

Assessing Elite Capture in “Engaging Women and Men Farmers in Participatory Research and Extension” Project: A Case Study in Magway Township

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Abstract

The study was carried out to assess the existence of elite capture in the Australian Centre for International Agricultural Research (ACIAR) projected villages. The survey was conducted in three projected villages (Pho Lay Lone, Nat Kan and Aung Myay Kone), Magway Township in June 2017. The data on household livelihoods were collected from 40 households (20 projected households selected by the ACIAR project with predetermined criteria and 20 non-projected households selected randomly) from each of three projected villages to assess their original human, natural, financial, social and physical capitals. It was found that almost all of the natural, social and physical capitals of the projected households were higher than those of the non-projected households in Pho Lay Lone and Nat Kan villages. In comparison the status of human and financial capitals of the projected households was superior to those of the non-projected households in Nat Kan village. It indicated that the project have chosen the households whose livelihood were better than those of the remaining households in Pho Lay Lone and Nat Kan villages. Therefore, elite seemed to capture the project in Pho Lay Lone and Nat Kan villages. In Aung Myay Kone village, most livelihood assets under human, natural, financial, social and physical capitals were not significantly different between the projected and non-projected households. Therefore, elite capture could not be observed in the selection of project households in Aung Myay Kone village. It indicated that smallholders had little chance to get the benefits of the project in Pho Lay Lone and Nat Kan villages while the benefit of the project could cover the whole community in Aung Myay Kone village. Therefore, it can be suggested that there should be a proper analysis on the livelihoods of farm households in the target areas before choosing the projected participants to prevent the elite capture.

Key words: elite capture, ACIAR project, livelihood assets, Magway Township

Introduction

Myanmar is a developing country and there are many Non-Government Organizations (NGOs) and International Non-Government Organizations (INGOs) to help and encourage the livelihood of Myanmar people with some extend by their own perceptive and objectives. Among them, the Australian Center for International Agricultural Research (ACIAR) is an organization which subsidizes to poverty alleviation and improved livelihoods through more productive and sustainable agriculture. Australian Center for International Agricultural Research helps developing countries such as Cambodia, China, Philippines, Vietnam, Myanmar and Bangladesh, etc. It has facilitated agricultural

research partnerships combined with technical knowledge in its theme areas of: crops, livestock, fisheries, natural resources, forestry and socioeconomics and policy. The projects of ACIAR aim to produce specific research outputs and transform them into development outcomes such as improved food security, better nutrition, improved health, and increased prosperity (ACIAR 2016a).

The main focus of ACIAR’s programs in Myanmar is to secure improvements in food security and rural incomes for smallholders in the central dry zone and the Ayeyarwaddy Delta through increased production and improved access to markets and services (ACIAR 2013). The current project of ACIAR in the central dry zone of Myanmar aims to develop and evaluate an adult-learning approach to

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improve crop productivity and farmer livelihoods and simultaneously improve the role of women in agricultural decision making and through that their status (ACIAR 2016b).

Non-government organizations and humanitarian supports in rural areas need to analyze whether they have got their goals. Because, when the rural people involve in those supports and help, elite capture could probably happen in the projected area. Elite capture can be defined as the control and use of project funds by an individual or a group of individuals who were not the primary target of the project (Platteau et al. 2014). Elite capture occurs when project funds are controlled by an elite and often do not reach to whom they are intended. Elite capture can happen between communities or within a community. Elite capture assessment mainly depends on livelihood of people. Elites can be defined along a variety of lines including income, assets, education and power. In the simplest interpretation, the elites are most often defined as those with the most money (Araujo et al. 2008). It is also found that diversity of income sources is different income classes and this diversification differs between better off and poorer households. The income of better off households receives from various nonfarm business activities (trade, shop keeping, etc.) while the poorer households get their income as casual labor. Also, wealthier households will save a greater portion of their incomes. Differences in income are largely apparent in the material goods. Wealthier family owns motorcars, motorbikes, televisions and phones, etc. (Carrick-Hagenbarth 2016).

