Factors Affecting the Participation in Sea Farming Project
An Empirical Finding from Panggang Island, Indonesia

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1. Introduction

Aquaculture has an important role in reducing poverty and ensuring food security, particularly within coastal areas. Kepulauan Seribu is a part of Jakarta, but it experiences severe losses due to pollution and environmental degradation caused by mining, marine transport, irresponsible and destructive fishing activities in the area. In fact, it has the highest poverty rate compared to other areas in Jakarta. In order to improve the local community's welfare while conserve marine ecosystem, the local government and Center for Coastal and Marine Research Studies of Bogor Agricultural University (CCMRS-IPB) initiated a project called sea farming in Panggang Island, Kepulauan Seribu.

2. Objectives

The study aims to examine the factors influencing participation on sea farming project in Panggang Island.

3. Literature Review

- Factors that determine individual participation or adoption of aquaculture are:
  a. Economic factors and experience (Lashgarara and Saharkhiz, 2012).
  b. Personal characteristics and assets ownership (Kapanda et al., 2003).
- Probit is a classical quantitative method to determine participation (e.g. Nagubadi et al. 1996).
- Sea farming is a project to create sustainable shallow marine resource management system which uses mariculture as a base-activity.
- Information about the sea farming:
  - Period : 2005 - 2010
  - Financing : Local government fund (Kepulauan Seribu).
  - Partnership : Local government as the main sponsor and CCMRS-IPB as the project manager.
  - Goals : a. Improving local community's welfare; and b. Conserving marine ecosystem.
  - Target Group : Fishermen and small-scale fish farmers.
  - Number of Participants : a. Total participants are 75 households (2005 – 2008). b. Active members are 51 households.
  - Mariculture : Rearing brown-marbled and humpback grouper.

    Source: CCMRS-IPB (2006)

- Sea farming activities are:
  a. Setting up the SF regulation, institution, and infrastructure.
  b. Providing training for new member.
  c. Providing fingerling using "revolving fund" mechanism.
  d. Connecting member to the existing and potential market.
  e. Providing field facilitator to assist member for any technical and non-technical problems.


4. Research Method

- The field survey was conducted on August 2012 in Panggang Island.
- The sample consisted of 34 households selected as treatment group using **stratified random sampling** technique and 43 households selected as control group using **convenience sampling** technique.
- The data were analyzed using **probit regression**.

