



STUDY OF SITUATIONAL THEORY OF PROBLEM SOLVING (STOPS) IN CONCEPTUALIZING FARMER'S RESPONSE TOWARDS INSUFFICIENT INFORMATION DELIVERY IN MALAYSIA

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ABSTRACT

Purpose: Insufficiency of information delivery within agricultural extension services (AES) is a worldwide concern and been recognized as unresolved debate. This issue triggered AES on governance structure demand upward communication to encourage more input at farm level to allow farmers to make a decision and improve their ability to problem-solving.

Methodology: Taking a communication perspectives, the Situational Theory of Problem Solving (STOPS) was used on Malaysian farmers to investigate their response towards insufficient of information delivery. This research includes review the literature on the issue, the theoretical arguments of STOPS and finally to test the items for the measurement of farmers' response in this problem and identified items for future study. Items were tested through a survey distributed to 110 respondents. The exploratory data analysis was performed using principal components with varimax rotation to assess the performance of each items in measuring their respective variables. Study only retained items that loaded on the variables at .50 cut off criterion, and the Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, KMO more than .50

Findings: Result of analysis found the items fell into factor groups as suggested by theory and finalized with 58 items of measurement for future study.

Practical implications: These results offer initial guidance into the relevance of STOPS on farmers response in problem-solving towards insufficient of information delivery within AES and how they react to issues that affect them.

Social Implications: The investigation of STOPS on sample in the local context of public would provide a deeper understanding of farmers in Malaysia on their dimensions of conceptual of situational perception, communicative behavior and motivation in problem-solving towards insufficient of information delivery.

Research Limitation: Evaluation of Malaysian farmer's perception and communicative action is limited to the theoretical proposition of STOPS.

Originality Value: Study unleashed farmers response in problem-solving capacity towards insufficient of information delivery which have not been fully addressed through the assumption and concept of STOPS.

Keywords: *Situational Theory of Problem Solving (STOPS); Insufficient of Information Delivery; Agricultural Extension Service (AES); Farmers*

INTRODUCTION

Insufficient of information delivery within agricultural extension services (AES) is a worldwide concern and been recognized as an unresolved debate. This triggered the public extension services toward reform mainly on structural governance such as decentralization and privatisation which not only concentrate on technology transfer but towards a wider scope of human and social capital aspect ([Kidanemariam, 2015](#)) on how to meet the need of farmers in terms of agricultural and technologies information and farmers as problem solvers ([Rogers, 2003](#)) towards situational issue. These changes responses to local and world level researchers concerning public AES in developing countries situational problem related to insufficient of information delivery ([Mittal & Mehar, 2012](#)) which lead to lack of updated agricultural information and reliable services ([Babu, Huang, Venkatesh, & Zhag, 2015](#))

Malaysia experienced the same situation where farmers are hindered from receiving latest information and technology regarding paddy cultivation. Considering farmers are the main force of the industry ([Mohd Rashid & Mohd Dainuri, 2013](#)),

they often relied on sufficient information as means to produce high productivity to deal with security agenda and improve their standard of life ([Muhammad Asif & Mumtaz, 2013](#)). However, it also noted the Malaysia current AES has not moved parallel with the needs of information and technology at farm level ([Bala Alias, Fartimah, Noh, & Hadi, 2014](#)) as it is still focusing on delivering information and diffusion of innovation and technology which less approach is given to human capital aspect (Wisam Yako & Norsida, 2016). These arguments been established from years ago, where AES has generally not been able to formulate the for farmers' behavior on this issue, for two reasons, first AES lacks communication effort to find out on farmers' actual perceptions on actual situation, and second countries AES seldom asked for farmers' opinions.

