

## Importance of Transfer of Technology Skills and Human Resource Development Skills in Work Performance of Extension Agent in Sarawak Cocoa Industry

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### ABSTRACT

Smallholders monopolized the cocoa industry in Sarawak, and it has the biggest cultivated area compared to Sabah and Peninsular Malaysia. Despite possessing a big, cultivated area, the production of cocoa beans in Sarawak still does not meet the expectation set by the Malaysian Cocoa Board (MCB). Extension agents play an important role in transferring technology to smallholders; thus, extension agents should be competent in performing the duty. Transfer of technology (ToT) skills and human resource development (HRD) skills are two primary skills that have been proven to be important in determining the work performance of extension agents. Thus, this study determines the relationship between ToT skills, HRD skills, and the work performance of extension agents in the Sarawak cocoa industry. Stratified random sampling has been employed in this research with 148 respondents to evaluate the performance of extension agents. The data were analyzed using descriptive, correlational, and regression analysis. This research showed that all the skills of ToT and HRD have a positive relationship with work performance. Regression analysis showed that decision-making, social, and technical skills have a significant value of  $<0.05$ . The improvement work performance of extension agents in ToT and HRD skills will aid the production of cocoa beans in Sarawak to be improved as expected by

MCB. Smallholders will have more access to knowledge, technology, and information related to the cocoa industry, so there is a chance to increase the production of cocoa beans in the region.

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## INTRODUCTION

Cocoa is one of Malaysia's commodity crops apart from rubber and oil palms. In Malaysia, the most covered area of cocoa plantation is in East Malaysia, which is Sabah and Sarawak. The area covered by Sabah and Sarawak is 6,881 hectares and 6,772 hectares, respectively (Malaysian Cocoa Board, 2017). Malaysia used to be one of the largest producers of cocoa beans globally. However, due to several factors such as poor world cocoa prices, competition of land use for rubber and oil, climate change, and pest and disease, the production of cocoa beans in Malaysia decreased significantly. As a result, the global supply and demand for cocoa beans fluctuated between 2010 and 2017 (ICCO, 2019). According to ICCO (2019), there was a surplus of production of cocoa beans in 2011, 2012, 2015, 2017, and 2018 while there was a deficit of production in 2013, 2014, and 2016. For the cocoa industry in Malaysia, supply and demand have been in constant deficit from the year 2000 until 2016. As a result of the increase in the demand for cocoa beans, the production of cocoa beans has decreased; thus, this situation is very worrisome. The production of cocoa beans decreased from 70,262 tonnes in the year 2000 to 1,757 tonnes in 2016 in Malaysia, whereas in the case of Sarawak, the cocoa beans production decreased from 3,710 tonnes in 2000 to 272 tonnes in 2016 (Malaysian Cocoa Board, 2017).

In Sarawak, smallholders are the main sector that is involved in cocoa. Since 2009, the cocoa cultivated area in Sarawak has been bigger than Peninsular Malaysia and Sabah, despite all the cultivated areas being smallholders (Malaysian Cocoa Board, 2017). This research focused on Sarawak because smallholders are dominant farmers compared to Sabah and West Malaysia. Smallholders rely on extension agents to receive new technology, information, and knowledge related to the cocoa plantation. Extension agents are the ones that educate farmers for the benefit of technology adoption. Fadzim et al. (2016) stated that farmers need to access all the technology and relevant knowledge on cocoa farming for better production. Therefore, focusing on developing knowledge and skill for cocoa farmers with the help of extension agents is the primary objective in improving the local production of cocoa beans.

