

# Transfer Of Technology Skills, Human Resource Development Skills And Extension Agents' Work Performance: The Perceptions Of Cocoa Growers In Malaysia

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**Abstract:** The main goal of extension service is to transfer technology and develop clients' capacity and potentials to enhance their work performance. This study determines the relationship between technology transfer, human resource development and extension agents' work performance among cocoa growers in Malaysia. The study used stratified sampling method to select 668 productive cocoa growers who are exposed to extension activities facilitated by the extension agents' of Malaysian Cocoa Board (MCB) in the three (3) regions of Malaysia. The data were analyzed using descriptive statistics, correlation and regression analysis. Significant and positive correlation ( $p < 0.001$ ) existed between each variables and work performance. Regression analysis results showed that technology transfer skills (technical skill, technology delivery skill) and human resource development skills (leadership skill, decision making support skill and social skill) are significant ( $p < 0.05$ ). The  $R^2$  value of 0.602 indicates that all the predictors explain about 60.2% of the variation in extension agents' work performance. The highest contribution is attributed by decision making support skill ( $\beta = 0.215$ ). The study recommended training programmes for extension agents that will focus on technology transfer and human resource development skills, especially technology evaluation skill. Also, Malaysian Cocoa Board and other agricultural extension service agencies should give more attention to delivering consistent technology and human resource development initiatives relevant to the need of farmers and the extension agents by addressing identified skills and knowledge gaps for a continuous performance improvement in their work.

**Index Terms:** cocoa growers, extension agents, human resource development, technology transfer, Work performance

## 1. INTRODUCTION

Malaysia is among the top grinding cocoa countries falling into the 5<sup>th</sup> position globally and also occupies number one position in the whole continent of Asia [1] (Tothmihaly, 2017). Presently, the local cocoa production capacity has reduced drastically to the extent that they cannot sustain the grinding sector and this has resulted to the imbalance between the upstream and the downstream sector [2] (Ramle, 2012). However, the development of the cocoa upstream activities is not keeping pace with the downstream industry by depending on imported cocoa beans to meet the needs of the processing industry [2] (Ramle et al, 2012). This situation arises as cocoa becomes least favourable crop among farmers due to factors such as price of cocoa beans, pest and disease and labour constraints [3] (Lee, 2013), both the plantation sector and smallholder decided to abandon cocoa production for other more profitable crops like oil palm and pepper [4] (Fadzim et al., 2017). This setback has resulted to yearly decline of cocoa production in the country. Meanwhile despite the level of the decline, the grinding sector on downstream shows increasing trends. Therefore, in order to sustain the downstream sector,

The upstream needs to be improved to curtail the problems identified [5,6] (Arshad, 2015; MCB, 2018). The MCB extension agents are responsible for transferring cocoa technology to the farmers in which the processes involved in technology transfer and human resource development will go a long way to ascertain the level of the extension agents' performance in addition to influencing the cocoa farmers to increase their level of production [2,7] (Ramle, 2012; Motolani et al., 2017). However, the farmers are also responsible for technology acceptance and the application of the technology in the right way in which without a good relationship between extension agents and farmers, the technology transferred will not meet desired expectation [8] (Hassan et al., 2017). Extension agents function is to change the level of decrease in farm production with the aid of technology transfer and findings from research institutes; to cause change in the attitude of the farmers so as to respond to innovations and to be actively involved in the development of agriculture; and agricultural sectors' contribution to national economy by way of promoting the development of specific crops [9] (Mohd Samsudin, 2012). However, it was earlier reported by [10] Sail (2008) that the accomplishment of any extension programmes relies on the responsibility of extension agents to transfer technology with the required skills and knowledge in enhancing farmers' capability to increase production. In addition, [11] Shah et al. (2013) revealed that Malaysian agricultural extension service was perceived to be insufficient in developing agriculture on account of concentrating attention on the role of technology transfer with little attention given to developing human capital. This has created a gap between technology transfer, human resource development and work performance of the extension agents. With the objective of enhancing performance of the extension agents', both technology transfer and human resource development need to be connected by means of functional and effective HRD efforts so as to promote the sharing of technology among farmers to