Land holding is the other important determinant of elite. In developing countries, land, an immovable asset, is of high importance in local rural society (Dutta 2009). Education can also create elite power, and as such, provide an avenue for elite capture. In general, schooling was interrelated with age. On the other hand, the younger generations were significantly better educated than the older generations. Historically, there was challenging to attend school and there was only monastery education in rural areas, due to lack of transportation and a lack of rural schools in rural areas of Myanmar. Over time, there has been emphasized on expanding primary education and secondary education in rural areas (Carrick-Hagenbarth 2016). Marvel and Lumpkin (2007) stated that education improve a person's information and skills which are needed to success recognition and pursue business opportunities. A good education also influences access to local infor-

mation (Pretty 2003). Sources of elite power depend on the cultural context and the local conditions in which the project is embedded (Carrick-Hagenbarth 2016).

The current project "Engaging Women and Men Farmers in Participatory Research and Extension" of ACIAR also wants to assess whether there was elite capture within each of three projected villages. For that reason, this study was carried out with the following objectives;

- to compare the livelihood assets of the projected and non-projected households within each of the projected villages and
- to assess the existence of elite capture within the projected villages.

Research Methodology

Data collection and data analysis

The study was conducted in three projected villages (Pho Lay Lone, Nat Kan and Aung Myay Kone), Magway Township in June 2017. The data on household livelihood were collected from 40 households (20 projected households selected by the ACIAR project with predetermined criteria and 20 non-projected households selected randomly) from each of three projected villages to assess their original human, natural, financial, social and physical capitals. The project had set up the criteria for the selection of participants. Those criteria were married couples (both husband and wife involving in farming), age group (middle age of 25- 50 years and old age of over 50 years), size of landholding (not less than 0.81 hectare) and farmer type (contact farmers and non-contact farmers).

Descriptive analysis was conducted to describe the socio-economic characteristics and livelihoods of the rural households by using Statistical Package for Social Science (SPSS) version 23 software. To describe socio-economic conditions of sample households, mean, minimum, maximum, frequency and percentage distributions were calculated as descriptive data. To compare the livelihood assets such as human, physical, financial, social and natural capital between projected and non-projected households, independent samples t-test and Pearson chi-square test were used.

Results and Discussion

1. Human Capital

1.1 Demographic characteristics of the projected

and non-projected households

The average age of projected and non-projected household heads were 54.2 and 52.3 years in Pho Lay Lone, 44.4 and 50.4 years in Nat Kan and 47.8 and 46.7 years in Aung Myay Kone villages respectively. The t-test showed that the average age was not significantly different between projected and non-projected household heads in Pho Lay Lone and Aung Myay Kone villages while the average age of the projected household heads (44.4 years) was younger than that of the non-projected household heads (50.4 years) in Nat Kan village. The average farming experiences of projected and non-projected household heads were 31 and 30.58 years in Pho Lay Lone, 23.05 and 21.53 years in Nat Kan and 23.8 and 24.85 years in Aung Myay Kone villages respectively. The average family size of projected and non-projected households were around 4 persons in three projected villages. The t-test showed that there was no significant difference in average farming experiences and average family size between projected and non-projected households within each of three projected villages. The education status showed that most of the projected household heads (35- 40%) finished primary school

level and most of the non-projected household heads finished monastery education, primary and middle school level in three projected villages. According to the Chi-square test, the education level was not significantly different between projected and non-projected household heads within each of three projected villages (Table 1).

2. Natural Capital**2.1 Farm size of the projected and non-projected households**

The average farm size of projected and non-projected households were 5.68 and 2.37 hectares in Pho Lay Lone, 4.45 and 0.99 hectares in Nat Kan and 3.51 and 3.19 hectares in Aung Myay Kone village. According to the t-test, the average farm size of the projected households was significantly higher at 1% level than that of the non-projected households in Pho Lay Lone and Nat Kan villages while there was no significant difference in average farm size between projected and non-projected households in Aung Myay Kone village (Table 2).

