impact" are unified into a new factor, that is, net income. Net income has a feedback effect on user satisfaction, use intention or use, and the impact of information system may be positive or negative, which is shown as positive or negative on net income.

2.2 Theory of Reasoned Action

The purpose of TRA is to explore and predict the decision-making process of individual's behavioral intention (BI) and actual behavior (B) of a particular or certain obsessive thing. Fishbein and Ajzen[2] proposed many attitudes, subjective norms, intentions and many in the 1970s. The study of behavioral variables was revised and verified several times during this period. In 1980, the complete structure of TRA was developed. Ajzen and Fishbein (1980) proposed attitude toward (A) and subjective norms. (subjective norm, SN), amending the previously proposed Fishbein model, this theory believes that behavioral intentions are influenced by "attitudes" and "subjective norms," and the direct factor in the actions that individuals ultimately take is behavioral intent, therefore, put forward a complete framework between the four.

2.3 Transaction Cost Theory

Transaction cost theory is derived from the Nobel economics winner Coase (Rase, R.H., 1937)[3]. Transaction cost refers to the “triviality of cost”. However, different transactions often involve different types of transaction costs. For example, transaction costs proposed by Williamson (1975) include: search costs, information costs, bargaining costs, decision costs, costs for monitoring transactions, and default costs.

3. RESEARCH METHODS

3.1 Research framework

The paper framework is shown in figure one.

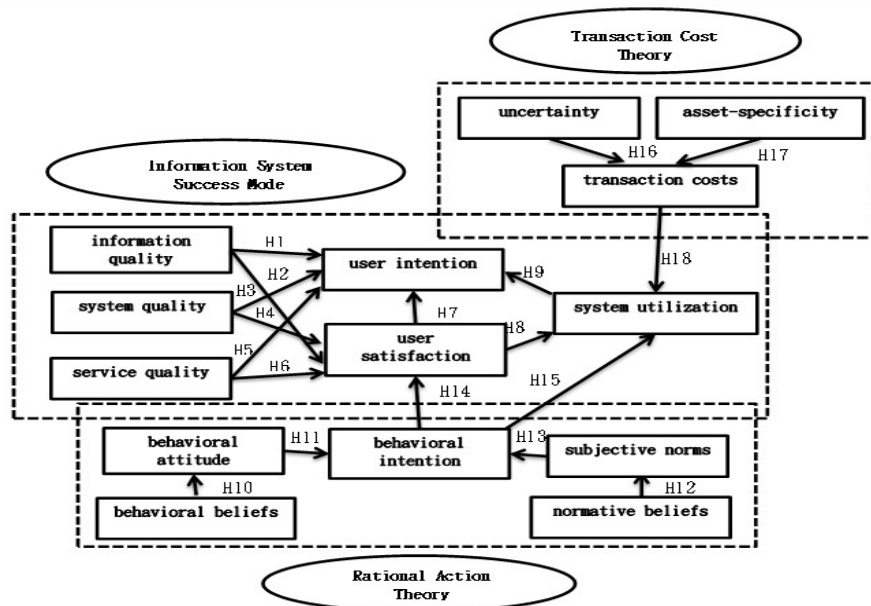


Figure 1 Research Framework

3.2 Research Object and Questionnaire Design

This study explores about the key successful factors in the construction of the import model for the first farmer financial institution in the emerging countries of PNG. This is because the knowledge level and education level of the PNG’s farmers are generally not high, and the PNG is far away. Therefore, with the Taiwanese people who have contacts with farmers' associations or financial institutions as research objects, effective questionnaire surveys are conducted. Therefore, the study sample of this study was selected and divided into the following three parts:

- Survey respondents were randomly selected by the financial industry consumers.
- Survey respondents were randomly selected by the information industry consumers.

- Other non-related consumers mentioned above were random sample questionnaire survey respondents.

In order to consider the validity of the study sample recovery, 366 questionnaires were distributed according to the normal distribution method. The questionnaire survey time was from February 2018 to March 2018. Questionnaire design mainly focuses on "information quality", "system quality", "service quality", "user intention", "user satisfaction", "system utilization", "behavioral intention", "behavioral attitude", "behavioral beliefs", "subjective norms", "normative beliefs", "uncertainty", "asset-specificity" and "transaction costs" were designed. The questionnaire was measured using the Likert Scale.