Realizing that attention to farmers-oriented perspectives is needed for the success of AES, this future study seeks to evaluate the Malaysian's farmers response towards insufficient of information delivery within AES field. This study draws upon [Kim-J.N and Grunig \(2011\)](#) Situational Problem Solving as the framework to answer the question is how the farmer's response to this problem is affecting their reaction to the measure to cope with the issue particularly in AES. Further, the examination of STOPS in the multi racial country but majority Muslim like Malaysia will further test its general utility in explaining people's at local context. Therefore, it is essential for researchers in other parts of the world like in Asia (East) to explore STOPS where cultural factors suggested as a sign towards the behavior of the public's ([Turpin,2013](#))

INSUFFICIENT OF INFORMATION DELIVERY IN AES

Information is an essential in the practice of farming, and it is the basis of extension service and having access to the right information at the right time in the right format and from the right source will determine between success and failure of the farmers. Researchers discovered reliable, timely and relevant information is essential for farmers to adopt agriculture technology, ([Ansari & Sunetha, 2014](#)) and facilitate poverty alleviation ([Enwelu, Asogwa, Nwalieji, & Ezeano, 2014](#)). However, the research found that farmers often not receive sufficient information which matches their information needs and farming strategies ([Babu & Joshi, 2014](#)). This problem consistently happened as scholars already identified that sufficient of information are not successful because they are completely ignoring farmers perspectives ([Baig, Shayaa Al-Shay, & Straquadine, 2012](#)). In other words, farmers' response towards information needs has always been neglected that have caused the problem of insufficient of information delivery in AES.

In Malaysia, although the government has rendered many efforts and initiatives, Malaysia's rice production is still inefficient regarding cost and production ([Fahmi, Abu Samah, & Abdullah, 2013](#)) and resulted in low rice production due to farmers lack updated information especially on current farming technology. This holds true when studies found agriculture in Malaysia has been employed the technology from developed countries such as from Japan and Taiwan. However, the information on technical system and technology failed to reach farmers as they are not exposed and received to the necessary information ([Hanis Diyana, Nor Erlissa, Muhammad Khairulnizam, & Nor Zaina Zaharah, 2015](#)). We can say here; this situation has caused paddy farmers received insufficient information and knowledge on agriculture technologies which hindered farmers to update their knowledge that leads to delays in adapting and receiving latest agriculture information and practices ([Shahrina, Noor, & Saad, 2014](#)). This worsens the situation especially when farmers were not consulted in the process of identifying relevant information for their cultivation needs.

Thus, Cazila, Florain, and Marvin (2010) pointed out that AES and farmers need to increase their communication as they found most farmers indicated that they received insufficient information or training from the AES which led them gained information from other sources. This requires communication for an interactive process in which information, knowledge, and skills, relevant for development are exchanged between farmers, extension services, information providers and research either personally or through mass media, print and more recently the new information and communication technologies (ICTs) ([Del Castello & Braun, 2006](#)). For that reason, Malaysian paddy farmers have to identify and connect to AES problem such insufficient of information delivery so as to make them realize about the problem that affecting their information behavior and subsequently their life and cultivation activities. Therefore new approach emphasized that AES had to engage farmers in two ways collaboration to better problem solving towards insufficient of information delivery are deemed crucial ([Faure, Desjeux, & Gasselin, 2014](#))

AGRICULTURAL EXTENSION SERVICES (AES)

Agricultural Extension Services (AES) defined as getting useful and relevant information to farmers who ultimately to improve productivity ([Rahim, 2008](#)). However, the impact of AES to help farmers to increase agricultural production has been long argued by a scholar like ([Feder, Birner, & Anderson, 2011](#)). This shows that in the past, even until to date AES of the related countries have not been able to make a positive contribution to productivity due to insufficient in the information content, delivery, and access to services are still persistent in AES. Scholars identified this problem due to the failure of

training and visit (T&V) extension model, the world bank introduced the early 1970s, as public AES again incapable of curbing with reducing financial commitment from government and because its experimented a pure top down communication action process which information was sent still without consulting and gathering input from farmers ([Babu & Joshi, 2014](#); [Ferroni & Zhou, 2012](#)). Consequently, AES continually found do not seek farmers' perspectives in taking into account the know-how of farmers, associating farmers to decision making, problem-solving or facilitating collaboration with farmers during the consultative process ([Faure et al., 2014](#); ([Mittal & Mehar, 2012](#)).