References:
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5. Results

Characteristics of Sample Households in Panggang Island
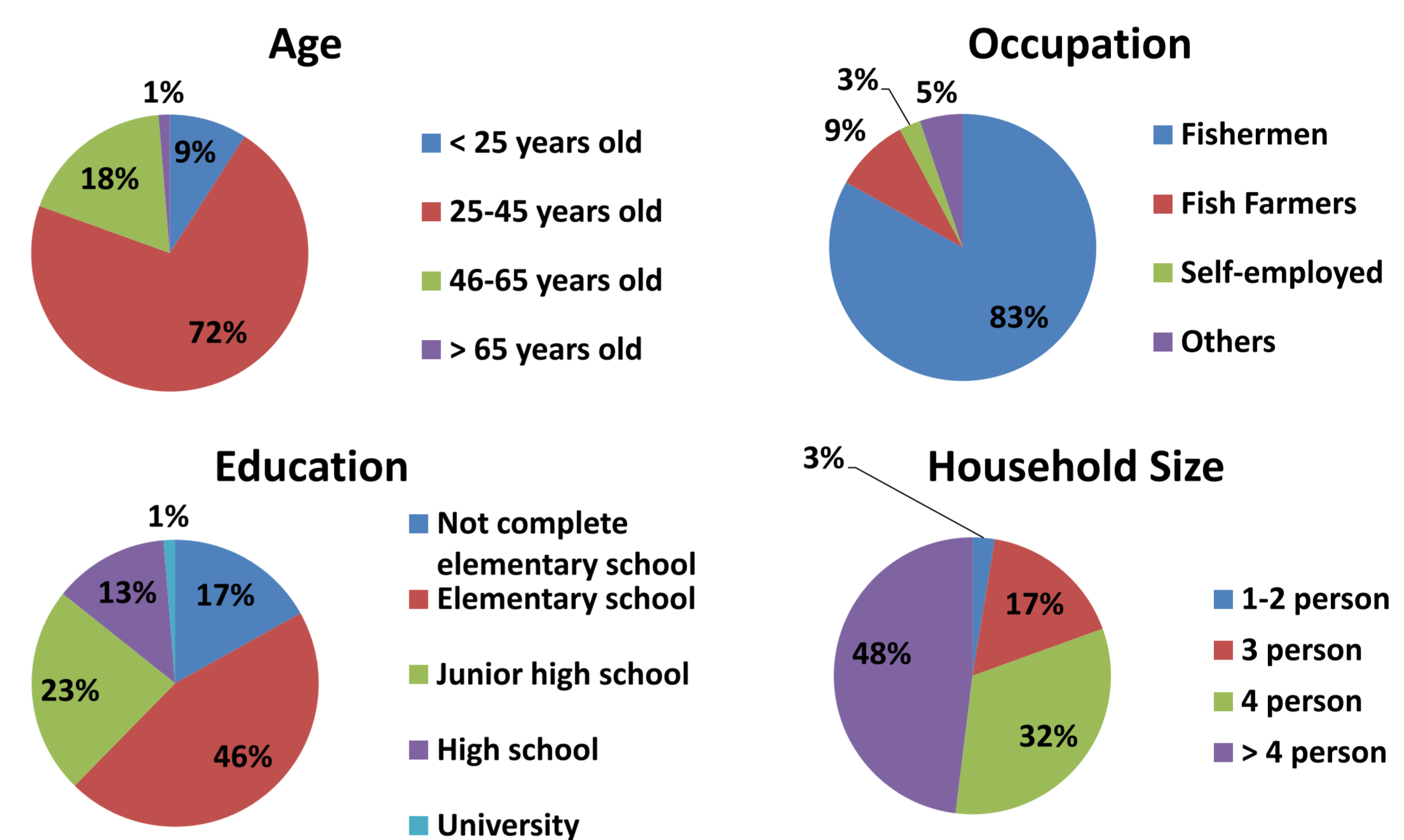
What are factors affecting sea farming participation in Panggang Island?

- Factors affecting sea farming participation are: **education**, **occupation**, **household size**, and **membership in non-sea farming organisation** (Table 1).

Table 1. The Determinants of Sea Farming Participation

Variables	Expected Sign	Coefficients	Marginal Effect	Z	
Age (years)	Positive	0.0222	0.0084	0.7500	
Education (1/0)	Positive	-2.2902	-0.4937	-4.8900	***
Occupation (1/0)	Positive	-2.3859	-0.7158	-5.2900	***
Household size (people)	Positive	--0.4255	-0.1616	-2.1400	**
Organisation member (1/0)	Positive	-2.6207	-0.6645	-6.9300	***
Television ownership (unit)	Positive	0.3628	0.1378	1.1500	
Mobile phone ownership (unit)	Positive	0.4629	0.1758	1.1800	
Boat ownership (unit)	Negative	0.6787	0.2577	1.6300	
Constant		3.2002	-	-	
Summary Statistics					
Likelihood Chi^2		54.4100			
Prob > Chi^2		0.0000			
Pseudo R^2		0.5148			

Source: own calculation
Notes: Numbers are subject to rounding. ** Significant at 5% level; *** significant at 1% level

- Contrary to the initial hypothesis, **all significant factors** are **reducing the probability** of one person to participate in the project.

6. Conclusions and Future Work

- The result indicates that the project is more attractive for those whom are less educated, not a fisherman, have less household members, and less involvement in non-sea farming organisation. It implies that the project manager should socialise the objectives and positive impacts of the project effectively to attract the fishermen as main beneficiaries.
- Further study should incorporate more aspects, e.g. selection bias on household participation and enlarge the sample size.

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