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## The roles of capital in the management of rubber smallholders' cooperatives: experiences from southern Thailand

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The aim of this paper was to evaluate impacts of capital on performances of the rubber smallholder's co-operatives, RSCoop, in southern Thailand. The research conducted during May 2010 to April 2012 with two purposive sampling cases, RSCoops A and B. Methods employed were investigation of data from related documents, participatory observations and key informants in-depth interviews. RSCoops A and B were established in 1994 and 1996, respectively. On March 31<sup>st</sup> 2012, they had 83 and 170 members with 11,978.75 and 179,525.31 USD of share capital. Their financial statements in the seven year period (2006-2012) showed that though RSCoop B had significantly more members and share capital than RSCoop A, the profitability and management ratios were not bigger. It seemed like RSCoop A had better business performances. However, it was found that RSCoop B had more opportunity to grow due to its higher amount of resources owned.

**Keywords:** rubber-smallholder's cooperative, share capital.

### Introduction

Natural rubber from *Hevea brasiliensis* is very important for the Thai economy. In 2011, there were 3,001,797 hectares of plantation areas all over the country with 11,978.71 million USD in exports value (Rubber Research Institute of Thailand, 2012). In 2009, 1.48 million households were growing rubber (Office of Agricultural Economics, 2010) and 90% of these households were smallholders who cultivate less than 8 hectares of plantation (Buncha Somboonsuke *et al.*, 2004).

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Rubber-smallholder's co-operatives (RSCoop) are rubber-farmer-owned co-operatives. They were first established in 1994 due to the critical price of natural rubber during 1992 to 1993. At that crucial period, the Thai Government allocated a large amount of budget for construction of fumed-and-smoked-rubber factories. Along with these, the rubber-smallholders were registered as community-based RSCoops in order to manage the factories. This was meant to help rubber smallholders raising their income, improving quality of their rubber products and increasing their bargaining powers. Since 1994, approximately 695 RSCoops have been established all over the country. But at the end of 2011, only 449 RSCoops with 77,041 members and 38.1 million USD total share capital remained active. The failed RSCoops faced many problems, the most important of which was lack of capital. (Office of the Rubber Replanting Aid Fund, 2009; Poonsak Intarayota and Pakdee Buncharoen, 2007).

Agricultural cooperatives require capital to be successful as for any business. Funds are needed to pay for operating costs, to purchase equipment and for expansion. Cooperatives that do not adapt and that fail to mobilise more member capital will be increasingly unable to compete with other more efficient types of business. Currently, there are a number of changes in global economic conditions that confront and challenge the viability of agricultural cooperatives in the developed and developing world (Pischke and Rouse, 2004). These include:

- decreasing flows of development assistance either government departments or international organisations;
- privatisation of state agencies and businesses e.g. state-owned marketing boards and banks, which are usually interested in dealing with cooperatives only as business enterprises;
- globalisation of trade and deregulation of domestic markets which are promoting freer trade domestically and internationally and consequently consumers often obtain cheaper goods from more efficient private providers;
- industrialisation and vertical integration of agricultural product and food systems which are trended toward larger and larger agro-industrial and retail food chains with reduced costs at all stages between farmers and consumers.

Lacking capital not only leads to insufficient liquidity but also makes the cooperatives unable to cope with the changing environment. In order to use cooperatives as a tool for improving farmer's quality of life, RSCoops need to prepare themselves to deal successfully with those situations. Enough capital is a key factor for it.

This paper will evaluate and compare impacts from different-sized capitals on performances of RSCoops in southern Thailand while ways to build up capital will be suggested.

## Materials and methods

This research was conducted during May 2010 to April 2012. Two RSCoops in southern Thailand were selected as the case study using purposive sampling technique.