To overcome that constraint and to make the extension improved and sustainable, FAO, since early 2000, promoted the idea where, extension must become accountable to farmers, in which top down approach seems quite outdated then two ways flow interaction in a capacity to develop the rural human resources capabilities ([Del Castello & Braun, 2006](#)). This move on with farmers preference for demand driven, and participatory approaches between AES and farmers are becoming increasingly important. However studies again found the response from the farming community in problem definition, problem-solving, and extension programming are not encouraging ([Kartika Ekasari, Z., Saleh, S.A.M., Jusoff, K., Salman, D., Akhsan, Kasirang, A., Fudjaja, L., 2013](#)). This made AES in developing countries continue to face numerous constraints that undermine the delivery of sufficient information ([Babu et al., 2015](#)).

In response to that need, many developing countries reform their AES structure governance such as decentralization and privatization intended to move closer to farm level, which aimed to improve extension agents functions in providing better service to farmers ([Feder et al, 2011](#)), to enable farmers' provision of relevant information to meet their information need and reaches them in a timely manner and effective ([Babu, & Joshi, 2014](#)) starting from crop planning, cultivation to marketing and farmers decision at farm level. Ultimately, the effort of AES reform should be able to promote farmer-oriented approaches that encouraged more interactive, mutual learning between formal and informal knowledge systems which are integrated and multidisciplinary ([Wesley & Faminow, 2014](#)) This changes and situation especially affect paddy farmers the most, which they have been considered as dominant in AES system where rice is considered as staple food and important commodity in the food security agenda for many developing countries including Malaysia ([Mohd Rashid & Mohd Dainuri, 2013](#)).

In Malaysia, AES has been viewed as a process of educating farmers in helping them to improve their standard of life by acquiring new information, knowledge, technology, and skills to solve not only their farm's related problem but also families and communities ([Rahman, 2012](#)). Although AES in Malaysia practiced the concept of information delivery to farmers, still the concept applied was mainly advisory services rather than extension work which supposed to help farmers to deal with the situation ([Jasmin, Azizan & Azahar, 2013](#)). This denotes that Malaysia's AES given little emphasized on human capital as in social interaction as in to encourage two flows communication in getting sufficient information to farmers. In fact, like many developing countries, Malaysia's AES information session delivered and conducted by the extension officers to farmers in top down approach ([Hanis Diyana et al., 2015](#)). On the same note, Malaysia's AES at 12 granaries are supposed to help farmers access to the right information, knowledge, and practices beyond their compound which best fit for day to day cultivation activities ([Wisam Yako & Norsida, 2016](#)). Therefore, to promote sustainability in agriculture, there is a need to understand better the farmers perspective ([Nowak, 1983](#)) and the farmer has or can develop essential skills sets as decision making and problem-solving related to farm situation and management ([McElwee, 2008](#)). This makes the case that communication intervention has a vital contribution towards solving AES situational issue through governance structure approach equivalence with the roles of technology, hierarchy, and market ([Rolling, 2004](#)).

COMMUNICATION FOR AES'S ISSUE

The paradigm shift from technology transfer approach to an extension that encourages feedback at farm level has occurred along with the application of social sciences theories such as communication to understand farmers' behavioral in a situation which determines by their knowledge, norms, beliefs, and attitudes. Failing will so hinder communication process and leads to ineffective decision making and problem-solving at farm level ([Namondwe, Ile & Ukpere, 2014](#)) were farmers not having the chance to participate in decision-making, and they are not aware of the situational issue raised or discussed by AES. Noting that AES in many developing countries is struggling to shift to more farmer-oriented approaches, which to connect farmers in situational problems in collaboration with researchers and extension workers. That shows, communication is seen should be able to bring new way of coordination in AES situational problem ([Leeuwis & Van den Ben, 2004](#); [Leeuwis & Aarts, 2011](#)) coupled with the idea of public (farmer) is a group who relate to an organization (AES), who demonstrate varying degrees of activity-passivity, and who might (might not) interact with others concerning their relationship with the organization ([Hallahan, 1993](#)).

