Chapter 4

Further Statistical Analysis

The previous chapter, the results of preliminary data analysis were presented and revealed that the source of income, local advisor, and peers were significantly associated with success of the MF activities. This chapter, further analysis of association between the outcome and determinants are presented. Logistic regression was used to assess the effect of the determinants on the outcome.

4.1 Logistic regression analysis

Logistic regression analysis was used in order to assess the association between outcome variable and determinant variables after controlling for two or more confounders. Adjusted odds ratios (OR) and 95% confidence intervals (CI) of the adjusted OR were estimated from the main effects of logistic models. Using a chi-squared statistic based on the deviances, the fitness of alternative models could be compared. The results after fitting a full logistic regression model are shown in Table 4.1.

Determinants	Adjusted OR (95% CI)	Wald's test (p-value)	L-R test (p-value)
Province			0.670
Pattani	1	-	
Yala	0.29 (0.01,5.53)	0.408	
Narathiwat	0.51 (0.06,4.19)	0.528	
Songkla	0.43 (0.06,2.89)	0.382	
Religion			0.616
Islamic	1	-	
Buddhist	0.19 (0.00,127.8)	0.619	
Age group			0.639
≤40 year	1	-	
40+ year	1.4 (0.35,5.63)	0.639	
Education			0.304
Secondary	1	-	
High school or more	0.44 (0.09,2.10)	0.306	
Marital Status			0.180
Married	1	-	
Other	0.39 (0.10,1.57)	0.187	
Family size			0.865
1-3 person	1	-	
4+ person	1.16 (0.21,6.54)	0.865	
Phase			0.790
Phase 1	1	-	
Phase 2	0.02 (0.00,11.96)	0.238	
Phase 3	0.01 (0.00,16.70)	0.996	
Phase 4	0.03 (0.00,14.71)	0.267	
Phase 5	0.02 (0.00,13.45)	0.244	
Phase 6	0.01 (0.00,15.80)	0.236	
Phase 7	0.04 (0.00,17.84)	0.308	
Years			0.665
2008	1	-	
2009	0.61 (0.16,4.57)	0.628	
2010	0.54 (0.04,2.84)	0.382	

Table 4.1: The full model of association between success and determinants

Determinants	Adjusted OR (95% CI)	Wald's test (p-value)	L-R test (p-value)
Small scale businesses			0.177
Commerce	1	-	
Foodstuff	0.41 (0.06,2.71)	0.356	
Other	1.95 (0.25,15.46)	0.525	
Business skills			0.548
No	1	-	
Yes	0.03 (0.00,15.80)	0.998	
Source of income			0.132
MF activity	1	-	
Multiple sources	4.73 (0.55,40.58)	0.156	
Marketing problem			0.310
No	1	-	
Yes	0.01 (0.00,17.84)	0.996	
Local advisor			0.003
No	1	-	
Yes	17.26 (2.07,144.25)	0.009	
Peer business owners			0.058
No	1	-	
Yes	3.62 (0.92,14.22)	0.065	

Deviance: 61

Table 4.1: The full model of association between success and determinants (cont.)

Table 4.1, the model initially contained additive effects of province, religion, age group, education, marital status, family size, phase, years, small scale businesses, business skills, source of income, marketing problem, local advisor, and peers. Reference groups were designated for each variable. The L-R test was used to assess statistical significance of the association between outcome and each determinant in the model. The association between each category of determinant and outcome was assessed with the Wald-test. The results showed that local advisor and peers were significantly associated with success of the MF activities. This model gives a residual deviance of 61 with 82 degrees of freedom.

4.2 Reduced model

As a result, the association between the success of the MF activities business for livelihood and province, religion, age group, education, marital status, family size, phase, years, small scale businesses, business skills, source of income, and marketing problem were removed from the model in multivariate logistic regression analysis. The reduced model is shown in Table 4.2.

Determinants	Adjusted OR (95% CI)	Wald's test (p-value)	L-R test (p-value)
Local adviser			<0.001
no	1	-	
yes	13.19 (3.30,52.65)	<0.001	
Peer			0.005
no	1	-	
yes	4.23 (1.49,12.00)	0.007	
			Deviance: 80

Table 4.2: Reduced model of association between success and determinants

Table 4.2 shows the result of the logistic regression analysis after omitting the determinants with p-value greater than 0.05 using backward elimination. After adjustment for all covariates, the reduced model showed that province, religion, age group, education, marital status, family size, phase, years, small businesses, business skills, source of income, and marketing problem were not significantly associated with the MF activities success, while two factors: local advisor and presence of peers, were all highly significantly associated with the success of the MF activity. The residual deviance for the final model was 80 with 82 degrees of freedom.

Women who had been getting support from local advisor were more likely to become success than those without getting any support from local advisor (OR 13.19; 95%CI 3.30-52.65). Women who had peer-to-peer support were more likely to be success in the MF activity business than those who were working alone (OR 4.23; 95%CI 1.49-12.00).