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improve their standard of living and sustainable production. Consequently, extension agents low performance in technology transfer and human resource development has been attributed to problems of poor skills and inadequacies in professional competencies needed to skillfully perform the work assigned to them [12] (Saleh & Man, 2017). It is not common to find research that focuses on specific skills needed by extension agents' in technology transfer and how they were used in delivering extension services in order to promote the growth of rural development and increase agricultural productivity [13] (Issahaku, 2014). Thus, this study examined perceptions of cocoa growers in Malaysia on the relationship between technology transfer skills, human resource development skills and extension agents' work performance. Specifically, the objectives to be achieved are as follows:

1. To determine the levels of extension agents' technology transfer skills, human resource development skills and work performance as perceived by cocoa growers.
2. To determine the relationship between technology transfer skills, human resource development skills and work performance of extension agents.
3. To identify the most important factors contributing to work performance of the extension agents as perceived by cocoa growers.

Six hypotheses were developed based on our literature reviews on transfer of technology skills, human resource development skills and work performance trends in Malaysia at the point of the study. The following research hypotheses were tested with regard to the relationship between technology transfer skills, human resource development skills, and work performance as perceived by cocoa growers:

*H1: There is significant relationship between technical skill and extension agents work performance as perceived by cocoa growers in Malaysia.*

*H2: There is significant relationship between technology delivery skill and extension agents work performance as perceived by cocoa growers in Malaysia.*

*H3: There is significant relationship between technology evaluation skill and extension agents work performance as perceived by cocoa growers in Malaysia.*

*H4: There is significant relationship between leadership skill and extension agents work performance as perceived by cocoa growers in Malaysia.*

*H5: There is significant relationship between decision making support skill and extension agents work performance as perceived by cocoa growers in Malaysia.*

*H6: There is significant relationship between social skill and extension agents work performance as perceived by cocoa growers in Malaysia.*

## 2 LITERATURE REVIEW

The effectiveness of extension agents in enhancing clients' performance is directly associated to how familiar they are with their clients' context and issues. Some scholars have raised some sensitive questions as to how the extension

agents serve their clients, whether they listen and have a very good relationship with them [14] (Suvedi & Ghimire, 2015). These and many more were some of the concerns of the previous scholars. However, despite many observations, poor skills and inadequacies in professional competencies has been attributed to low level performance of the extension agents in technology transfer [12] (Saleh & Man 2017). [15] Zwane (2014) study on extension professional role in South Africa emphasized that to make extension officers more effective and to better serve their clients; they need to have special knowledge by demonstrating professionalism being skillful, knowledgeable and able to evaluate the context and issues affecting their clients' so that they can benefit maximally from their services. Stressing the importance of professionalism, professionalism has become the reality, and staff members who practice professionalism keep themselves abreast of current knowledge and skills which are the essential core competencies that extension professionals needed to complement each other very well [16] (Mulder, 2014). Several scholars have studied the influence of various extension workers' competencies on their work performance in developing countries. [13] Issahaku (2014) research conducted in Ghana showed interpersonal relations, communication, personal qualities and technical skill as having more influence on work performance in most competency framework and competency-related literature. [17] Tiraeyari et al. (2010) assessed competencies needed by Malaysian extension workers in good agricultural practices (GAPs), they found social, cultural, programme evaluation as contributors to workers' performance and that they were not much involved in human resource development aspect of their job such as leadership development which otherwise affected their level of performance. Similarly, [18] Wasihun et al. (2013) conducted a study among extension agents in Ethiopia and found out that their competencies in the technical aspect of their job were low and this reflected on the level of their performance among farmers. In addition, a number of literatures have reported a strong relationship between extension agents' performance and their ability to perform human resource development activities among their clients [14] (Suvedi & Ghimire, 2015). [19] Chae et al. (2014) found that extension agent' skills such as research and analytical skills, interpersonal skills, strategic instruction and client ability to take a decisive decision contributed positively to extension agents' performance. Also, [20] Khalil (2009) earlier reported programme planning, implementation and evaluation competencies as significant predictors of work performance. From previous attention on the importance of technical knowledge and skills, it was earlier confirmed that when technical and non-technical skills of extension agents are combined, their services become more effective [21] (Vandenberg & Foerster, 2008). Conclusively, [22] Varner (2011) has revealed large body of literature about extension workers based in United State of America and the areas of competencies needed to enhance their work performance. He found out that community and social action processes, information and education delivery, interpersonal relations, leadership and professionalism contributed to a great extent the work performance of the extension agents. Meanwhile programme evaluation has received a lot of attention as important skill needed to be acquired in both developing and developed countries to enhance extension agents' work performance [23,14] (Namdar et al., 2010; Suvedi & Ghimire, 2015).