3.3 Research and Analysis Methods

This study verifies the use of Structural Equation Modeling (SEM) combined with multivariate regression and factor analysis to analyze the path of potential variables and examine the causal path relationships among potential variables, and to adopt the research tool PLS 2.0 (PLS-SEM) to get the structural equation model.

The structural equation model is a statistical model that presents relationships between analytical variables in multiple linear models. The main focus is on the unobservable latent variables and the discussion of the relationship between variables. The purpose of the structural equation model mainly includes the following two items. One is to establish a high-fitting statistical model based on the logical relationship among multiple variables and the second is to generate strategic implications based on structural coefficients. The logical relationship between variables can be presented through system relationships. In the theoretical framework of structural equations, the Structural Model and the Measurement Model are included.

4. RESEARCH RESULTS AND ANALYSIS

I conduct my research in SME and operate in PLS. At the same time, the reliability and validity of the results of this study meet the standards. The relevant conditions are also in line with the relevant requirements. The relevant data is shown below table one.

Table 1 Study of Structural Model Hypothesis Verification Results

Hypothesis	Path coefficient	T value	P value	Significantness	Result
H1	-0.004	1.245	≥ 0.05	Not Significant	Invalid
H2	0.110	1.995	< 0.01	**	Support
H3	0.199	11.266	< 0.001	***	Support
H4	0.555	10.737	< 0.001	***	Support
H5	-0.116	3.686	< 0.001	***	Support
H6	0.384	10.342	< 0.001	***	Support
H7	0.776	20.503	< 0.001	***	Support
H8	0.498	11.208	< 0.001	***	Support
H9	0.033	0.766	≥ 0.05	Not Significant	Invalid
H10	0.605	9.172	< 0.001	***	Support
H11	0.526	16.392	< 0.001	***	Support
H12	0.429	6.128	< 0.001	***	Support
H13	0.493	15.266	< 0.001	***	Support

H14	-0.028	0.657	≥ 0.05	Not Significant	Invalid
H15	0.272	4.264	< 0.001	***	Support
H16	0.252	4.455	< 0.001	***	Support
H17	0.008	0.107	≥ 0.05	Not Significant	Invalid
H18	-0.378	7.563	< 0.001	***	Support

5. RESEARCH CONCLUSIONS

Agriculture is the foundation of national development, people's livelihood, and ecological conservation. Looking at the world, every country needs agriculture and agriculture.

- Confirming the core competitiveness

The non-trade wealth and local characteristics such as the six specialties (production, life, and ecology) of agriculture (vision, smell, taste, hearing, touch, and feeling) are the core knowledge or competitiveness of agriculture.

- Attach importance to the end customer

Having core knowledge or advantages does not necessarily mean that you can sell money. You must rely on knowledge to make money. Apart from having to inventory the core competitiveness or resources that can be sold around you, you must also pay attention to customers and promote customer experience management in order to get consumers' acceptance.

- Promoting strategic innovation

Michael Porter, the master of competitiveness, once said: "The handicrafts that combine local culture are the most competitive products in the world." The local people seize the tourist's psychology, play a creative role in making waste a treasure, and fully demonstrate the spirit of the knowledge economy.

- Conduct knowledge management

In order to promote agricultural knowledge management, individual business units must not only have strong and committed leaders, but also have a clear organizational development vision. The use of organizational and model learning, the establishment of a knowledge management data center, and the sharing of management results are all very important.

- Effective use of information and network tools

To deliver and apply leisure agriculture and innovative products or services, you must make good use of information and networking tools. Before using information and networking tools, we must focus on the core knowledge or competitiveness of agriculture, generate specific business models through appropriate strategic innovations, and then use the Internet to collaborate with the physical market to promote marketing.

- Using strategic alliances to create a value chain

At present, the strategic layout of agricultural development in Taiwan should use the core knowledge or competitiveness of agricultural production technologies, living experiences, ecological landscapes, and local cultural characteristics, and use information and networks to promote knowledge management and marketing, and develop leisure agriculture and fisheries.

Activating the agricultural and fishing village economy to create employment opportunities and sustainable income on the ground[4].

In conjunction with the sample questionnaire survey, although the knowledge level and educational level of the PNG's farmers are generally low and distant, this study uses Taiwan's past agricultural experience as a model for consumers who interact with farmer's associations or financial institutions. The research object, finally, proposes the future strategic direction for the first farmer financial institution in PNG and applies the concept of research results to the third world countries, which is to contribute to this research[5].

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