The profitability and management ratios were analysed using data from the cooperative's financial statements usually issued at the end of March every year. Data for the last seven years (2006-2012) were used. The analysed profitability measures were;

- (1) gross margin to sales ratio (Prapan Sawaittan, 1995)

$$= \frac{100}{sales} \times gross\ margin,$$

- (2) net profit margin ratio (Thongchai Santiwong and Chaiyot Santiwong, 1998)

$$= \frac{100}{sales} \times net\ profit,$$

- (3) return on equity ratio (Thongchai Santiwong and Chaiyot Santiwong, 1998)

$$= \frac{100}{equity} \times net\ profit,$$

- (4) return on assets ratio (Thongchai Santiwong and Chaiyot Santiwong, 1998)

$$= \frac{100}{assets} \times net\ profit,$$

- (5) reserve capital to sales ratio (Mellor *et al.*, 2009)

$$= \frac{100}{sales} \times reserve\ capital,$$

- (6) dividend ratio

$$= \frac{total\ dividend}{no.\ of\ share},$$

- (7) patronage refund ratio

$$= \frac{100}{patronage\ refund} \times net\ profit,$$

- (8) other social funds allocated from net profit each year e.g.

- amount of public fund
- amount of educational fund
- member welfare fund to no. of member ratio.

T-tests were used to compare the differences of means of each measure. Other impact aspects were analysed using data from participatory observations and key informant in-depth interviews.

## **Results and discussions**

### ***General information of the case study***

RSCoop A and RSCoop B are both located in the same sub-district, but different villages, in a Southernmost province of Thailand (Figure 1). They were established in 1994 and 1996 with only 50 and 38 members, respectively. RSCoop is a village-based cooperative. Thus, its regulation on membership states that its members have to be the villagers of where the factory is located or someone who lives elsewhere but owns a rubber-plantation in that village. In 2002, there were 208 and 333 households in the villages where RSCoop A and RSCoop B are situated.

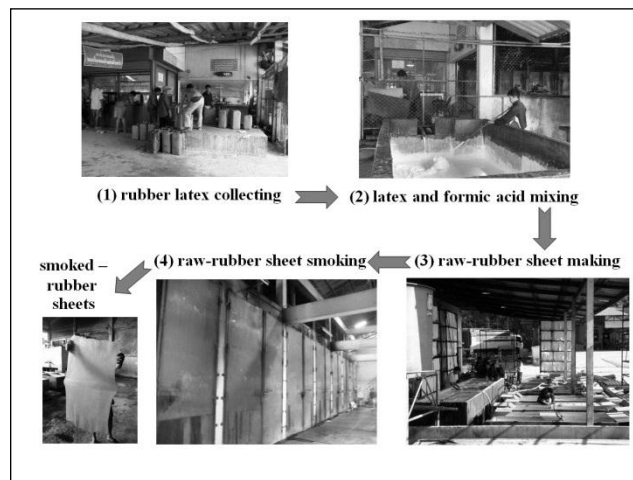
Each RSCoop owns a fumed-and-smoked-rubber factory which was funded by the Thai Government. The construction cost for one factory was about US\$93,750. Before approving the allocation, a land for the factory location had to be prepared. RSCoop A has borrowed land from two members and the members have been annually paid for the land use. RSCoop B used to borrow a plot of land from its member. But experience of other RSCoops had revealed conflict between landlords and cooperatives and made its board of committee (BOC) to decide to buy that land. At present, RSCoop B has ownership of that land.

### ***Businesses of the RSCoops***

There are two main businesses of both RSCoops. They are: Collecting rubber latex from their members to produce smoked-rubber sheets. In the process of production, latex will be made into raw-rubber sheets before being put in the rooms to be dried and smoked (Figure 2), Selling goods including fertilisers and raw rice for their members. Both RSCoops do this business but in quite small transactions.