## 2.1 Technical Skill and Work Performance

Technical skill is the ability a person has in carrying out a specific activity. Before one can be able to do this, there is a need for technical knowledge and skill about the processes involved, methods and a set sequence of steps intended to achieve result. This is absolutely necessary for frontline officers as they need to be taught by their supervisors on how to carry out different tasks given to them through training and clarifying doubts in work related problems [24] (Jaya, 2016). Some researchers found technical skill to be related and predict work performance of an extension agent [25] (Sail, 2010). Similarly, [7] Motolani et al. (2017) identified technical skill as having relationship to work performance and at the same time a good predictor of extension agents work performance. However, [26] Khan (2017) has identified existence of gap between possessing technical skill and the potentials for smooth performance of their responsibilities.  $H_{a1}$ : There is significant relationship between technical skill and extension agents work performance among cocoa growers in Malaysia.

## 2.2 Technology Delivery Skill and Work Performance

One of the main challenges facing the researchers as far as today's agricultural development is concerned is the questions on the failure of smallholder farmer's non-adoption of innovations and technologies designed for improvement in agricultural activities and lives of the farmers? Different point of views has been considered individually in explaining the problem emanated from one technology to the other, but not many assessments were considered on the actions and activities of agricultural extension services on technology delivery mechanism to the farmers in addressing the problem [27] (Odhong, 2017). Agricultural technology can be formed into a planned structure and transfer through different forms. The forms of delivery can contribute to productivity differentiated by changing the magnitude of technology transfer to the clients and increasing their knowledge on how to improve the information flow from farmers to scientist [28] (Alhassan, 2013). However, result of research conducted by [29] Demenongu et al. (2015), indicated that failure linked to extension performance are due to inability of the extension workers to deal with delivery concerns. They established that the effectiveness of extension agents in the area of communication with farmers, because of their deficiencies in the training related to the scientific principles and skills of communication and noted that, to effectively serve their clients, they must be effective in communication and as agents of development. [18] Wasihun et al. (2013) and [30] Maoba (2016) suggested that extension service should have strong delivery mechanism that would lead towards increase participation of farmers and restore confidences in extension activities since every success of extension programmes is a reflection of the roles played by farmers in the programme. Similarly, findings of the study conducted by [31] Ayansina and Adeogun (2017) also recommended a very strong delivery and communication skills as this serves as fundamental principle or practice of extension professionals to communicate needed technologies effectively with the farmers and stakeholders.  $H_{a2}$ : There is significant relationship between technology delivery skill and extension agents work performance among cocoa growers in Malaysia.

## 2.3 Technology Evaluation Skill and Work Performance

The importance of evaluation has long been recognized, but there have been some important shifts in the understanding of its function and significance in the global context [32] (Martin et al., 2011). In advocating for technology evaluation skill, firstly, to understand what evaluation means is very important. Evaluation is characterized by order and planning with an objective to assess a completed or an on-going programme, project, or policy, its design, implementation and results [33] (Christoplos et al., 2012). According to [34] Suvedi and Stoep (2016), evaluation is both an art and a science. The art of evaluation involves identifying purposes and audiences, creating appropriate designs, and interpreting data about a programme or policy. While on the other hand, the science of evaluation involves systematically gathering and analyzing evidence about the outcomes and impacts. However, to improve the performance of the extension agents, [35] Lamm and Israel (2011) call to mind that emphasis should be laid on developing evaluation skill of different professional involved in agricultural extension activities which is very important to determine their level of performance. In similar way, [34] Suvedi and Stoep (2016) recommended that immediate investment are needed to upgrade and strengthen applied research and evaluation skills of mid-level officers who supervise front-line extension officers to mentor and train them in order to gain evaluation skills and subsequently include evaluation into their programme for capacity building to their enhance performance.  $H_{a3}$ : There is significant relationship between technology evaluation skill and extension agents work performance among cocoa growers in Malaysia.

