

Enhancing Perceived Crop Yield through Farmer's Accounting Literacy and Agricultural Extension Services Knowledge: Moderating Role of Farming Training

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The aim of this paper was to examine the role of farmers' accounting literacy and intention for AES knowledge in enhancement of 'perceived crop yield' (PCY). For this purpose, the study has examined the influence of farmers' accounting literacy on PCY with mediating role of intention for AES knowledge. Furthermore, the current paper analyzed the moderating impact of farming training on the association between farmer's accounting literacy and intention for AES knowledge. This study was performed in Thailand and the data was collected from 300 farmers in Thailand was structured through a questionnaire. The survey-based strategy was adopted to distribute the questionnaires amongst farmers. The non-purposive sampling was used to decide the sample from the population. The data collected through questionnaires was analyzed and CFA and SEM were applied to the data. Results depicted that the farmer's accounting literacy has significant positive influence on PCY and the intention for AES knowledge has a significant role of mediation between the farmer's accounting literacy and PCY. Furthermore, it has been found that the farming training positively moderates the association between farmer's accounting literacy and intention for AES knowledge. The current

findings and study have significant contributions to the theory and practice of agriculture.

Key words: *Perceived Crop Yield, Accounting literacy, Agricultural extension services knowledge, Farming training.*

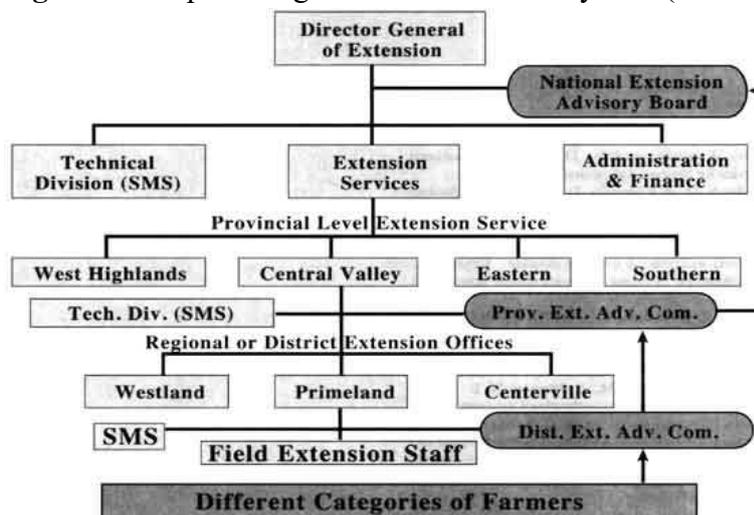
Introduction

Accounting literacy is always an important element which can determine the success or failure of a business because this literacy helps record keeping, cost management, cost reduction and other accounting functions of a business. The role of accounting literacy in agriculture is particularly important because an agricultural business really needs to handle its cost and accounting functions effectively in order to reduce wastage and to enhance efficiency. Record keeping is an important skill a business owner must possess as the accounting information is crucial for effective decision making (Paustian, 2013; Xu & Zia, 2012). The accounting literacy is embraced as an essential for every type of business because business owners or managers need to have accounting knowledge in order to plan and handle the financial matters and decisions effectively. Record keeping and reporting are most important skills that must be possessed by them to effectively report the business transactions. For these skills, it is necessary that managers or business owners should have related accounting knowledge so that, he/she can identify the cash flow, assets, cost, yield and liabilities in the business (Wise, 2013; Yasmeen, Abbasian, & Hussain, 2011).

The importance of accounting literacy is not only limited to internal parties of business i.e. owners or managers but is also important for the external parties for instance, the creditors should have proper accounting literacy for making decisions about lending a loan or the investor should have proper accounting knowledge to evaluate an investment. However, the focus of the current study is the accounting literacy among farmers. Since, most farmers are running their businesses as SMEs, they are normally not obliged to keep and maintain the books of accounts but the current study still discusses the importance of this skills for them so they can play an imperative role in the enhancement of national economy (Umeji & Obi, 2014). The agriculture in Thailand is considered an important domain because the agricultural production accounts a considerable portion of the total GDP of Thailand (Jermstiparsert, Sriyakul, & Rodoonsong, 2013; Sriyakul & Jermstiparsert, 2017). The recent estimates reveal that 9-10 percent of the total GDP of Thailand is accounted by the agricultural production in the country (Kasem & Thapa, 2012; Riwthong, Schreinemachers, Grovermann, & Berger, 2015). However, there is need to enhance the contribution of agriculture to the GDP in Thailand by increasing the crop yield as the agricultural sector in Thailand is not completely realizing the desired crop yield due to certain reasons (Gheewala et al., 2014; Jatuporn, Chien, Sukprasert, & Thaipakdee, 2011).

