

Management and Achievement Motivation Factors Influencing Decision Making in Smart Agribusiness 4.0 of Phranakhon Si Ayutthaya Rajabhat University Students by Logistic Regression Analysis

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Abstract - This quantitative research of management and achievement motivation factors influencing decision making in smart agribusiness 4.0 of Phranakhon Si Ayutthaya Rajabhat University students by logistic regression analysis focused on the study of the decision making of young generation people to do smart agribusiness. The research aimed to study the demographic factors, management factors, and achievement motivation factors to answer the three hypotheses which were H₁: demographic factors influence the decision making to do smart agribusiness, H₂: management factors influence the decision making to do smart agribusiness, and H₃: achievement motivation factors influence the decision making to do smart agribusiness. The research respondents were 326 students from the Faculty of Management, Phranakhon Si Ayutthaya Rajabhat University. A questionnaire was used to gather data for analyses. Logistic regression analysis was used to analyze the gathered data.

According to the examination of Hypothesis 1, it was found that when the students added one level of importance to the factors of

year of their study (X₁) and their majors of study which were Marketing (X₂), Accounting (X₃), Management (X₄), and Business Computer (X₅), the chance that they would probably decide to do smart agribusiness increased 19 times, 258 times, 232 times, 255 times, and 27 times, respectively.

The examination of Hypothesis 2 revealed that when the students added one level of importance to the factors of strategies (X₈), organizational structure (X₉), and attitude (X₁₀), the chance that they were likely to decide to do smart agribusiness increased 10 times, 8 times, and 11 times, respectively. However, there were not any variables that could be entered the logistic regression analysis to examine Hypothesis 3.

Keywords - Logistic Regression Analysis, Smart Agribusiness, Management, Decision Making, Achievement Motivation

I. INTRODUCTION

With the establishment of ASEAN Free Trade Area under ASEAN Economic Community, business competitiveness has dramatically

increased (Department of Foreign Trade, 2011). This, in turn, creates the labor circulation and business competition in all trading elements of governmental and private sectors. Moreover, attitudes of young generation people toward occupational selection have changed (Harnkul, 2013). According to the study of generation categorization, it is found that people in different generations have diverse opinions, attitudes, personality, and behaviors which can be obviously recognized. For example, people in Post War Generation are those who are tolerant, honest, and less sensitive toward prices, while people in Y-Generation are those who are independent, neglect to commands, impatient, challenge-oriented, and less royal toward product brands (Howe & Strauss, 2000).

Regarding the stated aspects, young generation people are increasingly interested in having their own business. Considering the growth rate of gross domestic product (GDP) of small and medium enterprises in 2016, it was found that the overall national growth rate was at 3.2 with the growth rates of 5.1 for small enterprise (SE), 4.8 for small-medium enterprise (SME), 4.3 for medium enterprise (ME), and 2.8 for large enterprise (LE), respectively (Office of the National Economic and Social Development Council, 2017). Consequently, the government has set a goal to support young entrepreneurs by using innovation as a business driver of those businesses which have been analyzed and selected by national business experts. Furthermore, innovation is also a part of the mechanism that helps developing the country to Thailand 4.0 as identified in the government's policy (Bureau of Research and Development, Office of Civil Service Commission, 2017). Another important thing is to increase capability of startups and help developing them to be smart enterprises comprehensively (Department of Business Development, Ministry of Commerce, 2017). Finally, startups will be promoted to be entrepreneurs that use innovation and technology to successfully drive their business.

Since Thailand is an agricultural country, providing support to agricultural sector is necessary to sustainably develop the country. In addition, the new agribusiness, known as Smart Farming, are currently extremely popular, and the new idea of doing agribusiness has been added in the agricultural development plan (Ministry of Agriculture and Cooperatives, 2016) which is linked and correlated to the 12th National Economic and Social Development Plan (2017-2021). The plan emphasizes on the study of young generation people's interests in agriculture. It is believed that if the governmental and private sectors support young generation people to do agribusiness by providing them relevant knowledge and skills, they will possibly be more interested in doing agribusiness. As this is related to the Thailand 4.0 plan, the study of young generation people's interests in doing agribusiness becomes an urgent agenda that needs to find out affecting factors so that the right supports and help can be provided to them to enhance the decision to do agribusiness. Consequently, this research was conducted to study the importance of management and achievement motivation factors that influence the decision making to do smart farming of students at Phranakhon Si Ayutthaya Rajabhat University by using logistic regression analysis.

II. RESEARCH OBJECTIVES

This research aimed to:

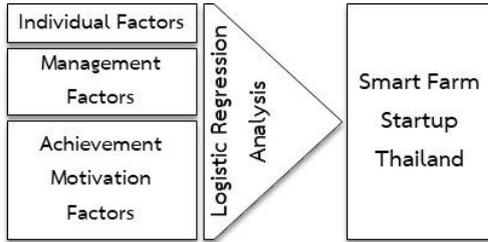
- 1) To Study demographic factors that influence the decision making to do smart agribusiness of students at Phranakhon Si Ayutthaya Rajabhat University.
- 2) To analyze the management and achievement motivation factors that influence the decision making to do smart agribusiness of students at Phranakhon Si Ayutthaya Rajabhat University.

III. HYPOTHESES

Hypothesis 1: Demographic factors influence the decision making to do smart agribusiness.

Hypothesis 2: Management factors influence the decision making to do smart agribusiness.