The communication aspect have moved on parallel with the agricultural knowledge and information systems (AKIS) (Rolling, 2004) and communication for agricultural innovation ([Leeuwis & Van den Ban, 2004](#); [Leeuwis & Aarts, 2011](#)) seem to have taken another step by a renewed and adjusted focus on communication and agricultural innovation in the field of AES. This shows strategic communication in the field of development communication or participatory communication is often applied in the AES concept. Under FAO documents the concept of decentrasalition specifically acknowledged public relations, where [Rolling \(2004\)](#) further pointed out that “public” or “collective utility” is important, because it was used to distinguish extension from other forms of communication intervention such as public relations, where the goal is to manage one's reputation or public image. In line with that, [Leeuwis and Aarts \(2011\)](#) strongly supported that new thinking of AES not only addresses the micro processes but larger-scale communication processes as well in which value farmers action towards AES situational problem.

Thus, it requires farmers to be connected to the problem such insufficient of information delivery and subsequently affect their information behavior to cope with the problem. Particularly in the case of Malaysia, [Salim, H., & Siti Nur Syarafina, A. \(2015\)](#) suggested that initiative from authorities including researchers and academician important to further research the contribution of personality traits for the majority of paddy farmers in the country including problem-solving because it proved as a sign with the farming performance. Also, a study on farmers' decision making has also relied primarily upon the social cognitive theory Rogers Innovation Diffusion Theory ([Nur Bahiah, Azimi, Krauss & Ismi Arif, 2013](#)) especially pertaining innovation and technology acceptance in Malaysia. Therefore, this future study lead to utilise the perspectives of public relations which will adopt STOPS, [Kim-J.N and Grunig \(2011\)](#) predict significant implications for the pattern of communication between different individuals In problem-solving situations as well as the concept to “describe the people with whom organizations interact in their environment” ([Grunig Nelson, Richburg, & White, 1988:26](#)). Public perception will be taken into account to find out their communication behaviors. Thus, the researcher hopes to use AES in Malaysia context as a case to understand the response of farmers on insufficient of information delivery and seek the solution as a benchmark for future researchers.

SITUATIONAL THEORY OF PROBLEM SOLVING (STOPS)

The Situational Theory of Publics (STP) defined publics; “a public a group of people who face a similar problem, recognize that the problem exists and organize to do something about the important problem.” ([Grunig & Hunt, 1984:145](#)). STP explain publics mixed perception which consists of three independent variables, namely problem recognition, constraint recognition and level of involvement that determine the dependent variables of information processing such as passive communication behavior and information seeking such as dynamic communication behavior. Correlations of the independents with dependents variables were used to categorize publics for various situational issues. Studies utilizing STP for a single issue found that the relationship between the variables produced four types of publics such as active publics, informed publics, latent publics and on publics ([Ni & Kim-J.N, 2009](#)) in addressing these different types of publics, different types of messages and delivery methods need to be employed.

[Kim-J.N and Grunig \(2011\)](#) introduced STOPS to extend the intellectual virtues of STP further. The STOPS introduces a motivational variable which mediates the effects of antecedent's independent perceptual variables on the communicative action as the dependent variables. Also, STOPS redefine and reinstate the variables of referent criterion as a cognitive approach. STOPS expanded the focus of the theory from "decisions" to become a more general theory of communication and “problem-solving.” Such understanding also offers a more comprehensive segmentation of publics in that it is possible to differentiate between active and activist publics based on their cognitive approaches and communicative behavior ([Ni & Kim-JN, 2009](#)). The dependents variables information processing and information seeking had been developed into comprehensive variable known as communicant activeness in problem-solving (CAPS).