**Fig.1.** Locations of the RSCoop case studies  
Source:[http://www.embassyworld.com/maps/Maps\\_Of\\_Thailand/](http://www.embassyworld.com/maps/Maps_Of_Thailand/)



**Fig. 2.** Production process of smoked-rubber sheets

### *Financial performance impacts*

### *Membership and share capital*

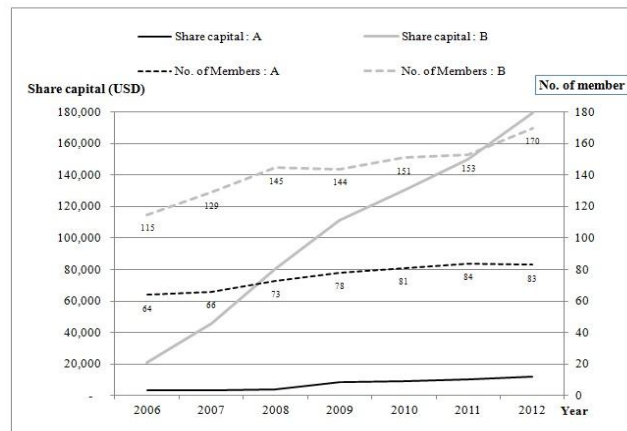
Data on share capital and the number of members of the case study during 2006 to 2012 are shown in Figure 3. The numbers of members of RSCoop A and B, who are regular members, have increased from 64 to 83 and from 115 to 170, and the rates of increase are 29.69 and 47.83 percent, respectively. While the share capitals of both RSCoops have increased from 3,372 USD to 11,979 USD and 20,884 USD to 179,525 USD, the rates of increase are 255.25 and 459.64 percent, respectively. It can be seen that both RSCoops have been

growing in both membership and share capital. The values of each share of both RSCoops are equal, which is 0.3125 USD. When comparing the means of the share capital and number of member ratios, it was found that they were significantly different. Each member of RSCoop B held higher a larger number of shares than that of a member of RSCoop A (Table 1). At the same time, RSCoop B can attract more members than RSCoop A as the ratio of the number of member per total households of each village were 40 and 51 percent, respectively.

**Table 1.** Share capital and no. of member ratios of RSCoop case studies

Year	RSCoop A	RSCoop B
2006	52.69	181.60
2007	53.65	356.15
2008	54.75	554.55
2009	107.98	772.53
2010	108.85	865.38
2011	119.38	982.44
2012	144.32	1,056.03

t-test for equality of means = 1.426, Sig. at 0.05



**Fig. 3.** No. of members and values of share capital of RSCoop case studies during 2006 to 2012

### *Way to build up share capital*

The two RSCoops have different ways for building-up the share capital. RSCoop A collects share capital once a year, at the period around the end of each accounting year while RSCoop B always deducts 1% of latex value and then adds into the share capital account of each member. The deduction will be

made every time members sell latex to the cooperative. RSCoop B has set this as a rule for several years as it found that most people prefer to pay often but in a small amount rather than paying once a year but in a huge amount.

### ***Profitability and management ratios***

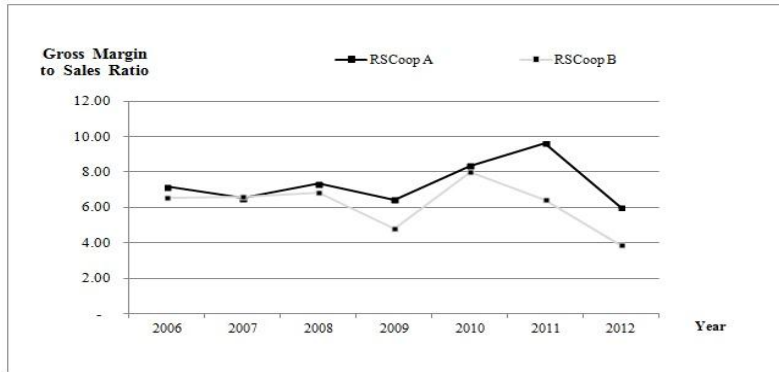
The analysis of financial data in the past seven years (2006-2012) in terms of profitability and other management results that affected the success of the cooperatives and the benefits for members and community are shown in Figure 4–13 and Table 2. Ten measured ratios were calculated and the means between the two RSCoop cases were compared. All the measured ratio values show that both RSCoops have good businesses performances. These could lead to the success as all the ratio values were high. But when comparing the means of all the measures between the two, it was found that the gross margin to sales ratio, reserve capital to sales ratio, dividend to number of share ratio, patronage refund to net profit ratio, the amount of public fund allocated per year and the amount of educational fund allocated per year, were not significantly different. The ratios with significant differences in the means were the net profit margin ratio (A > B, Sig. at 0.01), return on equity ratio (A > B, Sig. at 0.05), return on assets ratio (A > B, Sig. at 0.05) and member welfare fund to no. of member ratio (A>B, Sig. at 0.01). It can be seen that, the bigger capital a cooperative has does not mean the higher profitability it will get. The reason behind this was the higher administrative costs of RSCoop B especially on more equipment and personnel. But, it is assumed that when its business grows bigger, the percentage of the costs and total business will be reduced and profitability will increase.