2.2 Cultivated cropping areas and yields of the projected and non-projected households

Sesame and groundnut were mostly culti-

Table 1. Demographic characteristics of the projected and non-projected household heads within each of the three projected villages, 2016

Items	Pho Lay Lone		Nat Kan		Aung Myay Kone	
	Project (n=20)	Non-project (n=20)	Project (n=20)	Non-project (n=20)	Project (n=20)	Non-project (n=20)
Average age (year)	54.20	52.30	44.40	50.40	47.80	46.70
t-test	0.505^{ns}		-1.820*		0.294^{ns}	
Average farming experience (year)	29.95	29.05	23.05	21.53	23.80	24.85
t-test	0.191^{ns}		0.340^{ns}		-0.244^{ns}	
Average family size (no.)	4.55	4.05	4.55	4.35	4.3	3.9
t-test	1.070^{ns}		0.422^{ns}		1.017^{ns}	
Education level (HH) (%)						
Illiterate	0	0	0	0	0	5
Monastery	20	35	0	25	10	10
Primary	35	20	35	30	45	35
Middle	15	30	30	25	25	40
High school	15	5	30	20	15	10
Graduate	15	10	5	0	5	0
Chi-square test	3.836^{ns}		6.568^{ns}		3.142^{ns}	

Note: * significant at 10% level and ns= non-significant, HH= household head

Table 2. Farm size of the projected and non-projected households within each of three projected villages, 2016

	Farm size (hectare)					
	Pho Lay Lone		Nat Kan		Aung Myay Kone	
	Project (n=20)	Non-project (n=20)	Project (n=20)	Non-project (n=20)	Project (n=20)	Non-project (n=20)
Mean	5.68	2.37	4.45	0.99	3.51	3.19
Maximum	16.19	8.10	14.17	6.07	8.10	10.12
Minimum	0.61	0	0.81	0	1.21	0.40
t-test	2.939***		4.088***		0.547^{ns}	

Note: *** significant at 1% level and ns= non-significant

Table 3. Cultivated cropping areas and yields of projected and non-projected households within each of three projected villages, 2016

Items	Pho Lay Lone		Nat Kan		Aung Myay Kone	
	Project (n=20)	Non-project (n=20)	Project (n=20)	Non-project (n=20)	Project (n=20)	Non-project (n=20)
Areas (ha)						
Sesame	4.11	1.97	4.38	1.03	3.27	3.25
t-test	3.145***		4.653***		0.039^{ns}	
Groundnut (monsoon)	0.83	0.04	0.47	0.19	0.12	0.12
t-test	2.520**		1.180^{ns}		-0.004^{ns}	
Groundnut (post-monsoon)	1.62	0.96	0.98	0.10	2.70	2.46
t-test	1.286^{ns}		2.918***		0.497^{ns}	
Yield (ton/ha)						
Sesame	0.67	0.57	0.60	0.48	0.71	0.74
t-test	1.006^{ns}		1.109^{ns}		-0.443^{ns}	
Groundnut (monsoon)	1.30	0.06	0.76	0.45	0.59	0.23
t-test	3.479***		0.693^{ns}		1.253^{ns}	
Groundnut (post-monsoon)	1.49	2.04	0.71	0.11	2.23	2.59
t-test	-0.983^{ns}		2.823***		-0.975^{ns}	

Note: ***, ** significant at 1%, 5% level and ns= non-significant

vated in three projected villages (Table 3). In Pho Lay Lone village, projected and non-projected farmers cultivated sesame on average area of 4.11 and 1.97 hectares and average yields were 0.67 and 0.57 tons/hectare. The t-test showed that average sesame cultivated area of the projected households was significantly higher at 1% level than that of the non-projected households and yield of sesame was not statistically different. Average monsoon groundnut cultivated areas were 0.83 and 0.04 hectares and average yields were 1.3 and 0.06 tons/hectare while average post-monsoon groundnut cultivated areas were 1.62 and 0.96 hectares and average yields were 1.49 and 2.04 tons/hectare. The t-test showed that the projected households cultivated significantly larger areas and got statistically higher yield for monsoon groundnut and there was no significant difference in average cultivated area and yield of post-monsoon groundnut.