One of those reasons is the accounting literacy of farmers because it is considered that it can lead them to make effective accounting decisions through which they can achieve cost effectiveness, cost reduction, high yield and effective decision-making ability. The accounting related knowledge is important among farmers because it assists them to understand and identify cost at different points to reduce the unnecessary costs. The wastage significantly reduces if the farmer has accounting literacy (Ndulue, 2002; Umeji & Obi, 2014). Another important reason behind the low crop yield in Thailand is the lack of agricultural extension services in the country. There are very limited agricultural extension services (AESs) in the country due to the limited skills of farmers in Thailand. The AES refers to the services through which the agricultural advisory is provided to the farmers. It is an important application of “scientific research and knowledge” in farmer education in which the information inputs are delivered to farmers so they are able to enhance the agricultural productivity, improve food security, promote agriculture and enhance the standard of living in order to derive the economic growth ultimately (Benin et al., 2011; Labarthe & Laurent, 2013). Many countries are aware of the importance of AESs therefore, effective AESs systems are being adopted to accomplish the objective (Österle, Koutsouris, Livieratos, & Kabourakis, 2016). Figure 1 below provides an insight about the simplified system of agricultural extension.

Figure 1. Simplified agricultural extension system (Source: FAO)



It can be seen in figure 1 that AESs are offered at different levels i.e. “provincial level, regional level and field level”. The purpose of all these services is to enhance the education and ability of farmers to enhance their productivity. The accounting literacy of farmers have an important role in determining his/her intention for AES knowledge. When a farmer has accounting literacy then they have more awareness of the importance of AES knowledge resulting in positive intentions towards AES knowledge (Dimelu & Anyaiwe, 2011; Österle et al., 2016). Another important factor that affects the impact of accounting literacy on

intention for AES knowledge is the farming training (Aker, 2011; Chowa, Garforth, & Cardey, 2013).

Given the importance of accounting literacy and AESs, the current study aims to examine the role of accounting literacy and intention to AES knowledge in “perceived crop yield” among farmers in Thailand. Although, some past researchers have attempted to highlight the importance of accounting literacy and extension services in SMEs, the importance of these factors has not been examined with particular reference to farmers and crop yield (Gheewala et al., 2014). Therefore, the objectives of the current study revolve around examining the impact of accounting literacy on perceived crop yield, the mediating role of intention for AES knowledge between farmer’s accounting literacy and PCY and to analyze the moderating role of farming training between the farmer’s accounting literacy and intention for AES knowledge. The remaining part of this paper consists of literature review, methodology, results and conclusion.

Literature Review

Farmer’s Accounting Literacy and perceived Crop Yield

Researchers Eyhorn et al. (2019) defines and elaborates on the sustainability of farming whether organic or inorganic, which depends on the efficiency of farmers who drive the agricultural farming to the global level expertise. However, farm accounting and business performance is always in the hands of accountant or a business manager who deal with the latest farming techniques and methods to meet the domestic and to grow the production level, to increase the international market and customer demand requirements (Kennedy, Brumby, Versace, & Brumby-Rendell, 2018). Many agriculture based countries such as Africa, South Asian Countries and some of the Far East Countries whose main production is the production and growth of agriculture depends on the latest techniques used for farming purposes while, their business managers who manage farm business usually plays a key role in the management and success of the farms (Weber, 2017). So, the relationship between farming accounting literacy (FAL) and crop yield is very strong and it has a positive influence over each other in many cases. Studies by Valley & Wittman (2019), suggest that Agricultural professionals have sound knowledge about how to increase production yield on yearly bases while promoting the farming accounting literacy at larger level so they can have a deep understanding of farming financial literacy which benefits both the farmers and stakeholders. Due to development in farming agricultural business’ increasing opportunities for literate farmers are gaining attention like various training programs and packages which take initiative in educating the producers or farmers to the international standards.

They have also focused on improving the financial literacy skills of farmers. Accounting is used in business of all types whether it is a small or a large business as it is a popular imagery which helps to sustain a business. Accounting and crop yield both improved with the commercial influence in this modern era. According to studies by (Kaur & Kaur, 2018) the agricultural sector employs more than one third of the global population. This is why studies utilize different Environmental Accounting Methodologies to generate the efficient farm productive cycle which can easily correspond with several environmental systems in the farm agroecosystem. Policy makers and decision makers of farming ecosystem also need to study accounting of finances to increase the crop yield more than what is perceived. Ecological environmental models and structures including yard stick improve the efficiency of FAL along with PCY. Agricultural policies for the last few years are taking the environmental protection of farms and agriculture as the prior objective (Zarębska & Michalska, 2016). For this purpose, the environment and policies regulation is an important factor to increase the yield of crops and also to improve literacy rate regarding farming finances and accounting.