Malaysian Cocoa Board (MCB) is the agency managing the cocoa plantation and has introduced several extension services to overcome the situation. The extension agents of MCB carried out their duty under the coordination of the Technology Transfer and Extension Division. This division is responsible for transferring new technology developed by the research and development division. Extension agents must possess hard skills, such as technical skills, and soft skills, such as leadership skills. These abilities have aided extension agents in performing their duty effectively in every situation and helped the technology dissemination process to be successful. According to Kasin (2012), extension agents of MCB has the responsibility to motivate cocoa farmers to identify the problems and solutions through the adoption of technology being disseminated, to serve as a link

between the MCB researcher and cocoa farmers, and lastly, to persuade cocoa farmers to adopt the new technology that has been transferred.

MCB has introduced several extension programs to the farmers. However, they still have failed to increase the production of cocoa beans. The MCB targeted yield to be achieved set to be 1.5 tons/ha/yr, but the current average production is only 0.5 tons/ha/yr, and the gaps can be seen to be over 50% and create a lot of challenges (Malaysian Cocoa Board, 2017). Apart from external problems that cannot be controlled, such as climate change and world cocoa price, competencies of the extension agents in Sarawak that are disseminating the technology could be a problem. The performance of extension agents in technology transfer is crucial because it can facilitate the process of technology and knowledge transfer so the farmers can increase the productivity of a farm (Suvedi & Kaplowitz, 2016; Danso-Abbeam et al., 2018).

Murni et al. (2019) stated that extension agents need to possess transfer of technology (ToT) skills, as these skills are the basic skills in technology dissemination. The ToT skills mentioned are technical skills, delivering skills, and evaluating skills. Furthermore, Isah et al. (2019) also mentioned that these ToT skills influence the performances of extension agents when executing their duty. Isah et al. (2019) added that human resource development (HRD) skills, such as leadership skills, decision-making skills, and social skills, help stimulate extension agents' performances in technology and knowledge transfer. Organizations with employees with inefficient HRD skills will affect the entire organization's performance (Mengal & Habib, 2016). Therefore, extension agents of MCB in Sarawak must possess ToT skills and HRD skills to disseminate the technology successfully.

Agricultural extension services in Malaysia only concentrate on developing and improving ToT skills (Shah et al., 2013). It is not common to find research on HRD skills and work performance; thus, this shows a gap between ToT skills, HRD skills, and work performance. Specific ToT skills and HRD skills are needed for the performance of extension agents to aid in an increase in agriculture productivity (Issahaku, 2014). Research by Isah et al. (2019) and Motoloni et al. (2017) has proved that extension agents need specific ToT and HRD skills to transfer technology to the farmers successfully. Thus, this study examined the relationship between ToT skills, HRD skills, and work performance of extension agents MCB in Sarawak based on the perception of cocoa farmers.

This study aims to determine extension agents' skills related to ToT, HRD, and work performance to determine the relationship between ToT and HRD with work performance. The last objective is to identify which skills contribute to the work performance of the extension agents based on the perception of cocoa farmers.

## LITERATURE REVIEW

Competency is the ability to perform tasks effectively and efficiently, and it is important in organizations because it can be a key to a successful organization. Competency does not only involve knowledge and skill but also depends on how to fulfill complex demands (Raychen & Salganik, 2001). The Iceberg Model of Spencer and Spencer (1993) showed that competencies required by individuals in any field of work are knowledge, skill, self-concepts, traits, and motive. The model of the iceberg was applied in this research because this model describes competencies required by extension agents of MCB in Sarawak. Knowledge refers to individuals' information and learning, such as the agricultural extension agent of MCB in Sarawak knows all related cocoa technology. Skill refers to the individual ability to perform their task, such as the agricultural extension agent of MCB in Sarawak skill in transferring technology. Self-concept refers to an individual's attitude, such as interaction skills between extension agents and cocoa farmers. Traits refer to the physical characteristic and reactions towards any situation. For example, extension agents of MCB in Sarawak need to have good leadership in building the trust between cocoa farmers. The last characteristic is motives, which refer to the emotion or desire to complete the task. This characteristic is important to extension agents as they are responsible for delivering the technology to the cocoa farmers. All characteristics are equally important to give out the perfect performance for the extension agent of MCB in Sarawak. Lack of knowledge and skill related to the technology will delay the process of technology transfer (Scheer et al., 2011; Efstathiades et al., 2000). Overall, competency includes knowledge, skill, traits, abilities, and behavior that need to be regularly assessed so that individuals can perform work effectively (Davis, 2015; Suvedi & Kaplowitz, 2016).