In Nat Kan village, projected and non-projected farmers cultivated sesame on average areas of 4.38 and 1.03 hectares and average yields were 0.6 and 0.48 tons/hectare. The t-test showed that the projected households cultivated larger areas of sesame while yield was not different between projected and non-projected households. Average monsoon groundnut cultivated areas were 0.47 and 0.19 hectares and average yields were 0.76 and 0.45 tons/hectare while in average post-monsoon groundnut cultivated areas were 0.98 and 0.1 hectares and average yields were 0.71 and 0.11 tons/hectare. The t-test showed that there was no significant difference in average cultivated area and yield of monsoon groundnut whereas average cultivated area and yield of post-monsoon groundnut of projected households were significantly higher than those of the non-projected households.

In Aung Myay Kone village, projected and non-projected farmers cultivated sesame on average areas of 3.27 and 3.25 hectares and average yields were 0.71 and 0.74 tons/hectare. Average groundnut cultivated areas were 0.12 and 0.12 hectares and produced the average yields of 0.59 and 0.23 tons/hectare in monsoon. The average cultivated areas and yields of the projected and non-projected farmers were 2.7 and 2.46 hectares and 2.23 and 2.59 tons/hectare in post-monsoon groundnut. According to the t-test, there was no significant difference in cultivated cropping areas and yields of sesame and monsoon and post-monsoon groundnut of projected and non-projected households.

3. Financial Capital

3.1 Income of the projected and non-projected households

All sample households in three projected villages mainly depended on crop production for their main income followed by non-farm, off-farm labour, salary income and livestock production. According to the t-test, all types of average annual incomes were not significantly different between projected and non-projected households in Pho Lay Lone village. In Nat Kan village, the average annual crop income (5,153,125 Kyats) of projected households was higher than that of non-projected households (1,399,950 Kyats) while the average off-farm income (761,250 Kyats) of non-projected households was higher than that of projected households (43,250 Kyats). Livestock, salary and non-farm incomes were not significantly different between projected and non-projected households. In Aung Myay Kone village, the average off-farm income (180,500 Kyats) of non-projected households was higher than that of projected households (31,000 Kyats) although the other incomes were not significantly different (Table 4).

4. Social Capital

4.1 Participation in village organizations and developmental activities of the projected and non-projected households

In three projected villages, there were many kinds of organizations with different activities to increase the livelihood of rural people. In Pho Lay Lone village, projected households' involvement in village organizations were 10% in formal organization, 25% in informal organization and 65% did not involve in any village organization. In non-projected households, 55% involved in informal organization and 45% did not involve in any village organization. In Nat Kan village, projected households' involvement in village organizations were 40% in formal organization, 30% in informal organization and 30% did not involve in any village organization. Non-projected households' involvement in village organizations were 15% in formal organization, 35% in informal organization and 50% of non-involvement in any village organization. In Aung Myay Kone village, projected households' involvement in village organizations were 10%, 35% and 55% in formal organization, informal organization and non-involvement in any village organization. Non-projected households' involvement in village organizations were 10% in formal organization and 45% in informal organization. About 45% did not involve in any village organization.

Table 4. Incomes of the projected and non-projected households within each of three projected villages, 2016

Income (kyats/ year)	Pho Lay Lone		Nat Kan		Aung Myay Kone	
	Project (n=20)	Non-project (n=20)	Project (n=20)	Non-project (n=20)	Project (n=20)	Non-project (n=20)
Crop	4,670,000	3,330,450	5,153,125	1,399,950	5,633,200	5,448,500
t-test	1.049^{ns}		4.347^{***}		0.191^{ns}	
Livestock	18,000	9,750	419,000	90,000	118,750	90,250
t-test	0.443^{ns}		0.938^{ns}		0.345^{ns}	
Salary	829,800	764,500	72,000	99,000	150,000	208,000
t-test	0.130^{ns}		-0.221^{ns}		-0.280^{ns}	
Off-farm	136,250	483,900	43,250	761,250	31,000	180,500
t-test	-1.712^{ns}		-2.577^{**}		-1.744[*]	
Non-farm	2,053,250	1,766,500	1,621,000	1,414,750	876,000	356,250
t-test	0.256^{ns}		0.320^{ns}		0.816^{ns}	

Note: ***, **, * significant at 1%, 5%, 10% level and ns= non-significant

The Chi-square test showed that projected and non-projected households' involvement in village organizations were significantly different at 10% level in Pho Lay Lone village and there was no significant difference in Nat Kan and Aung Myay Kone villages.