COMMUNICATIVE ACTION IN PROBLEM SOLVING (CAPS)

CAPS explain problem-solving in term of how problem solvers search for information, select the relevant or related information, handle the amount of information gathered and shared the information that they have in their effort to solve the problem. This leads to six variables: the active components of communicant activeness are information seeking, fore fending, and forwarding whereas the reactive or passive components are information. On permitting, sharing and attending ([Kim-JN, Ni, Kim, & Kim, 2012:153](#)). In this respect, [Leeuwis & Aarts, \(2011\)](#) believe that better approach in AES environment moves along with an increase of interaction at farmers level. Similarly, earlier on ([Burton, 2004](#)) found that farmers' efforts to maintain self-perceptions in the AES issue may influence their behavior. In other words, farmers' knowledge and information related to the farming issue may facilitate their ability to problem-solving and decision making within AES situation.

Therefore in the context of this research, in order to address the problem of insufficient of information delivery, it is deemed crucial that local AES explore on perceptual and cognitive situation in a way to increase the motivation of farmers to solve the problem as argued by [Kim-J.N., & Grunig, \(2011\)](#) and [Kim-J.N et al., \(2012\)](#) the more effort put in solving problem, the more likely a person will engage in the transmission of information during the early phases of problem-solving. Similarly, [Shucksmith & Hermann \(2002\)](#) argued that the actions of farmers affected by their own 'disposition-to-act,' the product of socialization and interaction. This will, therefore, illuminate farmers possible response towards insufficient of information delivery in AES

PERCEPTUAL AND COGNITIVE PROCESSING

[Kim-J.N and Grunig \(2011\)](#) distinguished problem recognition to the perceptual problem and cognitive problem. A perceptual problem is the early part of a problematic situation, whereas a cognitive problem is the latter part of the problematic situation ([Kim-J.N, 2006](#)). The STOPS adopts a definition of problem recognition as "one's perception that there is something missing and there is no immediately applicable solution to it" ([Kim-J.N & Grunig, 2011:11](#)). The image farmers hold about themselves significantly affects behavior and defines the components of appropriate farming practice. Farmers, therefore, make decisions based on, amongst others things, their beliefs formed by their perceptions ([Pennings & Leuthold, 2000](#)).

Constraint recognition is defined as "people perceive that there are obstacles in a situation that limit their ability to do anything about the situation ([Grunig, 1997: 10](#)). Although people may recognize certain issues as problematic, they will not likely proceed to stop to think or act upon it if they perceive that they will not be able to solve the problem due to factors beyond their control. [Kim-J.N and Grunig \(2011\)](#) maintains that this perception of barrier or limitations in solving a problem decreases the motivation to engage in communicative action as problem solvers perceive their effort will be useless. Farmers to adopt sustainable practices in their effort often constrained by the cost of getting the information which resulted in a lack of information and technology adoption ([Hanis Diyana et al.,](#)).

Involvement recognition is "the extent to which people connect themselves with a situation," ([Grunig, 1997:10](#)). After individuals recognize an organizational crisis as a problematic situation, they may realize some connection between the individual and the problem ([Kim-J.N. & Krishna, 2014](#)). Scholar argued that involvement affects people's communication behavior with high involvement recognition tends to heighten the likelihood of effective communication behavior ([Major, 1993](#)). Study found individual farmers who are experts are much more disciplined in their information behavior much more depends on knowledge and involvement in AES learning and farming practices (Nur Bahiah et al., 2013)

The public used knowledge's and the rules of inference from experience to solve a problem, where STOPS defined as Referent criterion which "any knowledge or subjective judgmental system that exert a specific influence on the way one approaches problem-solving," ([Kim-J.N. 2006:147](#)). The level of communicant activeness in Problem Solving is directly affected by the communicant's referent criterion ([Kim-J.N. & Grunig, 2011](#)). This holds true when a study on the use of pesticide amongst farmers found that farmers usually prefer to rely on their knowledge, perceptions, and past experiences rather than depend on AES agents and retailers for instructions on the issue pesticide use for their farm's control ([Stadlinger, Mmochi, Dobo, 2011](#)).

