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ASSESSMENT ON PERFORMANCE OF PARTNERSHIP EXTENSION MODELS IMPLEMENTED IN TEA SMALLHOLDING SECTOR IN SRI LANKA

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ABSTRACT

Tea smallholding sector provides the highest contribution to Sri Lankan tea industry. In recent years the productivity of tea smallholdings has shown a declining trend. This could mainly be attributed to limitations of providing an optimum extension service. The Public-Private Partnership (PPP) extension models have been introduced during the last decade as an alternative to a part of the tea smallholdings sector. This study was carried out to assess the performance of three such well-established partnership extension models and to identify the factors affecting their success. Three partnership extension models representing a factory-based model (FBM), an input supplier-based model (ISBM) and, a development agency-based model (DABM) were selected for the study. Six key components of a successful partnership i.e. trust and cohesiveness, motivation to participate, resource sharing, support to achieve long-term expectations, sharing technical information and, satisfaction about the model were used to assess the success of PPP. The primary data was collected using pretested questionnaire schedule followed by key informant interviews with randomly selected 90 smallholders (30 from each model) and with extension partners from each model. The findings revealed that productivity of tea smallholder lands in FBM is the highest when compared to that of other two models. This could be attributed to the more frequent contacts with smallholders and better provision of other services. Some success factors of the models viz. trust and cohesiveness, resource sharing, technical information sharing and motivation to work showed a significant relationship with age, experience, tea land extent and productivity ($p<0.05$). Development agency model was highly rated by poorer tea smallholders, while those having higher land extent highly rated the other PPP models. Partnership models should serve equally to all tea smallholders and therefore, it could be recommended that partners of PPP

extension model should further promote trust and cohesiveness, sharing of technical information and resources to establish successful partnerships.

Keywords: *Public-Private Partnership extension, Partnership components, Tea smallholders.*

INTRODUCTION

Tea is one of the most important agricultural commodities in Sri Lanka, which provides employment to nearly two million people. Total tea production of the country in 2017 was 307.08 Million kg, of which 288.98 Million kg (94% of Production) was exported, earning Rs. billion 233.3 (Central Bank, 2017). The total tea production by the tea smallholders in 2017 was 231.96 Million kg, which was 76% of the total production (Sri Lanka Tea Board, 2017). Even though the smallholding sector is the dominant and most important sector, the average productivity is around 1991 kg/ha/year (TSHDA Annual Report, 2017), which is far below its potential of over 3000 kg/ ha/year (TRI, 2002). The technology dissemination in the tea smallholdings sector is in the hands of public and private parties operating through various channels. However, the public extension system in the tea sector is not expanding at the required rate to meet the increasing demand mainly due to financial constraints and inadequate manpower availability. The field extension officer to farmer ratio is nearly 1:2700 when it is believed that it should be 1:1000. This shows the need for expansion of the TSHDA staff strength as well as the need for more collaborative and partnership approaches to better serve the tea smallholders. The extension arms of private organizations such as agro-input and service agencies often operating through bought leaf factories provide information that promotes increased use of their products (Amarathunga, Wanigasundera and Wijerathne, 2017). These private sector channels recover their costs through the margin on the product they are either selling or buying. They do not make any direct charge for the extension services provided. Most grassroot level field staff of the private channels are not technically competent to serve as extension workers (Amarathunga, 2015). However, involving other organizations in the tea sector to disseminate information help to increase the coverage and effectiveness of extension public sector (Obesekara, 2009). The emerging partnership extension services between public and private sectors could be the effective and efficient solution to provide good extension service. Evaluation of the such PPP models will help to identify the present situation of their collaboration, strengths, and limitations (Krell et al, 2016). Hence, this study was carried out to assess the performance of three such partnership extension models and to identify factors affecting the success.

General objective

To assess the strengths and the weaknesses of different partnership extension models implemented in Low country tea small holding sector.

Specific objectives

- To identify the partnership extension models implemented in tea smallholding sector.

