

Research Application Summary

Mediating role of organizational support and commitment on the relationship between psychological empowerment and innovativeness of farmer organizations in central Uganda

Sebuliba-Mutumba, R.

Department of Extension and Innovation Studies, College of Agricultural and Environmental Sciences, Makerere University, P.O. Box 7062, Kampala, Uganda

Corresponding author: rsemur@gmail.com

Abstract

An investigation was carried out to establish the influence perceived organizational support (POSA) and farmer commitment (COMMIT) have on the relationship between psychological empowerment behavior (PEB) and innovativeness of smallholder farmer groups in Luweero and Wakiso district, Uganda. Participating farmer groups (FGs) were selected according to inter alia: whether the group was actively engaged in an agricultural enterprise, had existed for more than one year and accessed government support through NAADS (National agricultural advisory services) extension services. A quantitative survey was undertaken using questionnaires administered to 203 rural small holder farmers. Data from farmer responses were analyzed using the confirmatory factor analysis (CFA) and structural equation modeling (SEM). Results showed that perceived organization support ($\beta=1.251$; $p=0.001$) and farmer commitment ($\beta=0.967$; $p=0.010$) significantly mediated the relationship between PEB and innovativeness of smallholder farmers. The results further indicate that perceived organization support has a significant relationship with farmer innovativeness ($\beta=0.461$; $p=0.003$). However, psychological empowerment did not have a significant effect on farmer innovativeness ($\beta=0.290$; $p=0.709$). Results suggest that farmer organizations with arrangements to support members and member commitment to group goals, promote farmer generation of new agricultural ideas, which are precursors to innovations. Therefore, when farmers feel that they are significantly supported, their commitment to innovate is triggered.

Keywords: Farmer groups, innovativeness, organizational support, Psychological empowerment, Uganda

Résumé

Une enquête a été menée pour établir l'influence du soutien organisationnel perçu (POSA) et de l'engagement des agriculteurs (COMMIT) sur la relation entre le comportement d'autonomisation psychologique (PEB) et la capacité d'innovation des groupes de petits agriculteurs dans les districts de Luweero et de Wakiso, en Ouganda. Les groupes d'agriculteurs participants ont été sélectionnés en fonction, entre autres, de leur engagement actif dans une entreprise agricole, de leur existence depuis plus d'un an et de leur accès au soutien du gouvernement par le biais des services de vulgarisation du NAADS (National agricultural advisory services). Une enquête quantitative a été entreprise à l'aide de questionnaires administrés à 203 petits exploitants agricoles ruraux. Les données issues des réponses des agriculteurs ont été analysées à l'aide de l'analyse factorielle confirmatoire (AFC) et de la modélisation

par équation structurelle (MES). Les résultats montrent que le soutien perçu de l'organisation ($\beta=1,251$; $p=0,001$) et l'engagement des agriculteurs ($\beta=0,967$; $p=0,010$) ont médié de manière significative la relation entre le PEB et la capacité d'innovation des petits exploitants agricoles. Les résultats indiquent en outre que le soutien organisationnel perçu a une relation significative avec la capacité d'innovation des agriculteurs ($\beta=0,461$; $p=0,003$). Cependant, l'autonomisation psychologique n'a pas eu d'effet significatif sur la capacité d'innovation des agriculteurs ($\beta=0,290$; $p=0,709$). Les résultats suggèrent que les organisations d'agriculteurs avec des dispositions pour soutenir les membres et l'engagement des membres aux objectifs du groupe, favorisent la génération par les agriculteurs de nouvelles idées agricoles, qui sont des précurseurs des innovations. Par conséquent, lorsque les agriculteurs sentent qu'ils sont supportés de manière significative, leur engagement à innover est déclenché.

Mots clés : Groupes d'agriculteurs, capacité d'innovation, soutien organisationnel, autonomisation psychologique, Ouganda

Introduction

Many agricultural reforms have been introduced by various governments of Uganda with the main objective to improve farmer production, productivity and livelihood through the transformation of farmers' methods of farming. The reforms involved a number of programmes many of which were supposed to disseminate innovative agricultural extension advisory agricultural services (AAS); and huge amounts of resources were allocated to them (Hailu, 2009; NAA DS, 2011). The programme designers intended to make farmers entrepreneurs who could solve most of their problems locally and improve agricultural production. The programmes included approaches like: the participatory, linear, agricultural knowledge and innovation systems (AKIS), (Hailu, 2009); and most recently NAADS (National agricultural advisory services), which was anchored on the agricultural innovation system (AIS) approach (NAA DS Act, 2001).