SITUATIONAL MOTIVATION IN PROBLEM SOLVING

Situational motivation in problem-solving defined as the state of increased cognitive and epistemic readiness to reduce the perceived discrepancy between expected and experiential states ([Kim-J.N. et al., 2012: 151](#)). Although we perceive a problem and have a close connection with it, if the problem does not influence us significantly, people rarely show communicative behaviors to solve the problematic situation ([Kim-J.N, 2006](#)). Studies proved, farmers' willingness to deal and solve the problem cannot be assumed automatically. Therefore appropriate communication sources and ways of interaction between farmers and AES agents help to motivate the farmer to access to information ([Hansen, 2015](#)).

Although STOPS was constructed with the intention to be a more generalized theory of problem-solving, its current use very much remains in the field of public relations where it originated. By exploring relationships between the variables in the STOPS model, it is hoped that the avenues for research may be expanded in local context. This research, therefore, will address each of these variables from point of view of Malaysian farmers towards the issue of insufficient of information delivery in AES.

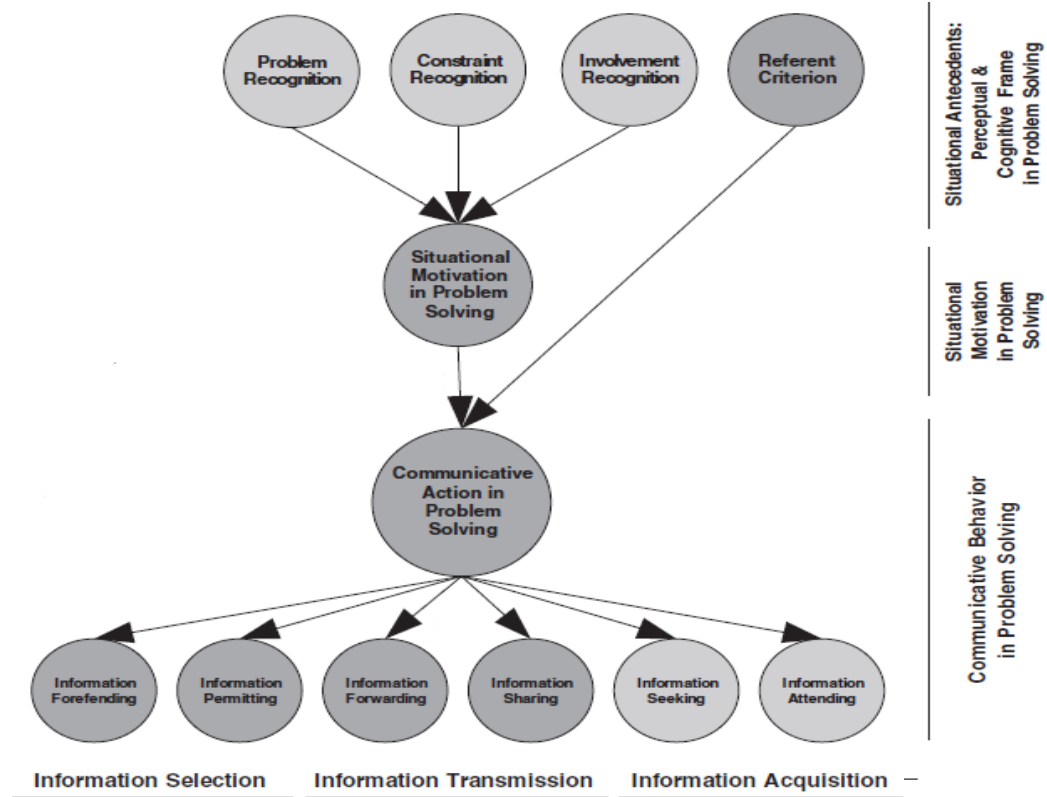


Figure 1: Situational Theory of Problem Solving (STOPS)

Source: [Kim-J.N & Grunig, 2011](#)