## 2.4 Leadership Skill and Work Performance

The concept of leadership as it is relate to agricultural extension calls for action and is strategically important since it has to do with influencing and developing group of farmers in the community, by which extension agents can be seen as someone who has leadership capability to bring innovation, change and development not only to the farmers but also to the resources within the community [36] (Gravina, 2013). At this point in time, the similarity between extension agents' leadership role and farmers demands the display of relevant skills to carry out their function diverse groups of rural dwellers [37] (Karami & Ismail, 2014). The importance of leadership skills has been generally agreed upon to explain both employee and organizational performance in different employment sectors [20] (Khalil, 2009). The ability of extension leaders determines to great extent the success of an extension services organization. Extension workers should have understanding of the importance of farmers in achieving the goals of the extension services, while motivation and encouragement of those farmers will be very crucial to achieve the organization goals. It is commonly accepted that for any organization to be effective, there is need for an effective leadership and that attempt to neglect this aspect will lead to poor performance of the organizational [38,39] (Okwoche & Asogwa, 2012; Luvanda, 2015). In addition, it is broadly acknowledged, for an individual to be effective its leadership quality and approach is a determinant. The behaviour exhibit by a leader will positively affect their outcomes in terms of effectiveness and efficiency and at same time make it easier to know the feeling that accompanies an unsatisfied state of the followers which may affect effective performance [40] (Tham-Agyekum, 2016).  $H_{a4}$ : There is significant relationship between

leadership skill and extension agents work performance among cocoa growers in Malaysia.

### 2.5 Decision-making Support Skill and Work Performance

Workers are employed by their employers to be able to solve problems and make effective decisions when the need arises, but employees often do not have skills that meet employers' expectation [17] (Tiraieyari et al, 2010). [41] Olcum and Titrek (2015) stated that decision has to do with the result of a composite social process and cannot just be an easy and unitary event but take a longer period of time. They opined that taking decision can be characterized by active factors that begin with identifying motivation for action, and end with an interest to take a specific action of commitment. [42] Al-Tarawneh (2012) defined decision as a continuing process of weighing different option attached a particular goal which usually comes about if there is available solution to be implemented. While on the other hand defined decision making as the process of recognizing and making a selection from a number of alternative solutions to a problem based on available situation. Moreover, understanding decision making skills is of great significance as it is evidence in research that good decision making skills are related to superior performance [43] (Stephoe-Warren et al., 2011). Nevertheless, they emphasized the importance of identifying such decision making skill by arguing that to know why an organization is doing what they are doing and why they are performing on the other way, those who represented the decision makers and the skills they have should be studied. Consequently, [44] Al-Zahrani et al. (2016) suggested that agricultural extension needs to be analyzed and redesigned to provide quality agricultural extension education and capacity-building programmes that will improve skills of extension agents to help them create decision making environments for farmers to have an improved productivity and performance. Therefore, active and greater participation and development of farmers in decision making leads to better results as this will encourage farmers to decide on what they needs, demand and get programmes they consider suitable for them [45] (Suvedi & Kaplowitz, 2016). Furthermore, Result of study conducted by [46] Das and Borua (2017) indicated that for extension agents to maintain favourable decision making pattern, there is need for more training. Finally, maximum effects would likely occur as this study will offer a promise that decision making skills are indeed able to bring change into the ability of the extension agents to enhance the decision making skills of the farmers. H<sub>a5</sub>: There is significant relationship between decision making support skill and extension agents work performance among cocoa growers in Malaysia.

### 2.6 Social Skill and Work Performance

A greater part of different occupations involve the use of social skill, which may be in terms of working with the public, coworkers or a particular set of clients. Social skills have always been important in the work place as individual require raising their frequency of skillful interaction with others in order to accomplish their task [17] (Tiraieyari et al, 2010). [47] Hochwarter et al. (2006) revealed that social skill has been very important to organizations in that they are now using more team based arrangement as well as employed more service-oriented jobs. Generally, it was reported that people with strong social skill have high performance rating having experience positive social interactions with people [48] (Wu,

2008). Lately, a theory was constructed about social skill being a moderator that enhances people's performance [49] (Beheshtifar & Norozy, 2013). [50] Okumura and Usui (2014) earlier confirmed that social skill moderated the relationship between conscientiousness and work performance in such that the relationship was stronger for individuals with higher social skill. In the research conducted by [7] Motolani et al. (2017), result of the study showed high positive correlation between social skill abilities of the extension agents and their performance. The findings of this study also pointed out among all individual variables, social skill is the strongest contributor in explaining the extension agents' performance. H<sub>a6</sub>: There is significant relationship between social skill and extension agents work performance among cocoa growers in Malaysia.