This will therefore ensure the benefits of sustainable production activities which will be in favour of crop growth as well as its per annum yield. FAL can also help in the conservation along with the restoration of nature and the environment including different landscapes which positively influences the PCY. Various studies (Valley & Wittman, 2019) suggest through environmentally oriented strategy procedures, to offer supplementary incentives, upon which a wider number of farmers can exchange their actions towards environmental-friendly production. Theoretical based evidence explains the Economic-Ecological LP model which matches with the environmental and economic aspects at farm level enhance crop yield with the help of the involvement of FAL (Oliveira, Coelho, & Antunes, 2016). Thus, the following hypothesis is proposed:

H1: Farmer accounting literacy has a significant impact on perceived Crop Yield.

Intention for Agricultural Extension Services knowledge, Farmer's accounting literacy and perceived crop yield

Kaur and Kaur (2018) describes the impact of Agricultural extension Services Knowledge (AESK) between FAL and PCY. However, according to this study public agricultural extension system is considered one of the largest and most suitable foundations for information and knowledge that improves the agricultural production at a global level. Extension approaches are related to environmental accounting methodologies. Environmental ecological model (EEM) develops various linkages (Raina, Chahal, & Kher, 2016) with environmental resources, farmer's knowledge, improvement in agricultural technologies and advancement in AESK to develop a strong connection between FAL and PCY.

FAL positively influences AESK through innovative extension approaches which gradually increase the economic potential of the country. AESK improves the farmer's knowledge regarding newly developed farming techniques and methods. According to past studies (Mukherjee & Maity, 2015) several agroprocessing approaches and trading firms usually make contracts with the farmers to produce specific products for trade purposes at the international level which will benefit the local market and develop the existence of international market. AESK however promotes PCY due to certain factors like improvement of local and international trade, involvement of government and private sector to increase the growth rate of crops as well as to double the production rate, to produce adequate or fine quality products and processing and trading to high level market for better outcomes and to achieve better results in the field of farming and agroprocessing system. Furthermore, to improve specified commodities and regularize the growth products international laws and policies regarding farming should be adopted by different agricultural companies, production firms and extension services which can provide credit, inputs and new technologies to the farming sector for improvement of production (Kumar & Ratnakar, 2016).

FAL is also an important aspect which supports the agroecological environment which ensures the running of an agriculture business as efficiently and effectively as possible. Manufacturing services of small or large businesses require clients, customers, farmers and landowners for agricultural management who are responsible for the development of AESK and which further develops PCY. Studies by (Aker, Ghosh, & Burrell, 2016) elaborate that Agriclincs and agribusiness centers provide special knowledge and information about agricultural advisory services to train farmers through technical strategies which can make them financially literate thus, they can easily handle the difficulties faced in the fields as well as farms. Dealing with fertilizers, pesticides and agro machinery is the work of the expert farmers who know how to manage all these things together at the same time which will perhaps increase the growth rate along with PCY. Extension services are also considered as one of the promotions of agro based environment and farming for marketing purposes. As per recent studies (Baloch & Thapa, 2018) various NGO'S and other private companies play their role in managing agroprocessing with the help of FAL. Public-private partnership describes a business venture which makes extension agent accountable to farmers who are literate and competent enough to manage their work by maintaining the best quality of crops and production yield.

Empirical evidences of various studies (Elias, Nohmi, & Yasunobu, 2016) explain the farming based extension which is an independent group of literate farmers with shared goals and objectives. Sharing of views, interests and similar farming techniques between farmers encourages farmers to make certain efforts to increase the rate of their crop yield with the help of AESK. While they share their advices in agriculture, the information from farmers is

considered limited as per agriculture farming is concerned. Thus, the following hypothesis is proposed:

H2: Agricultural Extension Services Knowledge has a significant mediation between farmer accounting literacy and perceived crop yield.