In three projected villages, projected households participated in up to 7 developmental activities and non-projected households participated only in 3 developmental activities. The 55%, 60% and 20% of non-projected households did not participate in any developmental activities in Pho Lay Lone, Nat Kan and Aung Myay Kone villages respectively. According to the Chi-square test, participation in developmental activities was significantly different at 1% level between projected and non-projected households in Pho Lay Lone and Nat Kan villages while there was no significant difference in Aung Myay Kone village (Table 5).

5. Physical Capital

5.1 Housing conditions of the projected and non-projected households

In three projected villages, most of the sample households lived in the house made of roofing with corrugated iron sheet+ bamboo wall+ bamboo floor. According to the result in Table 6, the buildings made of corrugated iron sheet+ bamboo wall+ bamboo floor were built by 70% of projected and 60%

of non-projected households in Pho Lay Lone, 55% and 90% in Nat Kan and 70% and 75% in Aung Myay Kone villages respectively. The projected households 20% lived in houses made of corrugated iron sheet+ brick wall+ brick floor whereas the non-projected households 10% lived in housing built with thatch roof+ bamboo wall+ bamboo floor in Pho Lay Lone village. In Nat Kan village, 15% each of projected households possessed the houses types which were made of corrugated iron sheet+ brick wall+ brick floor, corrugated iron sheet+ brick wall+ wood floor and corrugated iron sheet+ wood wall+ wood floor. In Aung Myay Kone village, 25% of projected households and 20% of non-projected households possessed the houses made of corrugated iron sheet+ brick wall+ brick floor. There were few projected and non-projected households which possessed other types of housing in three projected villages. According to the Chi-square test, there was no significant difference in housing conditions between projected and non-projected households in Pho Lay Lone and Aung Myay Kone villages while there was significantly different in housing conditions between projected and non-projected households in Nat Kan village.

5.2 Farm assets, livestock assets and home assets of the projected and non-projected households

Table 5. Participation in village organizations and developmental activities of the projected and non-projected households within each of three projected villages, 2016

Type of participation	Households (%)					
	Pho Lay Lone		Nat Kan		Aung Myay Kone	
	Project (n=20)	Non-project (n=20)	Project (n=20)	Non-project (n=20)	Project (n=20)	Non-project (n=20)
Village organizations						
No	65	45	30	50	55	45
Formal	10	0	40	15	10	10
Informal	25	55	30	35	35	45
Chi-square test	4.977*		3.350^{ns}		0.450^{ns}	
Participation in developmental activities						
0	0	55	0	60	0	20
1	55	35	30	20	35	40
2	40	10	50	15	15	20
3	0	0	0	5	25	20
4	5	0	10	0	15	0
5	0	0	0	0	5	0
6	0	0	0	0	5	0
7	0	0	10	0	0	0
Chi-square test	16.489***		21.169***		9.321^{ns}	

Note: ***, * significant at 1%, 10% level and ns= non-significant

0= no participation in any developmental activities, 1= participation in 1 developmental activity, 2= participation in 2 developmental activities, 3= participation in 3 developmental activities, 4= participation in 4 developmental activities, 5= participation in 5 developmental activities, 6= participation in 6 developmental activities, 7= participation in 7 developmental activities

Table 6. Housing conditions of the projected and non-projected households within each of three projected villages, 2016