**Table 2.** Profitability and management ratios

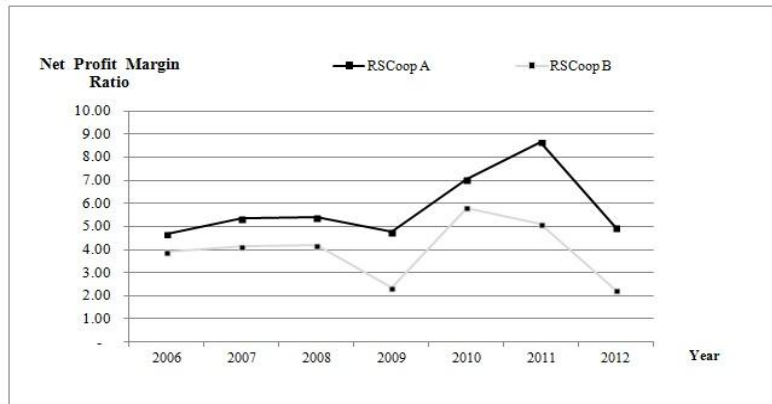
Ratio	RSCoop A	RSCoop B	t
	x	x	
Gross margin to sales ratio	7.35	6.14	1.72
Net profit margin ratio	5.85	3.96	2.52*
Return on equity ratio	56.01	37.16	3.56**
Return on assets ratio	52.86	31.27	3.73**
Reserve capital to sales ratio	2.85	2.25	2.14
Dividend to no. of share ratio	0.68	0.81	0.30
Patronage refund to net profit ratio	57.96	56.82	0.30
Amount of public fund allocated a year (USD)	1,016.50	1,074.15	-0.21
Amount of educational fund allocated a year (USD)	1,097.59	1,464.22	-0.48
Member welfare fund to no. of member ratio	882.86	551.76	2.81*