In many organizations, an individual's work performance is important in ensuring the productivity performance of organizations (Shaffril & Uli, 2010). For an organization to be productive all year long, the performance of the employee and employer needs to be assessed to make sure they can deliver their task successfully (Loper, 2016). In the agriculture industry, numerous research was conducted to evaluate the work performance of extension agents. The performance of extension agents influences crop production's productivity because the crop's production can be increased with new technology adopted by farmers through technology delivered by extension agents. Bahua (2013) reported that improvement of performance extension agents showed significant increases in farmers' participation in maize planting activity.

Transfer of technology (ToT) is defined as a process of delivering the technology and knowledge for a client's adoption (Powers & McDougal, 2005). ToT is an essential skill that extension agents require. In making sure technology can be transferred to the farmers smoothly, extension agents need to have excellent technical skills as these skills reflect the performance of extension agents. A study by Wasihun et al. (2013) found that the technical

skills of extension agents in Ethiopia were poor, and it reflected the work performance of extension agents in technology dissemination. Similar to Günsel et al. (2018), who proved that the work performance of extension agents influences the performance in transferring technology. According to environmental changes extension agents must regularly keep their knowledge and skills up to date. It enables them to transfer the technology to the cocoa farmers. Besides technical skills, delivering skills play an important role in technology transfer. According to Alhassan (2013), technology transfer includes an effective delivery method in persuading farmers to receive and adopt new technologies. The effectiveness and success of technology transferred to the farmer result from the service delivered by extension agents. Transfer of technology results is often used to evaluate the performance of technology transferred by extension agents to the farmers to improve performance as the effect of technology adoption (Yoo & Yang, 2015). Evaluation skills of extension agents are skills used to measure work performance. Ability extension agents to evaluate farmers' improvement in knowledge and skill based on technology adoption are important in technology transfer (Waroonkun, 2007). Extension agents of MCB in Sarawak should have sufficient and up-to-date knowledge and skills concerning the delivery of cocoa technology and evaluating cocoa technology adopted by farmers.

Human resource development (HRD) usually relates to an individual's soft skills, and it is defined as the combination of training and career development within organizations for organizational growth and effectiveness (Salleh & Sulaiman, 2016). Two organizations that offer the same services were differentiated in the quality of human resources (Sharma & Maheshwari, 2013). Thus, human resource development in organizations must be elevated to another level for efficient production. HRD in agriculture functions as a tool to aid the farmers in making their own decisions for crop production. Extension agents need to have strong HRD skills as these skills facilitate the smooth process of transferring technology to the farmers (Kesti, 2012). Therefore, the enhancement of HRD in extension agents is the priority for agricultural extension services.

However, the HRD skills of extension agents were not widely evaluated in Malaysia compared to ToT skills. Performance extension agents in HRD need to be discovered widely in ensuring the agricultural extension services can sustain and be successful in the foreseeable future (Rahim, 2010). Performance of extension agents on HRD can be reflected based on leadership skills, assisting farmers in making sound decisions, and social skills that are known to be related to the HRD improvement for extension agents (Rosnita et al., 2017). Martin and Suwanto (2019) found that the work performance of extension agents was influenced by communication skills, critical thinking skills, and decision-making skills. Varner (2011) determined that social interaction, knowledge and technology delivery, and leadership, contribute prominently to work performance. In order to ensure the process of technology dissemination is successful, extension agents of MCB in Sarawak are required to exhibit HRD skills, such as leadership skills, decision-making skills, and social skills.