Hypothesis 3: Achievement motivation factors influence the decision making to do smart agribusiness.



(Department of Business Development, Ministry of Commerce, 2016)

Fig. 1 Logistic Regression Analysis Framework

IV. RESEARCH METHODOLOGY

A. Population and Samples

The population of this research were 1,136 students who, at the time of the research, were first-to-fourth-year students in the Faculty of Management, Phranakhon Si Ayutthaya Rajabhat University and registered in the first semester of the 2017 Academic Year. The samples were selected based on Taro Yamane's formula with the error value (E) of 5% and reliability value of 95% (Yamane, 1973). So, the total samples for this research were 316 students.

B. Research Instruments

The data for analyses were primary and secondary data. To gather the primary data, a questionnaire was distributed to the samples. The secondary data were collected from textbooks, research articles, and related literature based on the frameworks of demographic and social statistics, Peter's Management by Objective (MBO) (Peter, 1954), McKinsey 7-S Framework (Tipler & Vickers, 2014), and Achievement Motivation (McClelland, Atkinson, & Clark, 2012).

C. Validity and Reliability Analysis

Items in the questionnaire were checked by experts and analyzed to find out the value of index of item-objective congruence (IOC). IOC is the validity value which shows the correlation between the questionnaire items and the research objectives. The IOC value of the questionnaire for this research was 0.91. The reliability value was analyzed by using Cronbach's Alpha Coefficient analysis with 40 sets of the questionnaire. The reliability value (α -Coefficient) of management factors was 0.923, and the reliability value (α -Coefficient) of achievement motivation factors was 0.877.

V. RESULTS

1) Interest in doing Smart Farming

It was found that 295 students (90.5%) were interested in doing smart farming.

2) Logistic Regression Analysis

Considering the statistical value of Chi-square which was 87.844 with the statistical significance value of 0.000, it could be said that at least one factor influenced the students' decision making to do smart agribusiness. The -2 value of Log-likelihood was little which meant that the equation or the constructed model was qualified or harmonious with the data. The value of Cox and Snell R-Square was 0.236 which was not close to 0 (zero) showing the harmony of the constructed model. The quality of the constructed model was compared with the null model which did not have independent variables, and it was found that the value of Nagelkerke R-Square was 0.506. This meant that the independent variables could explain the variation value (50.6%) of the students' decision making to do smart agribusiness. Considering Wald Statistic value which was more than 1 and had the statistical significance value fewer than 0.05, it was found that 11 independent variables (X) affected the prediction equation to predict the students' decision making to do smart agribusiness, and the logistic regression equation was $\hat{Y}(\text{Smart Farm}) = -6.677 + 2.937X_1 + 5.554X_2 + 5.448X_3 + 5.541 X_4 +$

$$3.295X_5 - 3.565 X_6 - 2.716 X_7 + 2.280 X_8 + 2.100 X_9 + 3.044 X_{10} - 1.575 X_{11}.$$

Hypothesis 1: Demographic factors influence the decision making to do smart agribusiness.

According to the data analysis, the factor of the students' majors influenced their decision making to do smart agribusiness. When the students gave one level of importance to Marketing (X_2) as their major, the chance that they would probably decide to do smart agribusiness increased 258 times, and the chance that they would decide to do smart agribusiness increased 255 times when they gave one level of importance to Management (X_4) as their major. The chance that they would decide to do smart agribusiness increased 232 times when they gave one level of importance to Accounting (X_3) as their major.

Hypothesis 2: Management factors influence the decision making to do smart agribusiness.

Considering the factor of strategies (X_8), it was found that when the students gave one level of importance to the factor of strategies, the chance that they would probably decide to do smart agribusiness increased 10 times. When they gave one level of importance to the factor of attitude (X_{10}), the chance that they would probably decide to do smart agribusiness increased 11 times.

Hypothesis 3: Achievement motivation factors influence the decision making to do smart agribusiness.

There were not any independent variables (X_i) for the logistic regression equation because the statistical significance value was more than 0.05 (Sig > 0.05). According to the hypothesis of suitability test of model prediction equation, the Chi-square statistical value was 11.958, and the statistical significance value was 0.153 which was more than 0.05. This could be concluded that the equation was not suitable. However, under the logistic regression equation, the overall percentage correct was 93.6%.

VI. CONCLUSION

Regarding the data analyses, it could be concluded that the factor of the students' year of study influenced the decision making to do smart agribusiness. The students who were freshmen were likely to decide to do smart agribusiness more than the other groups of students. The chance increased 19 times. This is resulted from the care provision policy and good communication of what university study means, especially clear information about curriculum and programs of study. The students received suggestions and information about the possibility of doing smart agribusiness after their graduation from the university. Another factor was their majors of study which were Marketing, Accounting, Management, Business Computer. When the students gave one level of importance to their majors of study, the chance that they would probably decide to do smart agribusiness increased 258 times, 232 times, 255 times, and 27 times, respectively. The reason why the students' majors of study influenced their decision making to do smart agribusiness seemed to be due to the teaching plan of each major which was directly related to doing business under the strategic plan of the Faculty of Management.

VII. RECOMMENDATIONS

For further studies to find out factors affecting the decision making to do smart agribusiness of young generation people, it is recommended that behavioral factors be also studied. Moreover, an in-depth study of knowledge in doing smart agribusiness and expectations toward doing smart agribusiness of young generation people should be conducted to gain more comprehensive information.

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(Arranged in the order of citation in the same fashion as the case of Footnotes.)

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