However, despite their introduction and implementation, many programmes faced a number of challenges. Among these was the failure to establish and address critical actor intrinsic and/or psychological factors that influenced farmer actions in agriculture. These psychological factors controlled actors' perceptions and decisions towards introduced programmes (Ajzen, 2005) which in this instance deeply influence agricultural outcome and success. This oversight may have rendered the introduced extension programmes fully inappropriate to address farmer development and transformation. As observed by various researchers (Sheik, 2014; Turyahikayo and Kamagara, 2016) designers appeared to treat farmers as mere recipients of externally generated ideas rather than engaging them to participate actively in idea and technology development. This made the application of knowledge generated from a single source to address a number of agricultural local challenges inappropriate.

Therefore, there is a need to establish and look critically at how some of these factors e.g. psychological empowerment, organizational support and commitment influence innovative behavior of smallholder farmers. More important is to understand the interaction of these factors i.e. their moderating effect on each other and how it affects innovativeness of farmer behavior in agriculture. This then would assist us in understanding more the role farmers play in agricultural development and production through farmer groups. For instance, what exactly could trigger an actor like a farmer to perform in the best way to develop agriculture and produce quality products not only for domestic consumption, but also for the market? What are those intrinsic factors that are so important in influencing creativity of farmers

operating in a group? Various suggestions (Spreitzer, (1995; 2008) have been put forward including those which attribute most actor behavior to 'psychological empowerment (PE)'. PE refers to the: (i) meaning people attach to e.g. farming and the work they are involved in rather than what products they produce; (ii) competence, (iii) self-determination and (iv) impact farmers possess (Spreitzer, 1995; 2008). The factor is a personal intrinsic phenomenon triggered by the above four behavioral processes towards an action (Spreitzer, 1995; 2008); portraying the actors' psychological responses to undertake innovation driven by changing global/social demands. These demands involve government, private and civil society actors; and the rapidly evolving markets, regulations and changing climate (Jelsma *et al.*, 2017; Prager and Creaney, 2017). Farmer responses to these exogenous social or global demands, involved endogenous factors and/or processes which various extension programme approaches failed to give closer attention (Hailu, 2009).

Other significant factors cited by other studies (Tong *et al.*, 2015) include the 'support' actors receive from their organizations and to farmer 'commitment'. Organizational support is believed to be among the external factors that influence actor actions. For instance, farmers would feel motivated and show responsibility regarding their FG only if they perceive they are being supported by their organization i.e. when they are listened to, and given the necessary resources. Neglecting their demands for anticipated resources will affect their creativity (the potential to bring in new ideas, unity, and collaboration). As noted by Tong *et al.* (2015), absence of organization support for creativity compromises teamwork and realization of goals. It implies farmers should feel they receive *inter alia*: attention, respect for their suggestions and opinions, technological assistance/well-being. The atmosphere at the farmer organization should be conducive for the farmers conducting innovation activities.

Similarly, farmer commitment to group innovation was cited to be among the factors that impact greatly on idea generation in actors (Tong *et al.*, 2015). It involves three dimensions i.e. affective commitment (AC), continuance commitment (CC) and normative commitment (NC) (Dewettick and van A meijde, 2010; Tong, *et al.*, 2015). Affective commitment is a situation such as when e.g. farmers feel that innovating within their group is important to their self-image. They show enthusiasm and are proud of identifying themselves with their group to innovate. It is a psychological attachment and an occupational commitment triggered when members feel even the leadership and the organization as a whole are committed to idea generation and adoption. However, occupational continuous commitment is when farmers feel that too much of their livelihood will be affected if they changed from farming and innovative tendencies. They for instance feel that they have an obligation to continue with the farming and innovation; that changing from innovation business would require a considerable personal sacrifice. For normative commitment, the farmers feel it imperative to stay in the group and do farming. They feel a strong sense of security and loyalty belonging to the group and they offer their services like undertaking innovative activities. Innovation undertaken in this regard, is trying to respond appropriately to environmental demands. Farmers thus undertake to create new things (variants), which they successfully introduce (selection) into their farming process intended to improve previous ways of doing work (Bernard and Spielman, 2009; Kilelu, 2013).

Based on the above perspective therefore, the study objective was to investigate the extent organizational support and farmer commitment factors moderated the association between psychological empowerment and farmer innovative behavior. Additionally, the study tried to establish whether these factors have significant effects on farmer innovativeness. The moderating influence of 'organizational support' and member 'commitment' in the relationship between PEB and innovativeness formed the basis for this investigation.

Conceptual framework. Relationship between PEB and innovativeness, influenced by perceived organizational support and commitment. The conceptual framework is presented in Figure I and had independent variables and dimensions adapted from a number of existing frameworks that included among others Thomas and Velthouse (1990), Spreitzer (1995) and Tong *et al.* (2015).