The literature review findings indicate that skills in ToT and HRD in extension agents play a significant role in technology adoption by cocoa farmers. Cocoa farmers need an extension agent who can decide to adopt or reject new technologies. Furthermore, the literature review proved that skills in ToT and HRD influenced the work performance of extension agents in delivering technology to the farmers. Therefore, extension agents must possess skills of ToT and HRD as it was apparent that guidance from extension agents can improve crop production.

## **METHODOLOGY**

This study employed descriptive correlational research to describe and explain the importance of data collected and discover the relationship between the dependent and independent variables. In this research, the dependent variable is the work performance of extension agents, while the independent variables are ToT skills and HRD skills. This research is based on the model of the iceberg by Spencer, and Spencer (1993), where skills under ToT, which are technical, delivering, and evaluating skills, represent knowledge and skill, while skills under HRD, which are leadership skills, decision-making skills, and social skills represent self-concepts, trait, and motives. As highlighted by Spencer and Spencer (1993), knowledge, skill, self-concepts, traits, and motives influence the work performance of individuals in completing their tasks. The iceberg model adequately explains the relationship between ToT skills, HRD skills, and work performance of extension agents of MCB in Sarawak. In this research, there are six hypotheses developed. The following hypothesis was tested.

H1: There is a significant relationship between technical skills and work performance of extension agent MCB in Sarawak

H2: There is a significant relationship between delivering skills and work performance of extension agent MCB in Sarawak

H3: There is a significant relationship between evaluating skills and work performance of extension agent MCB in Sarawak

H4: There is a significant relationship between leadership skills and work performance of extension agent MCB in Sarawak

H5: There is a significant relationship between decision-making skills and work performance of extension agent MCB in Sarawak

H6: There is a significant relationship between social skills and work performance of the extension agent MCB in Sarawak

The study's target population was from the Kota Samarahan and Betong regional offices because most productive cocoa farmers are under the management of these two regional offices. Sebuyau, Sri Aman, Asajaya and Padawan are under management of Kota Samarahan regional office while Engkilili is under Betong regional office of the cocoa board. Therefore, the study population was the productive cocoa farmers in Sarawak with 5–7 years of experience in the cocoa plantation. They have received the cocoa technology transferred by extension agents such as pruning, fertilization, pest and disease control, and processing of cocoa beans technologies. This technology was transferred to farmers when the cocoa trees were matured, which takes a minimum of 4 years. Cocoa farmers who had just started to plant cocoa were excluded from this research because they had not yet received the technology measured in this research. The productive cocoa farmers must have experience attending basic and intensive training provided by MCB.

The population for the study was 249 productive cocoa farmers in Sarawak. The study's sample size was determined using table from Krejcie and Morgan (1970). The size of this study is 179 respondents (Table 1). One hundred forty-eight respondents answered the questionnaire, but only 129 questionnaires can be used for analysis, and the other 19 cannot be used because of the unfilled questionnaire.

Table 1  
*Number of respondents*

Region Office	Population	Number of samples	Number of respondents
Kota Samarahan	191	127	119
Betong	58	52	29
Total	249	179	148

This study was carried out using quantitative research methods where the participant answered the structured questions in a questionnaire. The questionnaire in this study is based on the research by Motoloni et al. (2017) as he conducted his research on the work performance of extension agents of MCB in Peninsular Malaysia in terms of technical skills, delivering skills, evaluating skills, leadership skills, decision-making skills, and social skills. In this research, measurement of performance extension agents is based on pruning technology, fertilization technology, pest and disease technology, and processing of cocoa beans technology. This study was conducted in Sarawak, where smallholders monopolized the cocoa industry. The data was collected with the help of the MCB officer. They helped gather all the participants in one place to collect the data successfully. The data collecting session was held in August 2017.

The collected data were analyzed descriptive statistics for the frequency and percentages of the respondents as age, educational level, race, income, clone, and cocoa planted area. The correlational analysis evaluated the relationship between ToT and HRD with work performance. The most contributing variables towards the work performance were determined using multiple regression analysis. This study analyzed all the data using Statistical Packages for Social Science (SPSS) version 22.0.