\* Sig. at 0.01

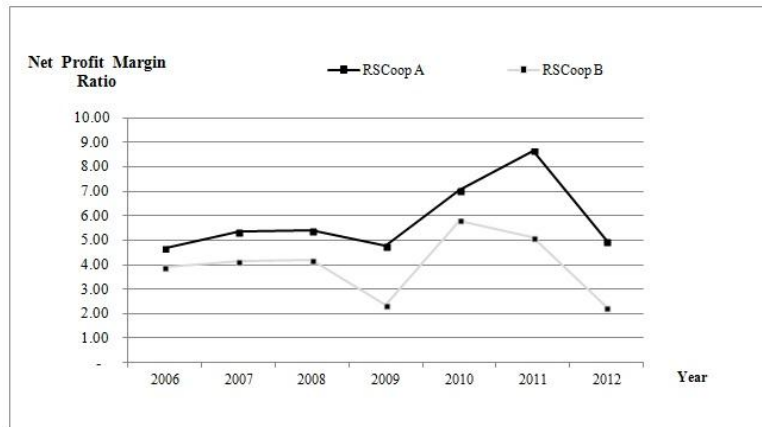
\*\* Sig. at 0.05



**Fig. 4.** Gross margin to sales ratio



**Fig. 5.** Net profit margin ratio



**Fig. 6.** Return on equity ratio



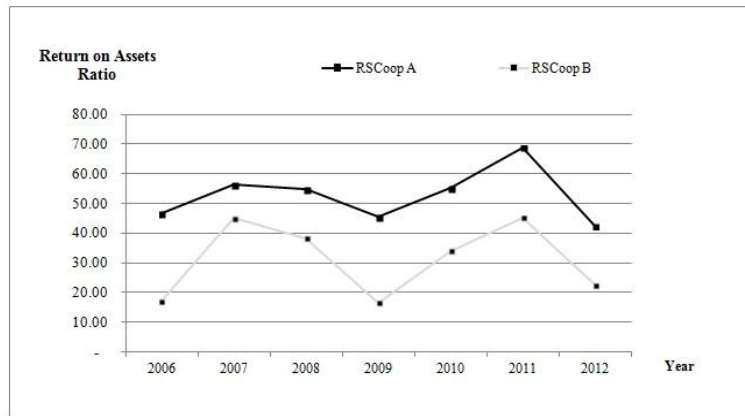


Fig. 7. Return on assets ratio

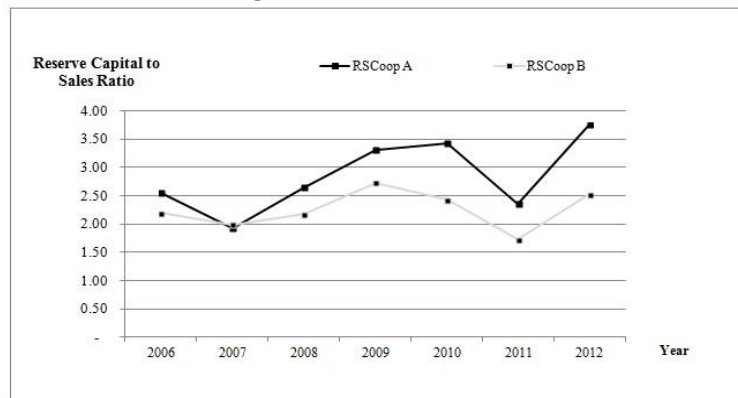


Fig. 8. Reserve capital to sales ratio

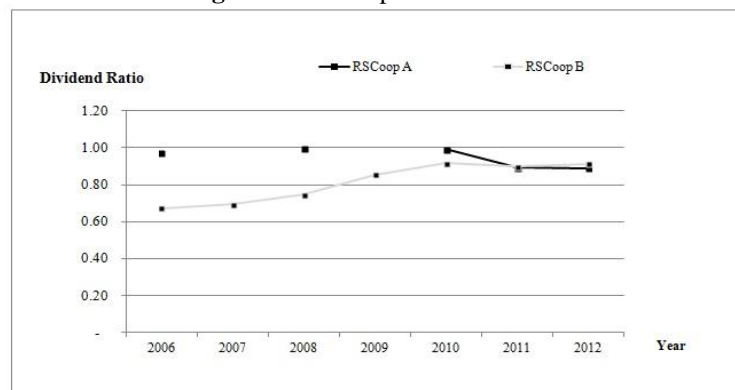
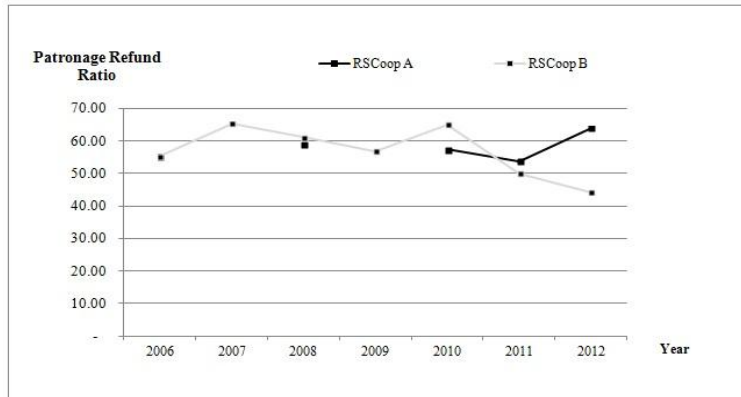
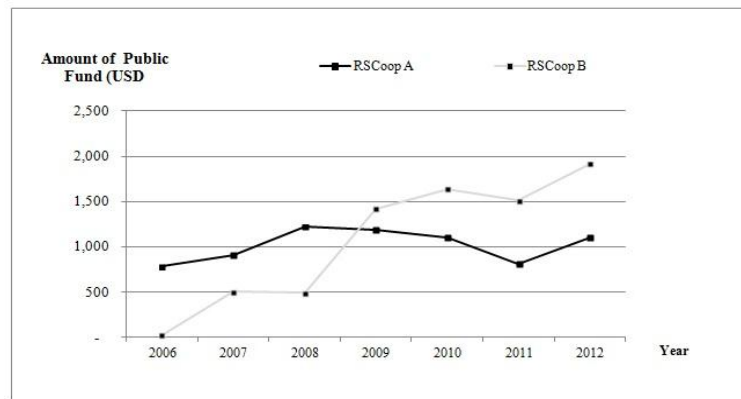


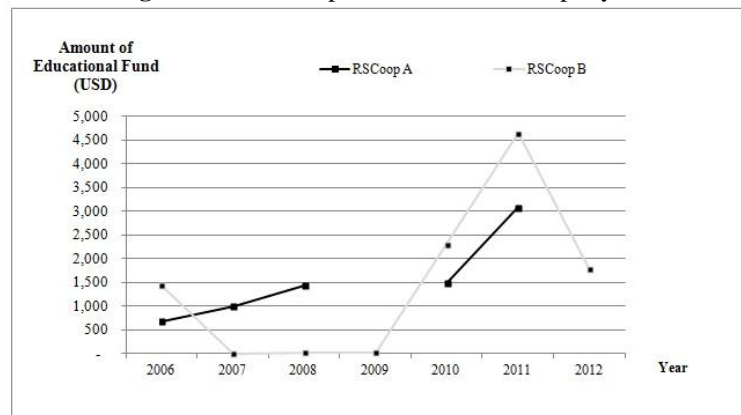