- To assess the influence of the factors affecting the success or failure of the partnership extension models implemented.
- To recommend improvements to partnership extension services operating in the low country tea smallholding sector.

MATERIALS AND METHODS

Public-Private Partnerships Model

Public-private partnerships are defined as any collaborative effort between the public and private sectors in which each sector contributes to the planning, resources, and activities needed to accomplish a mutual objective (Spielman & Grebmer, 2004). Partnership provides opportunities for all partners to learn new competencies. The process of building a public-private partnership consists of five phases (Hartwich et al., 2008). They are identifying common interest, negotiating the partnership, implement the partnership, evaluation of partnership and deciding to continue or close the partnership.The main design of the organization should include representation, decision making, work organization, information exchange and communication among partners, monitoring and evaluation and administration for financial resources. Based on Hartwich's model, PPP concept to technology dissemination process of tea smallholdings sector was proposed by Amarathunga (2015). This study was conducted with the conceptual framework given in Figure 1.

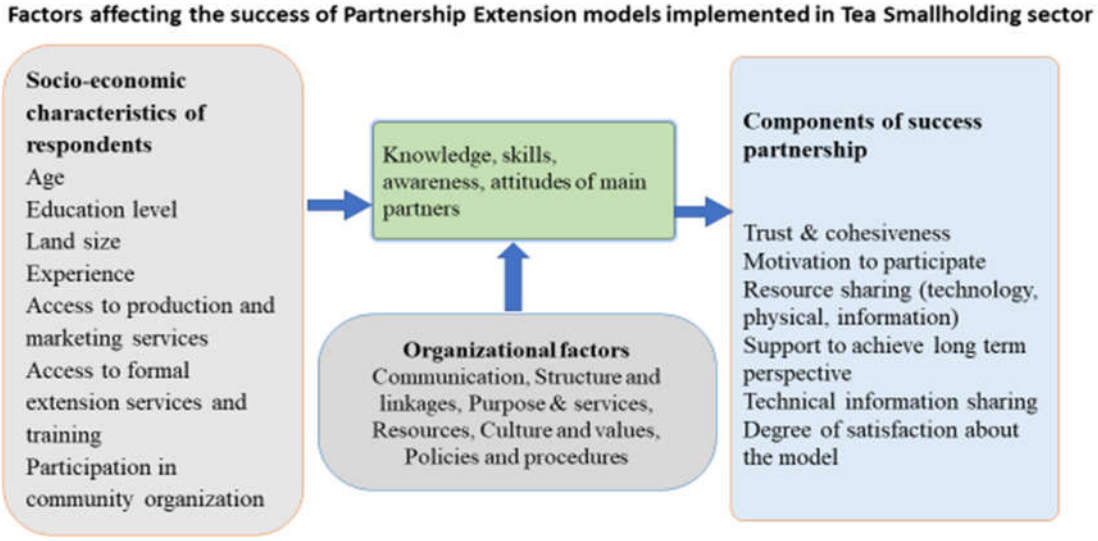

Figure 1. The conceptual framework for the study

Three different leading partnership extension models such as **Tea factory-based partnership extension model** (Public Private partnerships -3Ps orginated from the Tea Smallholder Factories PLC., has field extension service for improving