## **RESULT**

### **Respondent Profile**

Based on the findings, 89.1% of respondents were males, with 10.9% female respondents. The age of the respondents shows that 35.7% were over 61 years old, ages between 51 to 60 were 34.9%, 23 (17.8%) respondents were between 41–50 years old, 13 (10.1%) respondents were aged between 31–40 and 1.6% of respondents were less than 30. Also, 62.8% of farmers have less than RM1000 income, 34.1% realized income range between RM1000–RM1999, while 0.8% of farmers have income between RM2000–RM2999 and 1.6% have an income range of RM3000–RM3999 and 0.8% earned income of RM4000, respectively. About 53% of farmers were Iban, 43% were Malay, 10.1% were Bidayuh, and Chinese farmers were 3.1%. There were 58.1% of farmers cultivate cocoa on a full-time basis, while 41.9% of farmers cultivate cocoa part-time. Most farmers (97%) completed primary school, while 25% and 7% had only completed secondary school (25%) and certificate.

### **Farm Profile**

For years of planting, 75.2% within 2010–2006, 6.2% were 2005–2001, and 2.3% were at/before 2000. Of most farmers, 69% used less than three clones on their farms. 29.5% of farmers planted 3–5 clones/farm, and only 1.6% of farmers used more than five clones in their farmland. Data showed that most farmers 83.7% have 1–3 hectares of cocoa plantation, 15.5% of farmers have less than 1 hectare, and 0.8% of farmers have 3.1–5 hectares area.

### **Level of Extension Agents in Transfer of Technology (ToT) Skills, Human Resource Development (HRD) Skills, and Work Performance**

The level of ToT skills, HRD skills, and work performance can be measured based on the mean level. The mean level was divided into three categories; low, medium, and high, as referred to in the study by Hassan and Abdullah (2015) and Demba (2017). Range of mean between 1–2.669 category as low, 2.67–4.339, category as a medium, and 4.34–6 as high.

**Technical Skill.** This skill was evaluated by the cocoa farmers based on the ability and knowledge of extension agents in cocoa technology. 89.1% of farmers evaluated extension agents as having high technical skills, while the remaining farmers (10.9%) said that extension agents have moderate skills in cocoa technology. The mean and standard deviation of technical skill is  $M = 5.03$ ,  $SD = 0.541$  (Table 2). From the results, it means that extension agents of MCB had sufficient knowledge of technical skills of cocoa to be transferred to the farmers.

Table 2  
*Level of technical skill*

Level	Frequency	Percentage	Mean	Std. Deviation
Low (1–2.669)	0	0	5.03	0.541
Moderate (2.67–4.339)	14	10.9		
High (4.34–6)	115	89.1		

**Delivering Skill.** Cocoa farmers evaluate extension agents' ability to deliver the technology to them by showing the proper method of the cocoa technology. For technology delivering skill, 86% of farmers evaluated the extension as having high skill, 13.2% evaluated moderate skill, and 0.8% evaluated the low skill level. The mean and standard deviation of technology delivering skills is  $M = 4.99$ ,  $SD = 0.638$  (Table 3). Therefore, the competency of extension agents in delivering technology is high, which means the technology was successfully delivered to farmers.

Table 3  
*Level of technology delivering skill*

Level	Frequency	Percentage	Mean	Std. Deviation
Low (1–2.669)	1	0.8	4.99	0.638
Moderate (2.67–4.339)	17	13.2		
High (4.34–6)	111	86.0		

**Evaluating Skill.** Evaluating skills were evaluated to determine the ability of extension agents to evaluate farmers' understanding of the cocoa technology that has been transferred. Most of the farmers (84.5%) assessed those extension agents have a high level of skill in evaluating cocoa technology, and another 15.5% assessed that extension agents have a moderate level of skill. Technology evaluation skills' mean level and standard deviation

are  $M = 4.89$ ,  $SD = 0.545$  (Table 4). Data show that extension agents have high knowledge and skill in evaluating the effectiveness of the technology used by farmers.