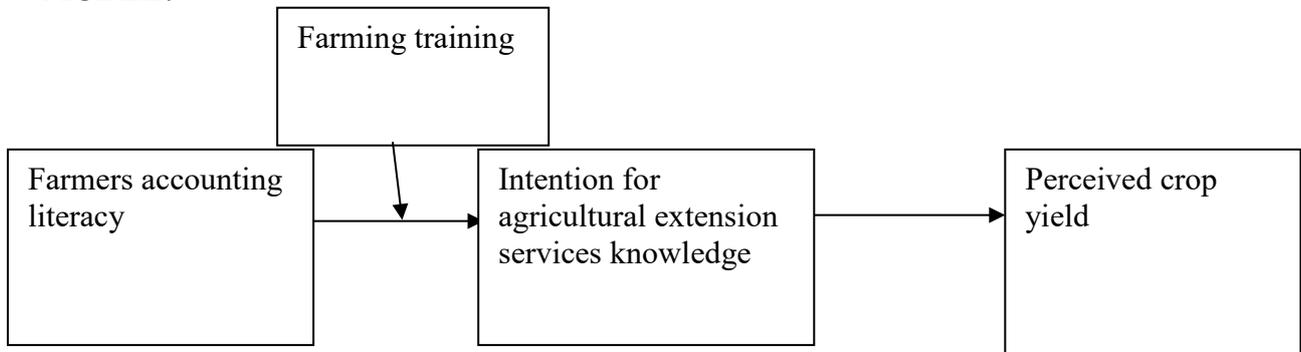
Moderating Role of Farming Training

Eyhorn et al. (2019) explains the farming training in collaboration with FAL and PCY. Farming training is relevant to the experience of farming with herbs, fertilizers, shrubs, crops, agriculture and harvesting machinery, seeds and pests. This also includes crop running, harvesting season, checking the growth and habits of trees, plants and crops. It is recommended that a player becomes familiar with the farming skills and crop running by associating himself with FAL which will instead promotes PCY (Murai & Singh, 2016). Farming trainer acts as a moderator between FAL and PCY which enhances the impact on AESK. Farming training programs are quite similar to agricultural training programs as both are conducted in order to improve business performance along with production growth and agricultural farming development. Farming training programs however, promotes the profitability of the farms by improving the technical skills, knowledge, information, behavior and attitude towards farming and agriculture (Never, Tinashe, Christopher, Edgar, & Dadirayic, 2018).

Training is considered as an investment in people to increase knowledge in farm management and improve human resource planning. Farming training is considered an asset which has to be preserved as well as polished more often. Studies (Phukan, Lepcha, & Avasthe, 2017) believe that agriculture farming should include the use of latest technology which will benefit the agricultural sector and for this purpose environmental-ecological model should be used to transmit latest technical know-how to farmers for a better yield of crops and to increase the final income of the farming community. Transferring of technology from conventional means to modern means can only be transmitted if the pace of changing of environment matches with the pace of farming community training. Accounting literacy plays a vital role in the transferring of farming training and experiences from one sector to another which might lead to better business performance. Proper accounting records are the source of operation of business-like agriculture business needs adequate handling of accounts to keep knowledge of sustainable businesses and this knowledge lies with literate farmers who focuses on farming training to improve the yearly production at a larger pace which might cause a positive effect on perceived crop yield. Thus, the following hypothesis is proposed:

H3: Farming Training has a significant moderating impact between farmer's accounting literacy and intention for AES.

MODEL:



Methodology

Population and Sampling

This study has been conducted in order to enhance the perceived crop yield through farmer's accounting literacy, in mediating the role of agriculture extension services knowledge and in moderating role of farming training. The population selected by the researcher is farmers in Thailand. Qualified farmers for this study must be specialized in rice, rubber, cassava, fruit, corn and in sugar cane crops yielding because these crops are internationally exported and yield more revenue. Thus, the farmers who have accounting literacy with the help of farming training can enhanced crop yield. As far as the sampling is concerned, sample size remains an issuing point while using SEM for data analysis and Hazen et al. (2015) reported that sample size must be large. So, sample size has been selected based on Klein's (2015) idea which states that required figures obtained through formula number of items * 10 represent the sample size. Almost 300 questionnaires distributed among the farmers of Thailand out of which only 280 responses have been received. After the deletion of invalid responses, 267 responses have been considered valid which clearly state how the perceived crop yield enhanced. While selecting a sample, purposive sampling techniques have been used as the purpose of this study entails that data has to be collected from farmers in Thailand.

Data Collection and Procedures

In this study, the data collection method used is a questionnaire. The survey questionnaire has to be in Thai language for collecting data from farmers of Thailand. The content validity of scale which has been used in questionnaire should be at an acceptable level. After the questionnaire has been finalized, the researcher administers this questionnaire through a self-administered questionnaire method because farmers literacy rates are low thus, they need to be guided in regard of any term in questionnaire.