productivity and thereby tea smallholder's livelihood development), **Input supplier-based partnership extension model** (Public Private partnerships -3Ps oriented from the CIC Agribusiness which is a diversified subsidiary that is involved in promoting the use of high-quality agricultural inputs and services) and **Development agency-based partnership extension model** (Public, Private and Producer Partnership -4Ps model oriented from the International Fund for Agricultural Development-IFAD conducting smallholder agri-business project in order to provide better services of funancial and input to tea smallholders) were selected for the study. The primary data on social status of smallholders and other partners (Age, Gender, Education, Experience, No of householdds, involvement in tea cultivation on full or parttime basis, position of society/CBO) extent, yield and other field information, and extension activities done by tea related organizations, frequency of participation, was collected using pretested questionnaire schedule followed by key informant interviews with randomly selected 90 smallholders (30 from each model) and extension partners from each model. The questionnaires was subjected to the Cronbach alpha reliability test and the reliability coefficient was above 0.7.The questionnaires were also tested for validity by an expert panel. Six key components of a successful partnership i.e. trust and cohesiveness, motivation to participate, resource sharing, support to achieve long-term expectations, sharing technical information and, satisfaction about the model were used to assess the success of PPP. Secondary data was obtained from various sources such as the TRI, TSHDA, SLTB, Central Bank Reports, Reports of Census and Statistics and tea smallholders record books and records of tea factories and smallholding societies. Data collected from the tea small holders and other partners were coded. Constructs in some variables were made with weightages according Saravanan and Veerabhadraiah, (2003) and Amarathunga (2015). Mean values of the dependent variables were used to compare the partnership models as explained by Amarathunga, Wanigasundara and Wijerathna (2017). One-way ANOVA and Post hoc Bonferroni tests were used to compare the dependent variables of tea smallholders and Kruskal-Wallis test was used to compare the dependent variables of other partners. Correlation analysis was also used to test the relationship between socio-economic factors (age, education level, experience, tea land extent and productivity) and dependent variables of respondents. Data analysis was done using the SPSS Software.

RESULTS AND DISCUSSION

The main objective of the research was to assess the strengths and weaknesses of different partnership extension models implemented in the Low country tea smallholding sector. Tea smallholders interviewed, 87 are male respondents and 03 are female.

Comparison of components of success partnership models

Constructs used for measurement of those components were weighted by an expert panel according to importance to measure the components. As a result of conducting more frequent collaborative extension activities, TSHDA officials have

more opportunities to meet their tea smallholders in FBM and ISBM models (Table 1). Therefore, level of trust and cohesiveness between TSHDA and tea smallholders is significantly higher in the factory-based model (FBM) and input supplier-based model (ISBM) than development agency-based model (DABM) (p=0.001). DABM has conducted Smallholder Agri-business Project (SAP) by coordinating between regional staff of TSHDA and other partners of the model. Therefore, it was observed that there is a high level of trust and cohesiveness between TSHDA officials and smallholders and also between other partners and smallholders. However, these interactions are not significant compared with same components studied in relevant groups of other two partnerships models. Level of motivation among TSHDA and leading partner to participate in the model is significantly higher in ISBM than other two partnership models (p=0.001).

Table 1 Mean level of components of success according to tea smallholders

Components of success	Partnership[1]	FBM	ISBM	DABM
Trust and cohesiveness among the partners	A	27.39**	27.34**	18.34
	B	21.0**	26.79**	10.41
	C	27.39**	27.34**	18.34
Level of the motivation of partners to participate in the model	A	21.24**	25.04**	14.64
	B	16.88*	22.08**	8.96
	C	28.64**	21.96	20.24
Level of resource sharing among the partners	A	17.1*	20.65**	12.1
	B	13.85*	18.7**	7.25
	C	23.85**	17.45	16.35
Level of model support to achieve long term perspective		12.79*	11.37	10.04
Level of technical information sharing in the model		24.36**	20.42**	16.38
Level of satisfaction about the partnership model		27.68**	23.53*	19.29

***Significant at 0.01 *Significant at 0.05,[1] A - Partnership b/w TSHDA & Tea smallholders, B - Partnership b/w TSHDA & Leading partner, C - Partnership b/w Leading partner & Tea smallholders*

Leading partner in ISBM provide sponsors for extension programs and they are conducting more frequent collaborative extension activities. As result of frequent contacts of smallholders by the other factory base extension coordinators for the purpose of continuation of green leaf supply chain in sustainable manner, the level of motivation among leading partner and tea smallholders to participate in the model is significantly higher in the FBM than other two partnership models (p=0.001).Level of resource sharing among TSHDA and tea smallholder is significantly higher in the FBM than the DABM (p=0.04). FBM coordinates to get land development subsidies for tea smallholders from TSHDA. The factory extension team facilitates financial support to smallholders in order to improve land productivity in short term as well as long term, also conduct Extension programs frequently and provide inputs such as fertilizer, agro equipment, nursery plants, etc. Additionally, they have conducted community and social relationship program, such as heath camp, welfare society, annual bonuses scheme, for their