## 3 METHODOLOGY

This study adopted and used stratified sampling method to select sample 668 productive cocoa growers in the three region of Malaysia. In the first stage, cocoa cultivation was stratified into three (3) existing regions that make up of the whole country and further stratified the regions into nine (9) MCB Management location offices. Using this approach will ascertain each one cases from the stratum is adequately represented in the sample. For this study, the MCB management location office represents the stratum. A quantitative research design was carried out through survey questionnaires and interviews. Questionnaires were designed to evaluate cocoa growers' perceptions regarding transfer of technology skills and human resource development skill dimensions and work performance. In analyzing cocoa growers perceptions on transfer of technology skills and human resource development skills dimensions, questions on the usage of technical skill, technology evaluation skill, technology delivery skill, leadership skill, decision making support skill and social skill were designed based on [25,51,7] Sail (2010), Saikia et al. (2013) and Motolani et al. (2017). The Pearson correlation analysis was conducted to determine the relationships between technology transfer skills, human resource development skills, and work performance. According to [52] Moore (2015), the primary importance of skills in technology transfer and human resource development arises from its influence on the perception of the extension agent, who believed that skills are a causative factor in their perception that is reflected in their performance at work. Similarly, [53,13,19] (Hoffman, 2014; Issahaku, 2014; Chae et al., 2014) stated that perception levels of skills in technology transfer and human resource development are associated with positive results in organizational such as work performance.

## 4 RESULTS AND DISCUSSION

### 4.1 Respondent Demographic Profile

The demographic profile of the respondents is shown in Table 1 In this study, respondent demographics were described in terms age, gender, race, monthly income, focus of work and education level. A total of 668 respondents participated in this research, findings from the study indicated that 47.9% of the farmers are above 61 years' old which revealed highest numbers of the farmers involved in cocoa farming are older than 61 years of age. The study found that majority 87.1% were males with Malay race (33.8%) being involved more in cocoa production than other races in Malaysia. More so, 50%

realized less than RM1,000 in a month and more than half of the respondents (67.8%) undertake cocoa farming as a part time job. The descriptive analysis of educational level of the respondents indicated that 71.9% had only completed primary education, 23.8% completed secondary education and only 3.3%, .6% and .4% had Certificate, Diploma and Bachelor/Degree respectively.

**TABLE 1 FARMERS DEMOGRAPHIC PROFILE**

Variables	Frequency (n = 668)	Percentage
Farmers Age		
≤30	16	2.4
31-40	50	7.5
41-50	100	15.0
51-60	182	27.2
≥61	320	47.9
Gender		
Male	582	87.1
Female	86	12.9
Race		
Malay	226	33.8
Chinese	62	9.3
Indian	1	.1
Orange Asli	131	19.6
Kadazan	126	18.9
Murut	16	2.4
Bajau	1	.1
Iban	69	10.3
Bidayuh	9	1.3
Others	27	4.0
Monthly Income		
<RM1000	334	50.0
RM1000-RM1999	248	27.1
RM2000-2999	59	8.8
RM3000-3999	21	3.1
≥4000	6	.9
Focus of Work		
Full Time	215	32.2
Part Time	453	67.8
Educational Levels		
Complete Primary School	480	71.9
Complete Secondary School	159	23.8
Certificate	22	3.3
Diploma	4	.6
Bachelor/Degree	3	.4

#### 4.2 Correlation Analysis

Pearson's correlation coefficient is used to determine the relationship between independent and dependent variables. Pearson Correlation was conducted between the overall mean scores of work performance with transfer of technology skill and human resource development skill dimensions.