Validity, Reliability and Common Bias

In this study, validity and reliability has been assessed through AMOS and SPSS respectively. As far as reliability is concerned, it has been assessed by SPSS and examined by criteria, Cronbach's α larger than 0.7 (Chin, 1998). Coming towards convergent validity, it has been assessed through AMOS and examined by three criteria, one is item loading (λ) larger than 0.70 and statistical significance, second is validity is composite construct reliability larger than 0.80 and the third criteria is average variance extracted (AVE) larger than 0.50. AMOS has also been used to assess the discriminant validity between constructs and examined by criteria which states that square root of AVE for each construct should be larger when it is correlated with all other constructs (Fornell & Larcker, 1981). Further, a common method bias has been generated by the fact that respondents provide the measures of dependable and explanatory variables by a common rate (Donaldson & Grant-Vallone, 2002; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). In this study, the respondent has used the same subjective measures for the set of variables such as farmer's accounting literacy, agriculture extension service knowledge, farmers training and crop yield, that's why risk of common method bias has been generated. To minimize this risk, the technique the researcher has used in this study is Harman's single factor test. In this test, all items of all the construct has been included in order to test whether most of the variance could be accounted for by one single factor. Results of this test reported that all constructs extracted as different factors, 91% of total variance has been explained by factor solution and 19% of variance explained by first factor. For ensuring inexistence of the common bias method, no single factor accounts for bulk of the covariance.

Variable Measurement

In the current study, four variables are used in the theoretical model and a self-administrative questionnaire was adapted in order to collect data from respondents. It is necessary to use reliable scales to measure the constructs. The independent variable of this study is farmer accounting literacy which has 11 items. This scale has good validity in previous studies and it was adapted from the study (Nurfarahin Roslan & Pauz, 2018). Farmer training is a moderator in this study and its scale was adapted from the study of BENJAMIN (2014) which has 5 items. Agricultural Extension Service knowledge plays a mediating role in current study and the scale of this variable is adapted from the study of (Aker, 2011; BENJAMIN, 2014) which had 15 items. The last variable is perceived crop yield whose scale was adapted from the study of (Okada, Styles, & Grismer, 2008) and it has 4 items to measure the construct.

Hypothesis testing

Hypothesis testing has been done through structural equation model (SEM), which has been run on AMOS. SEM used to test the hypotheses such as farmers training, farmer's accounting literacy, agriculture extension service knowledge and perceived crop yield with the help of path analysis. In path analysis, researcher studies the standardized coefficient of variables and the significance values of variable. In order to report which hypotheses relationship have been accepted and which hypotheses relationship were not accepted.

Empirical Finding

The purpose of the study is to enhance the Perceived Crop Yield through Farmer's Accounting Literacy and Agricultural Extension Services Knowledge along with the moderating role of Farming Training. A self-administered questionnaire was used to collect data from 300 respondents out of which 267 responses were adequate for analysis. In this study 110 males and 157 females participated. Most of the respondents are of young age, 116 respondents have age less than 30 years. There are 126 respondents who are the students of the bachelor program, while 108 respondents are master's students.

Reliability and suitability of the data

The reliability of the data was analyzed with the help of Cronbach alpha while suitability is tested by the KMO test by using SPSS shown in table below:

Table 1: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.926
Bartlett's Test of Sphericity	Approx. Chi-Square	10702.905
	df	595
	Sig.	.000

More than .60 the value of KMO is considered a good fit for data suitability of data for major analysis, now the current value is .92 is more reliable and good fit shown in Table 2 below:

Table 2: Data Reliability

Variable	No of items	Cronbach alpha
PCY	4	0.784
FAL	11	0.959
FT	5	0.914
ES	15	0.952

The outputs of the Cronbach alpha test shows that every variable has value more than .70, while the minimum value of Cronbach alpha must b.70 is required, so our data has an excellent reliability outcome.

Discriminant and convergent validity

Discriminant validation of the data is required to judge the multicollinearity of the data, while convergent validity is required to analyze the internal consistency of the constructs shown in Table 3:

Table 3: Discriminant and convergent validity

	CR	AVE	MSV	PCY	FAL	FT	ES
PCY	0.782	0.497	0.001	0.705			
FAL	0.966	0.722	0.406	0.018	0.850		
FT	0.915	0.683	0.526	0.006	0.637	0.826	
ES	0.976	0.728	0.526	-0.023	0.629	0.725	0.853

Discriminant validity is checked by seeing the CR and AVE value. If the CR is greater than .70 and AVE is more than .50 then, the validation is confirmed. The current findings show that all variables have CR more than, 0.70 and value of AVE is also greater than .50 for all constructs. Other remaining parts of the table prove the convergent validity of each construct because all variables have more value for themselves as compared to others.