METHODOLOGY

The quantitative measure in examining the farmers' response towards insufficient of information delivery was applied in line with STOPS mainly explains publics' perception and communication behavior through statistical finding. The questionnaires were distributed to farmers in a scheduled event on 29 April and 1 May 2017. A survey via self-administered questionnaire amongst 102 farmers at IADA Seberang laut, Selangor represented ethnic composition are majority Muslim as follows: 96% Muslim, 3% Buddha, and 1% were Hindu. All the variables for the research were adapted from items used in [Kim-J.N & Grunig's](#) Situational Theory of Problem Solving (2011). A 10-point Likert scale was utilized with 1 representing strong disagreement and 10 representing strong agreement with the statements. The exploratory data analysis was performed using principal components with varimax rotation to assess the performance of each item in measuring their respective variables. To define the number of dimensions and items within each dimension that best represent the variable in each latent construct on a pilot study with the sample at least 100, where items with low factor loading will be excluded ([Zainudin, 2014](#)). Thus, study only retained items that loaded on the variables at .50 cut off criterion, and the Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, KMO more than .50 ([Hair & Anderson, 2010](#))

FINDINGS

The purpose of this study was to test the reliability and validity of the 67 items in an instrument in measuring respondents response towards insufficient of information delivery problem in AES, its application to the targeted population and response rate to the survey. A commonly used measure of internal consistency of scale items is the reliability analysis (Cronbach's Alpha and must display a high degree of internal with the value greater than the minimum of 0.70 ([Sekaran, 2003](#); [Hair et al., 2010](#)). Reliability test on STOPS, CAPS indicates high reliability with alpha more than 0.7. However, to ascertain the number of factors underlying the variables, exploratory factor analysis was performed and finalized with 58 items retained for future study. The items fell into factors group as suggested by theory. Table 1 shows the eigenvalues and variance explained. The factor loadings and Cronbach's alpha values are also reported.

Table 1: Summary of items and factor loading for varimax rotation and reliability test for STOPS and CAPS.

Variable	No. of Items	Factor Loading	Eigenvalues	% of variance explained	Cronbach Alpha
STOPS					
Problem Recognition	5 items	0.51 - 0.93	4.02	67.07	0.87
Constraint Recognition	6 items	0.59 - 0.85	3.67	61.19	0.86
Involvement Recognition	5 items	0.85 - 0.91	4.26	71.00	0.89
Referent Criterion	6 items	0.61 - 0.90	4.32	72.01	0.91
Situational Motivation in Problem Solving	5 items	0.70 - 0.91	3.59	71.81	0.88
CAPS					
Information Permitting Information	6 items	0.64 - 0.88	4.17	69.57	0.91
Forefending	5 items	0.86 - 0.93	4.10	68.32	0.85
Information Forwarding	5 items	0.89 - 0.93	4.40	62.85	0.77
Information Sharing	5 items	0.87 - 0.90	4.16	59.38	0.81
Information Seeking	5 items	0.86 - 0.90	3.94	65.67	0.85
Information Attending	5 items	0.79 - 0.89	3.63	60.57	0.83

Based on this, although the scale in STOPS for problem recognition consisting all items above 0.5 cut-off criterion. This study, however only retained 5 items and decided to drop one item. That is " I think this problem is poor" as it is redundant with the items " Insufficient of Information is an as serious problem in agricultural extension services." The scale in STOPS for involvement recognition retained 5 items, as the items "I have a strong opinion about this problem" was dropped for statistical reason where factor loading for principal component analysis less than 0.5. Other scales in STOPS such as constraint recognition, referent criterion, situational motivation in problem-solving and information permitting retained all items, while more items were deleted for information for fending, information sharing, information seeking and information attending due to factors loading for principal components analysis less than 0.5 cut-off criterion. One item was dropped from the forefending information scale, "Others respect my perspective about this problem because it is simple and clear" This item loaded with 0.34 and excluded from this study. Similarly, the items " It is worth spending the time to persuade others to solve this problem especially during the cultivation season" and " I'm happy to educate others about this problem," were dropped from information forwarding scale as these items also loaded at 0.25 and 0.40 respectively. Two items were dropped from information sharing scale were "I'm sure that i will be quite active in passing on information related to this problem shortly" and " I am a person whom my friends come to learn about this problem" as both items loaded at 0.35. Moreover, due to same statistical reason, one item for information seeking as " My friends think that take to much time for learning about this problem problem" also dropped. One item was dropped from information attending scale. " I may read posting on this problem that I found on the website that I surf," as this item loaded less than 0.5 and was excluded.