Table 4  
*Level of technology evaluation skill*

Level	Frequency	Percentage	Mean	Std. Deviation
Low (1–2.669)	0	0	4.89	0.545
Moderate (2.67–4.339)	20	15.5		
High (4.34–6)	109	84.5		

**Leadership Skill.** Extension agents have a high level of leadership skills as evaluated by 80.6% of farmers, and another 19.4% evaluate extension agents as having moderate skills. The leadership skill’s mean level and standard deviation are  $M = 4.92$ ,  $SD = 0.658$  (Table 5). Therefore, the capabilities of extension agents to empower the farmers to become leaders in the local institutions are high as extension agents’ skills are high in leadership.

Table 5  
*Level of leadership skill*

Level	Frequency	Percentage	Mean	Std. Deviation
Low (1–2.669)	0	0	4.92	0.658
Moderate (2.67–4.339)	25	19.4		
High (4.34–6)	104	80.6		

**Help Decision Making Skill.** Data shows that the level of extension agents in help deciding is high, as evaluated by 89.1% of the farmers, and the remaining farmers, which are 10.9%, evaluate extension as a moderate skill. The mean level and standard deviation of help-making decision skills are  $M = 4.93$ ,  $SD = 0.585$  (Table 6). Skill in the decision-making of extension agents is high, as most respondents evaluated. It means that cocoa farmers can decide on their own with the help of extension agents.

Table 6

*Level of decision-making skill*

Level	Frequency	Percentage	Mean	Std. Deviation
Low (1–2.669)	0	0	4.93	0.585
Moderate (2.67–4.339)	14	10.9		
High (4.34–6)	115	89.1		

**Social Skill.** The last HRD sub-variable is a social skill. The result showed that 76.7% of respondents agree that extension agents have a high-level skill, 21.7% agree on moderate, and 1.6% say that extension agents have a low social skill level. The social skills' mean level and standard deviation are  $M = 4.73$ ,  $SD = 0.753$  (Table 7). About three-quarters of respondents agreed that extension agents involve their local festivals and unofficial invitations by the farmers.

Table 7

*Level of social skill*

Level	Frequency	Percentage	Mean	Std. Deviation
Low (1–2.669)	2	1.6	4.73	0.753
Moderate (2.67–4.339)	28	21.7		
High (4.34–6)	99	76.7		

**Work Performance.** The work performance of the extension agents was also evaluated by the respondents (farmers). Table 8 shows the level of work performance of extension agents where 87.6% of respondents evaluate extension agents of MCB as a high level of work performance, and the other 12.4% evaluate moderate skill. The mean and standard deviation for the work performance is  $M = 4.91$ ,  $SD = 0.649$ . From the results, the extension agents have improved the farmers' productivity, as the level of work performance evaluated is high.

Table 8

*Level of work performance*

Level	Frequency	Percentage	Mean	Std. Deviation
Low (1–2.669)	0	0	4.91	0.649
Moderate (2.67–4.339)	16	12.4		
High (4.34–6)	113	87.6		

The mean level of competency of extension agents in ToT and HRD is averagely high, and this result is supported by Motoloni et al. (2017). Therefore, it can be interpreted as extension agents of MCB have performed their task with broad knowledge and skills in technical skills, technology delivery skills, technology evaluation skills, leadership skills, decision-making skills, and social skills.

**Relationship of Transfer of Technology and Human Resource Development with Work Performance**

The Pearson correlation coefficient determined the relationship of extension agents’ ToT and HRD with work performance. The strength of the relationship is measured according to Guilford’s (1973) Rule of Thumb. Results showed a positive and strong relationship between ToT ( $r = 0.730$ ) and HRD ( $r = 0.842$ ) with work performance, as shown in Table 9. This result aligns with Sail (2010) and Motoloni et al. (2017), who indicated that ToT and HRD have a positive and strong relationship toward work performance.