Confirmatory Factor Analysis

CFA is the test which provides the ultimate indicators to assess the fitness of the research model. The following are the outputs and threshold values of test assessing the model fitness shown in Table 4:

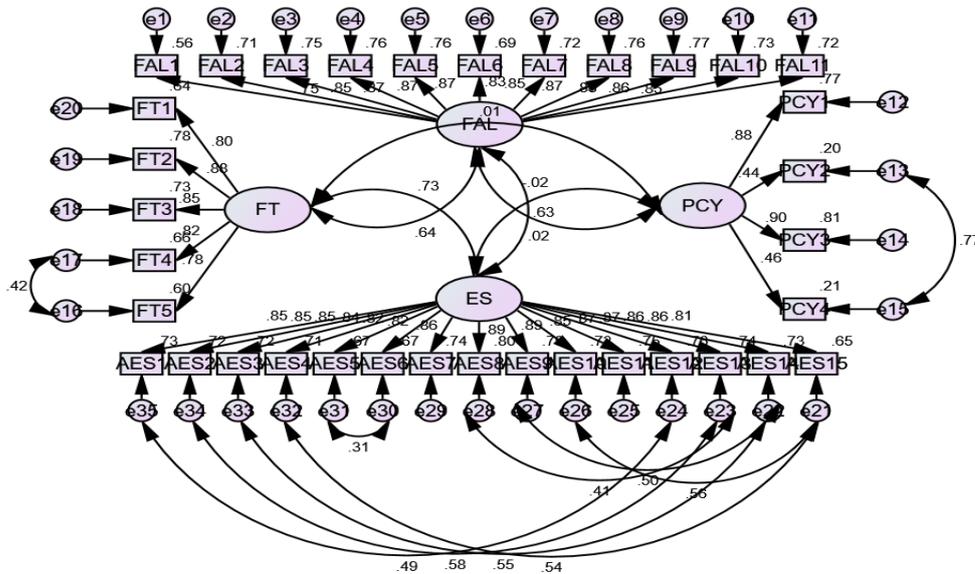
Table 4: CFA

Indicators	Threshold range	Current values
CMIN/DF	Less or equal 3	2.582
GFI	Equal or greater .80	.801
CFI	Equal or greater .90	.919
IFI	Equal or greater .90	.919
RMSEA	Less or equal .08	.077

The values for the current study show that all indicators are giving acceptable values so, the research model is a good fit. The value of CMIN/DF is 2.582, GFI is 8.1, CFI is 9.19, IFI is

9.19 and RMSEA is.077. These all output values are meeting the threshold range and confirming the fitness of model. Figure 2 below is the picture of CFA:

Figure 2. CFA



Structural Equation Modeling

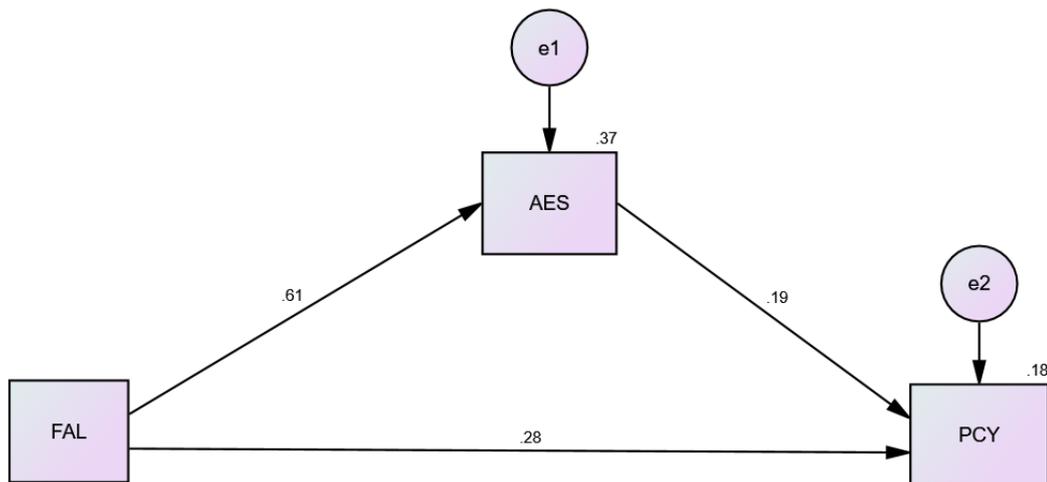
Structural equation modeling is a type of multivariate regression which produces the results of direct and indirect effects at the same time. It also provides the total effect of a variable on the dependent variable. Table 5 below shows the results of SEM which indicated the hypothetical effect of the construct:

Table 5: Structural Equation Modeling

Total effect	FAL	AES
AES	.610***	.000
PCY	.395***	.194**
Direct effect	FAL	AES
AES	.610***	.000
PCY	.277**	.194**
Indirect effect	FAL	AES
AES	.000	.000
PCY	.119*	.000

The results of structural question modeling indicated that farmer's accounting literacy has positive and significant direct impact on intention for agricultural Extension Service knowledge and this effect is 61% whereas the direct impact of accounting literacy on perceived crops yield is 27.7% which means that increasing the one unit of farmer accounting literacy will bring 27.7% positive influence on perceived crop yield. Extension Service knowledge for agriculture significantly mediated between farmer accounting literacy and perceived crop yield. The mediating role of it is 11.9% means that agricultural Extension Service knowledge has 11.9% significant and positive mediating role between farmer accounting literacy and perceived crop yield. Figure 3 shows a picture of the structural equation modeling which showed the standardized direct impact of each construct on other variable.

Figure 3. SEM



Moderation Analysis

With the help of structural equation modeling, two-way interaction was obtained to check out the moderating effect of farmer training between farmer's accounting literacy and integration for agricultural Extension Service knowledge. Results are showing that Farmer's training significantly moderates the relationship between farmer accounting literacy and agricultural Extension Service technology which can be seen in the Figure 4 below:

Figure 4. Interaction SEM

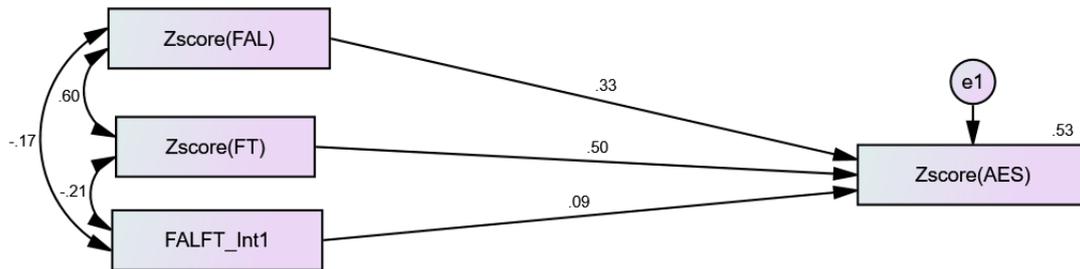
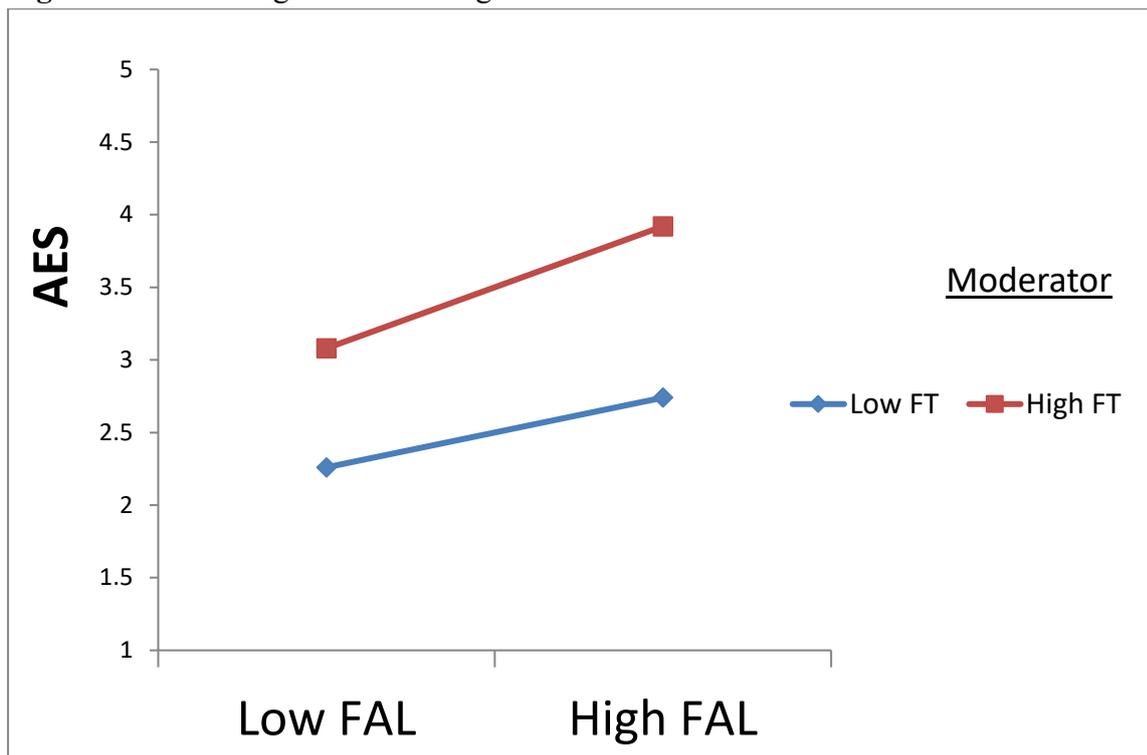