smallholders and family members attached to each factory supply base. As a result of leading partner provide sponsorships for TSHDA extension programs, Level of resource sharing among TSHDA and leading partners is significantly higher in the ISBM than other two partnership model (p=0.001). Level of resource sharing among leading partner and tea smallholder is also significantly higher in the FBM than ISBM and DABM (p=0.001). Tea smallholders were benefited by loans, bonuses, machines to success by leading partners and tea smallholders provide good tea leaves to leading partners in FBM. Extension team of FBM, facilitates for improving smallholder land productivity by implementing replanting project providing financial and technical assistance. Hence, smallholders attached to FBM have more confidence on long term benefits granted by the extension model. Therefore, level of support to achieve long term perspective is significantly higher in the FBM than DABM (p=0.001). Tea smallholders in FBM model are more benefited than other PPP models. They get more support to develop their tea lands. With the regular meeting of partners for providing services to smallholders, level of technical information sharing in the model is significantly higher in the FBM than other two partnership models (p=0.001). Therefore, the level of satisfaction of tea smallholders about partnership model is significantly higher in the FBM than other two partnership models (p=0.001). Tea smallholders in FBM have a more benefits and support from other partners.

Relationship between socio-economic characteristics and the success of extension partnerships

Influence of socio-economic characters (Age, education level, experience, tea land extent, and productivity) of tea smallholders on the success of extension partnership was shown in this section. Correlation analysis was applied separately on each model for the analysis of above relationships.

The results showed a positive association between tea land extent of smallholders with the level of trust and cohesiveness in the FBM (Table 2). Tea Factories expect more green leaves from the tea smallholders. They are motivating maintain a close relationship with tea smallholders who have the higher extent of tea land. The studied all success factors on effective partnership are positively associated with age and experience of smallholders and which means that extension staff of factory based more focus to maintain close rapport with elderly and experience smallholders in order to build up trust and confidence, and to maintain their green leaf supply base. This positive association should be taken into consideration to strengthen the effectiveness of partnership model. It was also observed that studied all success factors on effective partnership are positively associated with the productivity of smallholder lands. Therefore, strengthening success factors of partnership will enhance the productivity of tea smallholding and thereby their livelihood.

Table 2. Correlation between socio-economic characteristics of tea smallholders and success factors on partnership in the factory-based model

Factors of success	Age		Education level		Experience		Tea extent		Productivity	
	r value	Sig. (p)	r value	Sig. (p)	r value	Sig. (p)	r value	Sig. (p)	r value	Sig. (p)
Trust and cohesiveness	0.09	0.96	-0.12	0.53	0.04	0.85	0.36	0.04*	0.14	0.45
Motivation to participate	0.18	0.36	-0.02	0.93	0.20	0.29	0.43	0.02*	0.31	0.10
Resource sharing	0.17	0.36	-0.11	0.57	0.17	0.36	0.34	0.07	0.26	0.17
Support to long term expectation	0.02	0.99	0.12	0.52	0.08	0.69	-0.02	0.92	0.21	0.26
Sharing of information	0.36	0.04*	-0.19	0.32	0.41	0.03*	-0.10	0.61	0.74	0.70
Level of satisfaction	0.23	0.22	-0.10	0.59	0.32	0.09	0.16	0.41	0.13	0.50

**Correlation is significant at 0.05 level*

Table 3 shows that positive association between tea land extent of smallholders with the level of trust and cohesiveness in the partnership model ISBM. Input suppliers may focus to motivate with smallholders who having higher extent of tea lands to promote their product. The studied all success factors on effective partnership are positively associated with the productivity of smallholder lands. Additionally, extension staff of this model also positively interact and motivate with experienced smallholders for the strengthening of their input supply base.