Items	Households (%)					
	Pho Lay Lone		Nat Kan		Aung Myay Kone	
	Project (n=20)	Non-project (n=20)	Project (n=20)	Non-project (n=20)	Project (n=20)	Non-project (n=20)
CIS+ BKW+ BKF	20	5	15	0	25	20
CIS+ BKW+ WF	5	10	15	5	5	0
CIS+ WW+ WF	0	5	15	0	0	5
CIS+ BW+ BF	70	60	55	90	70	75
CIS+ BKW+ SF	5	5	0	5	0	0
CIS+ BW+ SF	0	5	0	0	0	0
TR+ BW+ BF	0	10	0	0	0	0
Total	100	100	100	100	100	100
Chi-square test	6.487^{ns}		9.690*		2.146^{ns}	

Note: * significant at 10% level and ns= non-significant

CIS+ BKW+ BKF= Corrugated iron sheet+ Brick wall+ Brick floor, CIS+ BKW+ WF= Corrugated iron sheet+ Brick wall+ Wood floor, CIS+ WW+ WF= Corrugated iron sheet+ Wood wall + Wood floor, CIS+ BW+ BF= Corrugated iron sheet+ Bamboo wall+ Bamboo floor, CIS+ BKW+ SF= Corrugated iron sheet+ Brick wall+ Soil floor, CIS+ BW+ SF= Corrugated iron sheet+ Bamboo wall+ Soil floor, TR+ BW+ BF= Thatch roof+ Bamboo wall+ Bamboo floor

Households' farm assets such as plough, harrow, tractor, sprayer, bullock cart and cutting machine are shown in Table 7. According to the t-test, in Pho Lay Lone village, there was significantly different in harrow possession and the average number of harrow 2.95 and 1.7 were possessed by projected and non-projected households. However, there was no significant difference in average number of plough, tractor, sprayer, bullock cart and cutting machine within this village. The t-test showed that plough, harrow, bullock cart and cutting machine possession were significantly different between projected and non-projected households in Nat Kan village. In Aung Myay Kone village, t-test result showed that there was no significant difference in any farm assets possession between projected and non-projected households within this village.

Table 8 shows the households' possession of livestock assets such as cattle, chicken and pig. The t-test showed that the average number of chicken 2.2 and 6.95 possessed by projected and non-projected households in Pho Lay Lone and 7.75 and 3.2 in Aung Myay Kone villages were significantly different. In Nat Kan village, the t-test showed that projected and non-projected households' possession

of the average number of cattle 2.4 and 0.95 were significantly different at 5% level. Cattle possession of the projected and non-projected households in Pho Lay Lone and Aung Myay Kone villages as well as chicken and pig possession of projected and non-projected households in Nat Kan village were not statistically different.

The possession of home assets such as motorcar, motorbike, bicycle, television, telephone, radio, solar plate, battery, fan, EVD, sky net and sewing machine are shown in Table 9. According to the t-test, the average number of solar plate (0.75 and 1) respectively were significantly different between projected and non-projected households in Pho Lay Lone village. In Nat Kan village, the average possessed number of solar plate (0.55 and 0.25), battery (0.6 and 0.3) and fan (0.25 and 0) respectively were significantly different between projected and non-projected households. In Aung Myay Kone village, the average possessed number of battery (1.05 and 0.8) respectively were significantly different between projected and non-projected households. Other home assets of projected and non-projected households in three projected villages were not significantly different.

Table 7. Farm assets of the projected and non-projected households within each of three projected villages, 2016

Items	Number					
	Pho Lay Lone		Nat Kan		Aung Myay Kone	
	Project (n=20)	Non-project (n=20)	Project (n=20)	Non-project (n=20)	Project (n=20)	Non-project (n=20)
Plough	1.55	0.95	1.10	0.35	1.55	1.95
t-test	1.463^{ns}		2.848^{***}		-0.862^{ns}	
Harrow	2.95	1.7	3.45	0.85	3.15	2.95
t-test	2.066^{**}		3.518^{***}		0.449^{ns}	
Tractor	0.05	0	0.10	0	0.05	0
t-test	1^{ns}		1.453^{ns}		1^{ns}	
Sprayer	0.25	0.30	1.05	0.45	0.85	0.60
t-test	-0.346^{ns}		1.399^{ns}		1^{ns}	
Bullock cart	0.80	0.75	1.40	0.35	1.20	1.00
t-test	0.224^{ns}		2.975^{***}		0.940^{ns}	
Cutting machine	-	-	0.20	0	0	0.05
t-test			2.179^{**}		-1^{ns}	