**TABLE 2 RESULTS OF PEARSON CORRELATION ANALYSIS**

Variables	r	p
Technical skill	0.677	0.000
Technology delivery skill	0.651	0.000
Technology evaluation skill	0.618	0.000
Leadership skill	0.660	0.000
Decision making support skill	0.683	0.000
Social skill	0.662	0.000

\*\*Correlation is Significant at the 0.01 Level

The relationships of the six skills (technical, technology delivery, technology evaluation, leadership, decision making support and social) influencing work performance were determined using Pearson correlation coefficients. Exploratory analysis was carried out to ensure that assumptions of normality and linearity were not violated. The result of the correlation analysis showed that all factors were significantly correlated. As indicated in Table 2, the strongest linear relationship was found between decision making support skill and work performance ( $r = .683$ ;  $p < .001$ ). The result also showed positive and significant correlations between technical skill and work performance ( $r = .677$ ;  $p < .001$ ), social skill and work performance ( $r = .662$ ;  $p < .001$ ), leadership skill and work performance ( $r = .660$ ;  $p < .001$ ), technology delivery skill and work performance ( $r = .651$ ;  $p < .001$ ) and between technology evaluation skill and work performance ( $r = .618$ ;  $p < .001$ ). These results indicated that hypotheses H1, H2, H3, H4, H5 and H6 were supported and reject null hypothesis.

#### 4.3 Multiple Regression Analysis

Multiple regression analysis technique was used to measure the degree to which each of the independent variable explains or predicts the value of the dependent variable. Generally, multiple regression analysis is used to test the effect and determine the relationship between several independent variables (technical skill, technology delivery skill, technology evaluation skill, leadership skill, decision making support skill and social skill) and a dependent variable (work performance). The multiple regression equation for work performance is as follows:

$$Y = b_0 + b_1(X_1) + b_2(X_2) + b_3(X_3) + b_4(X_4) + b_5(X_5) + \dots + b_n(X_n) + e$$

Where:

- Y = Work performance
- $b_0$  = Constant
- $b_{1-6}$  = Estimates (Regression coefficients)
- $X_1$  = Technical skill
- $X_2$  = Technology delivery skill
- $X_3$  = Technology evaluation skill
- $X_4$  = Leadership skill
- $X_5$  = Decision making support skill
- $X_6$  = Social skill
- $\epsilon$  = Error

**TABLE 3 COEFFICIENT RESULT OF MULTIPLE REGRESSION**

Variables	b	Beta	t	p
Constant	.579		4.377	.000
Technical skill (X1)	.203	.201	4.455	.000*
Technology delivery skill (X2)	.108	.112	2.583	.010*
Technology evaluation skill (X3)	.035	.036	.872	.384
Leadership skill (X4)	.118	.127	3.062	.002*
Decision making support skill (X5)	.218	.215	5.339	.000*
Social skill (X6)	.196	.212	5.598	.000*

Significant; \* $p < .05$ ,  $R = 0.776$ ,  $R^2 = 0.602$ ,  $Adj.R^2 = 0.598$ , Std. Error of the Estimate = 0.40817

In order to identify effect of the skills to work performance, Table 3 presents the result of the regression analysis and was based on the contribution of all independent variables to work performance. Five independent variables were supported and statistically significant; Decision making support skill ( $\beta = .215$ ;  $p = .000$ ), social skill ( $\beta = .212$ ;  $p = .000$ ), technical skill ( $\beta = .201$ ;  $p < .000$ ), leadership skill ( $\beta = .127$ ;  $p = .002$ ) and technology delivery skill ( $\beta = .112$ ;  $p = .010$ ). H1, H2, H4, H5 and H6 were supported and reject null hypothesis as they were positive and significantly contributed to work performance. Meanwhile, Technology evaluation skill is not significant to extension agents work performance among cocoa growers in Malaysia. The regression model output as shown in Table 1.3 ( $\beta = .036$ ;  $p = .384$ ) did not support the hypothesis. The standardized coefficients indicated that technology evaluation skill has not significantly contributed to work performance among cocoa growers in Malaysia, hence the study fail to reject null hypothesis. The summary statistics of the regression analysis show the variables for which the coefficients are statistically significant with  $R^2$  of .602. The work performances were attributed to the five skills with a combined contribution of 60.2% to variance of work performance.