The factor loading for some of the items for variables is a week (less than 0.50). Thus, the questionnaire was revised according to the reliability and principal components analysis which will be used for future study.

DISCUSSION

This main objective of this paper was to review the literature of insufficient of information delivery problem in AES and how communication aspect has moved on parallel with the problem. Second, to review the assumption and concept of STOPS-that will help to connect farmers to a solution of a problem such as insufficient of information delivery. Finally, this paper was to test the items for the measurement of farmers' response in this problem and identified items for future study.

The concept of Situational theory of Problem Solving (STOPS) was developed in 2006 to refine and extend the intellectual virtues of the Situational Theory of Public (STP) [Kim, J.N \(2006: 1\)](#). Based on literature that has utilized this theory through issues were selected based on their significance towards understanding various publics depending on the interest of the research in which rightfully explained that public would not change/adopt new behavior unless they recognized it a problem, and also they see few obstacles in doing something about it. In this case, this paper provided initial guidance toward investigating farmer's dimensions of conceptual in problem-solving towards insufficient of information delivery. Items for the survey instrument was developed based on ideas proposed by STOPS and adjusted to suit the needs of this study and local context. The items retained for future study were based on the results of the exploratory factor analysis (EFA). The EFA

confirmed the dimensions of concept consistently like been proposed by theory and finalized with only 58 measurement items.

This study would provide insight, practically, the main idea of the extension strategy to produce competent and latest agriculture information, should include a baseline understanding how the farmers are accepting and reacting to the situational issue at hand. A better understanding of how the farmers view current issues and trends in insufficient of information delivery provides a better platform for AES institution to deliver their information and to plan for an effective strategy. In the same way, a study on farmers dialogic communication pointed out communication action is the goal of interaction which aims to value others as an equal in the discussion, hearing and empathizing with farmers concern (Paquette, Sommerfeldt, & Kent, 2014). Realizing that attention to farmers-oriented perspectives is needed for success of AES, Theoretically, future study also seeks to develop further empirical support for the Situational theory of Problem Solving (STOPS) on farmers communicative action of taking, selecting, and giving information on the issue is dependent on the way the farmers recognizes the problem, perceive possible constraints, level of personal involvement in the issues. Whether they have prior knowledge or experience that guide their judgment on the issues and their level of motivation in solving the problem.

Move on with [Kim and Grunig \(2011\)](#) indicates public is consists of problem-solving, social embeddedness and communication action. Therefore future research work is necessary, as argued especially regarding the possibility of accessible 'worlds' that may function as support to increase the problem-solving capacity of farmers in the Agricultural Extension services sector ([McElwee, 2008](#)). Further, an attempt to introduce a new variable to be examined within the proposed model of the STOPS whereby is tested as an antecedent variable to the independent variables of the theory in a way to understand this concept and its effects on individual problem-solving further. Moreover, investigation of STOPS on sample in local context would provide a deeper understanding of the eastern society on their communication behavior and how they react to issues that affect them.

CONCLUSION

This study provided guidelines for future research in investigating farmers' response towards insufficient of information delivery issue which leads to perceptual and cognitive of the problem, situational motivation and the communicative action by applying and extending STOPS conceptually and empirically. Further, understanding how farmers' response in problem-solving contributes to the theory of STOPS an attempt to introduce a new variable to further test and utilization of the theory at the local context in AES. Further, studies in Asian region especially Malaysia where Muslim as the most population would shed light to the applicability of this theory in explaining people's communicative behavior despite cultural differences.

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