Note: ***, ** significant at 1%, 5% level and ns= non-significant

Table 8. Livestock assets of the projected and non-projected households within each of three projected villages, 2016

Items	Number					
	Pho Lay Lone		Nat Kan		Aung Myay Kone	
	Project (n=20)	Non-project (n=20)	Project (n=20)	Non-project (n=20)	Project (n=20)	Non-project (n=20)
Cattle	3.15	2.25	2.40	0.95	4.05	3.35
t-test	1.182^{ns}		2.169**		1.131^{ns}	
Chicken	2.20	6.95	153.75	3.45	7.75	3.20
t-test	-1.809*		1.003^{ns}		1.748*	
Pig	-	-	0.50	0.55	-	-
t-test	-0.108^{ns}					

Note: **, * significant at 5%, 10% level and ns= non-significant

Table 9. Home assets of the projected and non-projected households within each of three projected villages, 2016

Items	Number					
	Pho Lay Lone		Nat Kan		Aung Myay Kone	
	Project (n=20)	Non-project (n=20)	Project (n=20)	Non-project (n=20)	Project (n=20)	Non-project (n=20)
Motorcar	-	-	0.10	0	-	-
t-test	1.453^{ns}					
Motorbike	0.80	0.70	1.35	1.00	0.70	0.85
t-test	0.577^{ns}		1.505^{ns}		-0.989^{ns}	
Bicycle	0.30	0.20	0.20	0.05	0.20	0.05
t-test	0.717^{ns}		1.179^{ns}		1.179^{ns}	
TV	0.45	0.25	0.90	0.65	0.25	0.30
t-test	1.094^{ns}		1.687^{ns}		-0.346^{ns}	
Telephone	1.60	1.40	1.95	1.55	1.35	1.10
t-test	0.554^{ns}		1.177^{ns}		0.808^{ns}	
Radio	0.45	0.65	0.60	0.35	0.50	0.55
t-test	-1.061^{ns}		1.334^{ns}		-0.309^{ns}	
Solar plate	0.75	1.00	0.55	0.25	0.85	0.85
t-test	-2.032*		1.788*		0	
Battery	0.85	1.00	0.60	0.30	1.05	0.8
t-test	-1.371^{ns}		1.763*		1.965*	
Fan	0.15	0.15	0.25	0	-	-
t-test	0		2.517**			
EVD	0.15	0.10	0.60	0.40	0.10	0.15
t-test	0.467^{ns}		1.258^{ns}		-0.387^{ns}	
Sky net	0.10	0.05	0.05	0	0	0.05
t-test	0.588^{ns}		1^{ns}		-1^{ns}	
Sewing machine	0.15	0	0.10	0.05	0.10	0
t-test	1.371^{ns}		0.588^{ns}		1.453^{ns}	

Note: **, * significant at 5%, 10% level and ns= non-significant

Conclusion

According to the results, in Pho Lay Lone village, the statuses of natural, social and physical capitals of projected households were higher than those of non-projected households. In Nat Kan village, the statuses of natural, financial, social and physical capitals of projected households were superior to those of non-projected households. It indicated that the project have chosen the households which livelihood assets were higher than those of the remaining households and elite capture could be occurred in the selection of projected households in Pho Lay Lone and Nat Kan villages. In Aung Myay Kone village, most livelihood assets under human, natural, financial, social and physical capitals were not significantly different between projected and non-projected households. It can be assumed that elite could not capture the project in Aung Myay Kone village. It indicated that smallholders had little chance to get the benefits of the project in Pho Lay Lone and Nat Kan villages while the benefit of the project could cover the whole community in Aung Myay Kone village. Therefore, it can be suggested that there should be a proper analysis on the livelihoods of farm households in the target areas before choosing the projected participants to prevent the elite capture.

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