Table 9  
*Relationship between ToT and HRD with work performance*

Variables	ToT	HRD	WP
ToT	1	.780	.730
HRD		1	.842
Work Performance			1

The relationship of sub-variables in ToT and HRD was also analyzed, and findings show that all the sub-variables have a positive relationship with work performed. The sub-variables that represent ToT are technical skills that have a strong and positive relationship ( $r = 0.748$ ), technology delivery skills that have a moderate and positive relationship ( $r = 0.689$ ), and technology evaluation skills moderate and positive relationship ( $r = 0.481$ ) (Table 10). Also, HRD variables; leadership skill has a moderate and positive relationship ( $r = 0.646$ ), decision making has a strong and positive relationship ( $r = 0.821$ ), and social skill has a strong and positive relationship ( $r = 0.792$ ) as tabulated in Table 10.

Table 10  
*Relationship between ToT and HRD skills with work performance*

Skills	X1	X2	X3	X4	X5	X6	Y
Technical skill (X1)	1	.749	.536	.672	.680	.629	.748
Delivering technology skill (X2)		1	.670	.710	.717	.578	.689
Evaluating technology skills (X3)			1	.509	.589	.447	.481
Leadership skill (X4)				1	.713	.603	.646
Help to make decision skills (X5)					1	.782	.821
Social skill (X6)						1	.792
Work performance (Y)							1

**Skills Contributed to The Performance of Extension Agents**

Regression analysis was conducted to determine which factors contribute to the work performance of the extension agents in MCB Sarawak based on the perception of productive cocoa farmers. Results show that three skills contributed to the work performance of MCB extension agents. The skills are significant as their p-value < 0.05. Therefore, decision-making skills, social skills, and technical skills are significant (Table 6). The analysis shows that the highest Beta values are the decision-making skills (0.389), followed by social skills (0.313) and technical skills (0.281), as in Table 11.

Table 11  
*Estimate coefficients for extension agents' performance model*

Variables	Unstandardized Coefficients		Standardized Coefficient	t	p-values
	B	Std. Error	Beta		
Technical skill	.337	.084	.281	4.014	.000
Delivering technology skill	.107	.081	.105	1.320	.189
Evaluating technology skill	-.107	.069	-.090	-1.538	.127
Leadership skill	-.037	.066	-.037	-.555	.580
Help to make decision skill	.432	.084	.389	4.616	.000
Social skill	.270	.060	.313	4.485	.000

Three skills that contribute to the work performance, technical skills, represent ToT, and the other two, decision-making skills and leadership skills, represent HRD. This result shows that HRD skills contributed more to MCB extension performance than ToT skills.

## DISCUSSION

The result of level skills of ToT and HRD are in line with previous research by Murni et al. (2019), Motoloni et al. (2017), and Sail (2010). The mean level of all skills is high as perceived by the extension agents. Transferring the technology to the farmers depends on the ability of extension agents with higher skills and knowledge to satisfy the cocoa farmers' needs (Varner, 2011). Olagunju et al. (2019) proved that ToT and HRD skills are important in developing the work performance of extension agents to perform their duty effectively.

The result of correlation analysis showed that all skills in ToT and HRD have a significant positive relationship with the work performance of extension agents. This result was in line with the research by Isah et al. (2019), Murni et al. (2019), and Motoloni et al. (2017). Help in decision-making skills has the strongest relationship with the work performance of MCB extension agents in Sarawak. Help in decision-making skills is a vital skill that extension agents need to possess as this skill will make extension agents more trustworthy by cocoa farmers for technology adoption. A study by Mariano et al. (2012), Asfaw et al. (2012), and Baloch and Thapa (2016) proved that agents that help farmers in making decisions increase the chances of new technology adoption by farmers. While help in decision-making skills has the strongest relationship with work performance, evaluating skills has the weakest relationship with the work performance of extension agent MCB in Sarawak. Evaluation skills of extension agents need to be improved as it is particularly important to determine the level of performance of extension agents (Lamn & Israel, 2011). Suvedi and Stoep (2016) proposed that agricultural organizations need to make investments to strengthen the evaluation skills of the extension agents and subsequently improve their work performance. Improving evaluation skills will aid future research by evaluating previous technology and programs to determine the improvement of the area in cocoa beans production for innovation to work on.