Figure 3 above is showing that the direct effect of farmer accounting literacy on agriculture extension knowledge is 33%. The direct impact of moderator (which is farmer’s training) on agricultural Extension Service knowledge is 50%, whereas the interaction effect of farming training between farmer accounting literacy and agricultural Extension Service knowledge is 9% which is significant. Figure 5 shows the graph presenting it via 2-way interaction:

Figure 5. Moderating role of farming train between FAL and AES



Discussion and conclusion

Discussion

The aim of this study was to know about the relationship between the farmer’s accounting literacy (FAL) with the perceived crop yield (PCY). The aim was also to be aware of the

impact of the mediating role of the intention of agricultural extension service knowledge (AESK) between farmer's accounting literacy (FAL) and perceived crop yield (PCY) (Cruz-Garcia & Price, 2011). The study also aimed to know about the moderating role of farming training (FT) to know about the relationship between a farmer's accounting literacy (FAL) and perceived crop yield (PCY). The study suggested the following hypothesis, the first hypothesis suggested that 'farmer's accounting literacy has a significant impact on perceived crop yield' this hypothesis is accepted. According to Mike Stephen who specializes in accounting corporate finance, it is seen that farmer's accounting literacy has a positive impact on perceived crop yield and it is proved from this study as well. The second hypothesis is "intention for agricultural extension service knowledge (AESK) has a significant mediating role between farmer's accounting literacy" and perceived crop yield, this hypothesis is accepted as well (Kalunda, 2014). According to Gopal Bahadur Thapa, it is clear the role between farmer accounting literacy and perceived crop yield is positive and significant. The third hypothesis proposed that "farming training has a significant and moderating role between farmer's accounting literacy and intention of agriculture extension service knowledge". According, to Doctor Jones in 2011, it is clearly described that the moderating role between farmer's accounting literacy and intention of agriculture extension service knowledge is significant and positive (Kersting & Wollni, 2012).

Conclusion

The aim of the study is knowing the relationship between a farmer's accounting literacy and perceived crop yield. This study took intention for agriculture extension and service knowledge as a mediator and it took farming training as a moderator. The study was conducted in Thailand. The research tool which is used for the data collection was a questionnaire and, in this study, the data was collected from the farmers living in Thailand. It is concluded that the farmer accounting literacy has a positive and significant relationship with perceived crop yield and farming training positively moderates between farmer's accounting literacy and intention for agriculture extension service knowledge. Intentions for agriculture extension service knowledge have a significant positive roles with farmer's accounting literacy and perceived crop yield.

Implications of the study

Farmer's accounting literacy can be applied in order to increase the perceived crop yield. It can be applied practically in agriculture in order to better crop yield and improve the agriculture sector. This study has increased the literature material of farmer's accounting literacy and the importance of perceiving crop yield and farming training as a moderator between farmer's accounting literacy and intention for agriculture extension service knowledge. Through this study, many people can get their requirements regarding farmer's



accounting literacy and the importance of perceived crop yield with the mediating role of agricultural extension service knowledge and the moderating role of farmer training. If the farmer's accounting literacy is used in farming training and agriculture sector it can enhance the capabilities of the local farmers and can be proved beneficial or the agriculture sector. It can be applied in order to grow the perceived crop yield towards improvement. Farmer's accounting literacy can also give knowledge to the farmers about tough methods of farming.

Limitations and future research indications

This research was conducted by selecting 300 farmers in Thailand. The future researcher can expand the numbers of their sample size and conduct the research on a larger population. This research only used the questionnaire method, the future researcher may use the other and effective tools of research which can be economical and less time-consuming. They could also go and meet with farmers in person to know their requirements. This is a worldwide problem, but only conducted in Thailand thus, research can be conducted outside Thailand and in other countries around the globe keeping the same variables under study. The future researchers can obtain more reliable data and suggestions for their problems from developed countries and they can suggest and recommend some improved statements to the farmers of underdeveloped countries.

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