#### 4.4 Discussion

The above result was supported by [25] Sail (2010) study, he reported that extension agents needs to be equipped with knowledge and skills in human resource development through regular training programmes as this will enhance effectiveness for higher performance in their work. [54] Mengal and Habib (2016) opined that unproductive human resource development activities within organizations would not only affect the extension agent working pattern and practice but also responsible to delay in their operational process and impede performance. According to [38,37] Luvanda (2015); Okwoche and Asogwa (2012), they reported that for any organization to be effective, there is need for an effective leadership, the neglect of leadership aspect and approach will lead to poor performance of individual and organizational performance. Furthermore, there is a general belief that for any set of people or group to be effective, the quality and approach of their leaders matter most. This was confirmed by [39] Tham-Agyekum (2016) that the exhibited behaviour of any leader goes a long way to positively affect their outcomes in an effective and efficient manner as well as facilitates the desires of the followers that results to effective performance. The findings of the relationship between technology transfer skills, human resource development skills and work performance indicate that the correlation coefficient is positively related.

Summarily, among technology transfer skills and human resource development skills, decision making support skill had the strongest relationship with extension agents work performance while technology evaluation skill had the weakest relationship to extension agents work performance. This confirmed the study of [55] Bernet et al. (2001), they found that decision making is a critical aspect of agricultural extension services that requires both extension agents and farmers to be involved, as it enhance the level of technology adoption in the direction of relevant production systems. Also, the findings supported [34] Lamm and Israel (2011) statement which suggested that there should be an increased emphasis on evaluation skill development of extension professionals which is very important to determine their level of performance. In similar way, [33] Suvedi and Stoep (2016) recommended that immediate investment are needed to upgrade and strengthen applied research and evaluation skills of mid-level officers who supervise front-line extension officers to mentor and train them in order to gain evaluation skills and subsequently include evaluation into their programme for capacity building to enhance their performance. Two technology transfer skills (technical skill and technology delivery skill) and three human resource development skills (leadership skill, decision making support skill and social skill) have predictive power of 0.598 which is significant at 0.05. Therefore the five skills are able to predict the outcomes of extension agents work performance with decision making support skill having the strongest effects on extension agents work performance. This is in line with the study conducted by [43] Al-Zahrani et al. (2016), they reported that decision making support skill is the most effective skills that influence the performance of extension agents as it strengthened the agricultural extension service and help farmers to make sustainable production practices decisions on their farms. On the other hand, an estimated regression coefficient for technology evaluation skill is not significant. This might be due to possibility that extension agents are relatively less involved in this aspect of work. For instance, evaluation skill is seldom emphasized in the daily routines of their work, it means technology evaluation is done at the management level and is not within the jurisdiction of the frontline extension agents.

#### 5 LIMITATION, POLICY IMPLICATION AND CONCLUSION

The limitation of this study emanated from the usage of sample meant to be representative of whole population. Even though there is positive relationship between dependent and independent variables, work performance variance of 60.2% give explanation of five significant independent variables. The used of productive cocoa growers also serves as limitation in this study due to the fact that it may not be a representative sample of other cocoa farmers which are not involved in extension agents facilitated programmes. There is need for more diverse samples for future research. The implication of the findings from this study is focusing on the need to integrate identifying skills that contributes to work performance into extension activities to improve the skills of extension agents on technology transfer and human resource development among cocoa growers. Many of the cocoa related technology transferred by the extension agents lack required skills and knowledge for effective delivery. Given the importance of the required skills for technology transfer as well as capacity and potential development of the cocoa growers, these six skills

should be entrenched in training programmes introduced by agricultural extension service agencies in Malaysia, most especially Malaysian Cocoa Board for enhance sustainable cocoa production. This study aimed to find out how extension agents could identify the opportunities and threats for further improvement of their performance in technology transfer and human resource development among cocoa growers. It measure technology transfer and human resource development skills and assessed it effects on work performance of extension agents towards cocoa production as perceived by cocoa growers. The relationship among the six dimensions of ToT and HRD skills, namely, technical skill, technology delivery skill, technology evaluation skill, leadership skill, decision making support skill and social skill with work performance were tested and the results obtained show that all six dimensions had significant and positive relationship with work performance. Of the six, the result indicates that decision making support skill was the most important predictor of work performance, followed by social skill, technical skill, leadership skill and technology delivery skill. More importantly, extension agents should be empowered to solve farmers' problems in order to increase cocoa production in the country. By having all of these recommendations being implemented, it is hoped that the productivity of the country's cocoa yield can be increased exponentially.

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