Fig. 9. Dividend to number of share ratio



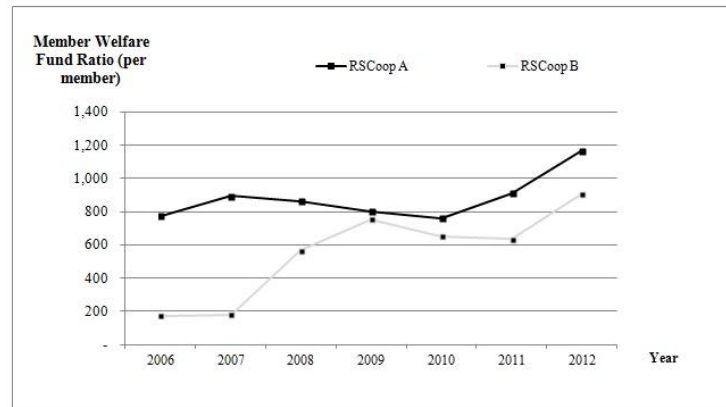
**Fig. 10.** Patronage refund to net profit ratio



**Fig. 11.** Amount of public fund allocated per year



**Fig. 12.** Amount of educational fund allocated per year



**Fig. 13.** Member welfare fund to number of members ratio

### *Other management performance impacts*

The research results showed that even though RSCoop B had larger capital than RSCoop A, it did not make higher profitability. Nevertheless, other management impacts could be found as follow:

As higher capital can build higher reliability to creditors (United States Department of Agriculture, 2007), money was lent to RSCoop B by a teacher cooperative to buy the land which its factory is located on. Consequently, RSCoop B has had its own land since 1998 while RSCoop A still uses the land lent by two of its members and the cooperative still has to pay them for the use of land every year. Data from interviewing some key informants revealed that the landlords have negotiated with the BOC several times to increase the amount of rent which is quite a bigger amount than what they have normally received. There were experiences of other RSCoops in Thailand which had to stop the business because the landlords did not allow access to their land though the RSCoops factories were located on it (Kriangsak, 2011). To avoid such conflict, RSCoop A should consider a better solution to the problem of its land ownership.

RSCoop B has higher technology for production and management e.g. fuel-saving ovens for rubber-sheet smoking, digital weighing machines which make it more convenient for operation and provide them with more trust from latex sellers, and computer equipment for accounting system which can make daily reports for its member.

RSCoop B has created jobs for the villagers as at least four people have been hired permanently in the cooperative office while RSCoop A hires only one permanent staff.

Higher capital can generate bigger business and lower prices of goods. In this case, RSCoop B can order raw rice directly from a rice cooperative in north-eastern Thailand. One six-wheel-truck load of raw rice is usually made to one order. Thus, it can sell lower-price rice to its members than RSCoop A who orders smaller amounts from a wholesaler in the district-town. RSCoop B has planned to acquire more equipment and machines to improve and expand its production capacity e.g. automatic rubber sheet producing machines and a ten-wheel truck. RSCoop B's BOC has more time and flexibility for the management tasks, especially in decision-making and planning, as they do not have to work routinely in the factory because of they have permanent staffs to do it while RSCoop A's BOC does not. RSCoop A has only one staff, so the BOC also has to work in the factory but do only some tasks e.g. record latex weights of each member and deliver rubber products to the buyers.

It can be concluded from all the results that both RSCoops have been succeeded in making profit. However, this good performance still has to be further improved. Financial management is a key to operating cooperatives, as it involves managing assets such as cash, accounts receivable, inventories, fixed assets, and investments in other organisations. Sufficient number of members or equity capital and sound financial position must be maintained to continue to be acceptable to creditors, suppliers, or buyers of cooperative products (United States Department of Agriculture, 2007).

The bigger capital of RSCoop B had not made higher monetary profitability than RSCoop A but RSCoop B has more capability and opportunity to grow due to their higher assets, human resources and membership. As Chesnick (2000) stated that goals of cooperatives are different from a company, the objective of a company is maximizing the value of the owner's interests in the firm while cooperatives have goals other than generating direct profits for their members. Thus, in the cooperative environment, the interdependence giving rise to the theory of profit maximisation generally would not hold true. Benefits of ownership are not gained from the appreciation of the cooperative stock value, but from assured access to competitively priced supplies, assured product market through the cooperative, or simply access to goods and services not available elsewhere. Furthermore, the greater the amount of capital held by the cooperative, the greater its ability to purchase more efficient technology, invest in staff training and education, and make other improvements in its business (Pischke and Rouse, 2004).

In conclusion, developing business of the cooperative to be strong enough for coping with the changing environment is vital. For cooperatives as a whole,

growth is a prime indicator of success. However, for the individual cooperative, growth can be used to reduce the burden of fixed administrative costs, but once administrative costs as a percentage of total business have stopped declining, then further growth may not be an important objective (Mellor *et al.*, 2009). Though the research results showed that the bigger capital of RSCoop B had not made higher profitability than RSCoop A, the greater amount of capital can raise its ability to make improvements in business, management and social aspects. So, it is more capital is required. The method which RSCoop B has been using for building up its share capital is suggested to be applied by other RSCoops.

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