Two HRD skills (help in decision-making skills and social skills) and one ToT skill (technical skill) contribute to the work performance of extension agents MCB in Sarawak, which is significant at 0.05. The predictive power for the three skills is 0.772, which means that these three skills had about 77% of the variation in the work performance of extension agents. This result was in line with the research by Motoloni et al. (2017), with the same skills showing the contribution to the work performance of extension agents in Peninsular Malaysia. However, the study by Motoloni et al. (2017) showed that leadership skills contribute to the work performance of extension agents in Peninsular Malaysia, which was contrasted with the result in this research. It shows that extension agents of MCB in Sarawak lack leadership skills, and they need to attend a course on improving them. Moreover, delivery skills and evaluation skills are insignificant as the p-value is more than 0.05. Therefore, these three skills did not significantly contribute to the work performance of the extension agents. It might be due to a lack of exposure to proper delivery

methods technology and evaluation method of technology and programs. Therefore, MCB needs to invest in developing extension agents' ToT and HRD skills, as it will help them perform their tasks successfully. Producing cocoa beans can be improved by improving performance extension agents in transfer technology. Upon adopting new cocoa technology, cocoa farmers will seek help and knowledge from extension agents; therefore, extension agents need to have good skills in ToT and HRD for better work performance (Olagunju et al., 2019).

## CONCLUSION

This research aims to determine how extension agents improve their work performance in ToT and HRD among the cocoa farmers' community. This research studies relationship between ToT skills, HRD skills, and work performance of extension agent MCB in Sarawak based on the perception of cocoa farmers. The relationship between ToT skills (technical skill, delivery skill, and evaluating skill) and HRD skills (leadership skill, help in decision-making skills, and social skills) with work performance was evaluated, and all the skill shows a significant positive relationship with the work performance of extension agent MCB in Sarawak. Of all the six skills, help in decision-making skills, social skills, and technical skills of extension agent MCB in Sarawak has a significant contribution to the work performed.

The implication of this study is focusing on the importance of identifying skills in ToT and HRD that contributes to the work performance of extension agent MCB in Sarawak. This study provides insights on how important technical skills, delivering skills, evaluating skills, leadership skills, help decision-making skills, and social skills are in developing the performance of extension agents in transferring the technology to the cocoa farmers. This study will create awareness among extension agents to excel in ToT and HRD skills to ensure they disseminate the cocoa technology successfully. These six skills should be ingrained in training programs introduced by agriculture organizations, especially the Malaysian Cocoa Board, to ensure sustainable production of cocoa beans in the future. Most importantly, the empowerment of extension agents in all six skills needs to be enhanced by providing training programs introduced by agriculture organizations, especially the Malaysian Cocoa Board, to increase the production of cocoa beans. Research in the relationship between work performance and ToT skills in agriculture is common. However, research on the HRD skills of extension agents was not extensive. This research can be a revelation for other agriculture institutions to evaluate the performance of extension agents in ToT and HRD skills together.

Qualitative research can be conducted to find what other factors contribute to the work performance of extension agents from MCB in Sarawak. A comparison between the work performance of extension agents in Peninsular Malaysia and Sarawak also can be

conducted for future research. The limitation of this study emanated from the evaluation of the work performance of extension agents comes only from productive cocoa farmers. In future research, the study sample can be more diverse to represent the entire community of cocoa farmers.

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