Table 3 Correlation between socio-economic characteristics of tea smallholders and success factors on partnership in input supplier-based model

Factors of success	Age		Education level		Experience		Tea extent		Productivity	
	r value	Sig. (p)	r value	Sig. (p)	r value	Sig. (p)	r value	Sig. (p)	r value	Sig. (p)
Trust and cohesiveness	-0.10	0.6	0.19	0.31	0.37	0.04*	0.40	0.03*	-0.42	0.02*
Motivation to participate	-0.05	0.80	0.31	0.10	0.37	0.04*	0.47	0.01**	-0.47	0.01**
Resource sharing	0.05	0.80	0.29	0.12	0.47	0.01**	0.53	0.01**	-0.49	0.01**
Support to long term expectation	0.04	0.84	0.05	0.08	0.17	0.38	0.37	0.04*	-0.20	0.30
Sharing of information	0.10	0.58	-0.07	0.70	0.25	0.18	0.39	0.03*	-0.31	0.10
Level of satisfaction	-0.01	0.96	0.14	0.47	0.23	0.23	0.47	0.01**	-0.02	0.29

***Correlation is significant at 0.01 level, *Correlation is significant at 0.05 level*

Leading extension partner of the DABM model more concern on development of smaller scale tea smallholders land than the higher for the development of them (Table 4). Partnerships in DABM positive associate with experience regarding the level of resource sharing in the model. Extension partners in DABABM will provide more benefits for their old customers to develop the partnership.

Table 4. Correlation between socio-economic characteristics of tea smallholders and success factors on partnership in development agency model

Factors of success	Age		Education level		Experience		Tea extent		Productivity	
	r value	Sig. (p)	r value	Sig. (p)	r value	Sig. (p)	r value	Sig. (p)	r value	Sig. (p)
Trust and cohesiveness	0.26	0.16	0.27	0.14	0.26	0.16	-0.41	0.02*	0.32	0.09
Motivation to participate	0.31	0.10	0.21	0.28	0.20	0.29	-0.38	0.04*	0.27	0.15
Resource sharing	0.29	0.12	0.22	0.25	0.23	0.23	-0.38	0.04*	0.31	0.10
Support to long term expectation	0.50	0.01**	0.15	0.44	0.13	0.50	-0.46	0.01**	0.37	0.04**
Sharing of information	0.39	0.04*	0.29	0.12	0.32	0.07	-0.31	0.10	0.36	0.04*
Level of satisfaction	0.36	0.06	0.06	0.76	0.04	0.82	-0.47	0.01**	0.24	0.20

***Correlation is significant at 0.01 level *Correlation is significant at 0.05 level*

It was also observed that studied all success factors on effective partnership are positively associated with the productivity of smallholder lands whilst level of technical information sharing and support to achieve long term expectation have significantly positive association with productivity of smallholding. Therefore, strengthening success factors of partnership will enhance the productivity of tea smallholding. The result illustrates in Table 4 shows that the extent of the tea smallholding land is negatively associated with the level of motivation to participate in the DABM.

CONCLUSION

This study confirms that leading partners in factory-based partnership model are providing better extension services with input by more frequent contacting their smallholders and conducting extension program. In the ISBM, the productivity showed a significant negative relationship with trust and cohesiveness, resource sharing and motivation. DABM was highly focus on poorer tea smallholders, whilst extension partners of other model more concern to strengthen the relationship with smallholders who having higher land extent. This study proves that the trust and cohesiveness, resource sharing, technical information sharing and motivation to work are the success factors for straightening of the partnership and land productivity of tea smallholding.

By illustration the results of above empirical study, authors provide sufficient evidence to prove that the success of the public private partnership models are strongly depend on the key characters of Trust and cohesiveness, resource sharing, technical information sharing and motivation to work among the partners.

RECOMMENDATIONS

Increase the frequency of meeting with partners and the number of extension programs which will help to straighten partnership among the partners. Enhance the trust and cohesiveness, resource sharing, technical information sharing and motivation to work for straightening of the partnership and land productivity of tea smallholding. Therefore, it is strongly recommended that all extension agencies develop a higher level of partnership and closer interaction among them and smallholders.

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