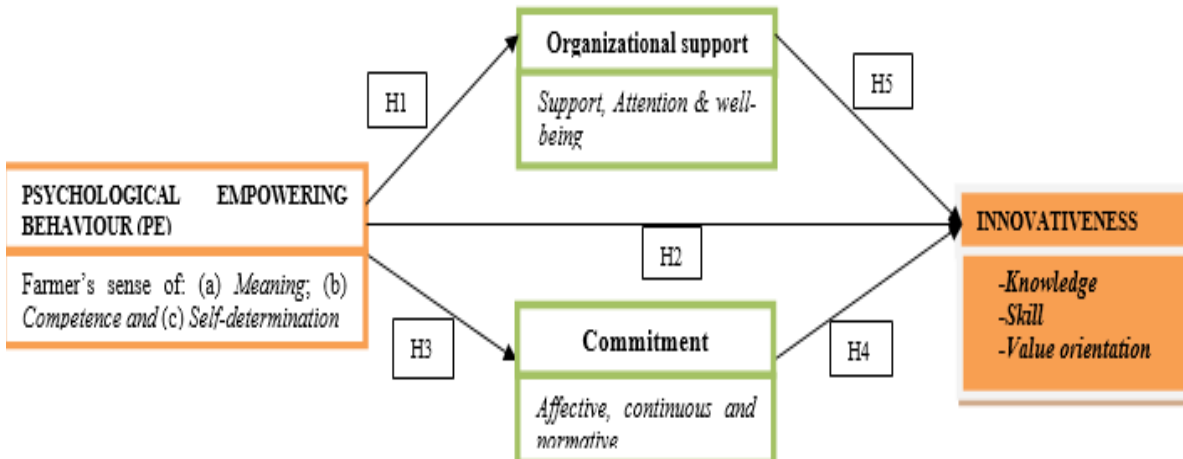


Figure 1. A theoretical framework of psychological empowerment

Relationship between Psychological empowerment (PE) and organizational support. Assessment of smallholder farmer psychological empowerment behavior was done using a questionnaire (PEQ) tool generated by Spreitzer (1995). The PEQ tool had a 12-item scale with three items each for four dimensions i.e. “meaning”, “competence”, “self-determination” and “impact” (figure I). Based on observations by Thomas and Velthouse (1990) and Spreitzer (1995), meaning in the context of this study refers to how an individual farmer in a Farmer Group (FG) valued the work of farming. For example, the farm work I am doing is of importance to me. Regarding “competence” this was the belief in the skills or creative-self efficacy a farmer felt about the way he/she was carrying out farming; for example, I have the capability to do farming well. Similar to what Spreitzer (1995) noted “Self-determination”, was the farmer’s sense of having the freedom to act the way he/she thought best like: I have the freedom to determine how I do my work. Additionally, “impact” is the extent a farmer influenced operating outcomes at work. For example: My influence on what happens in my farming is large.

Therefore, the mean of the PE dimension items was computed to represent the PE construct guided by the framework from Dewettinck and van A meijde (2010). Receiving PE will significantly influence organizational support which acts as a mediator for farmer innovativeness (Figure 1). Organization support was measured using three items, i.e., support, conditions and well-being (Tong *et al.*, 2015). It was argued therefore that psychological empowerment contributes to organizational support, i.e., there is a significant relationship between PE and organizational support. Thus,

H1. Psychological empowerment is associated with organizational support.

Relationship between psychological empowerment and farmer innovativeness intentions. In this investigation, the dependent variable was farmer innovativeness. Innovativeness was used to establish the direct influence of psychological empowering behavior on creativity of smallholder farmers. Creativity, i.e., innovativeness is taken as the development of creative ideas by farmers and their adoption in an organizational context influenced by psychological empowerment (Amundsen

and Martinsen, 2015). Innovativeness is thus traced from psychological empowerment behavior that triggers a chain of processes that determine this outcome criterion variable. Innovativeness was measured using three dimensions i.e., “knowledge” (had 4 items), “skill” (with 3 items) acquisition and “value orientation” having three measurable items. The items were measured on a five-point Likert scale. From this perspective it is likely that farmer innovativeness is influenced by the farmer psychological empowering behavior. Thus:

H2. Psychological empowerment behavior is significantly related to farmer innovativeness.

Relationship between Psychological empowerment (PE) and farmer commitment. Farmer psychological empowerment is predicted to influence farmer commitment to innovativeness. As shown in figure 1, commitment was measured using three dimensions i.e., affective, continuous and normative. It was argued that PE has an influence over farmer commitment to FG goals/objectives. Thus:

H3. Psychological empowerment behavior is significantly related to farmer commitment.

Relationship between farmer commitment and innovativeness. Farmer commitment was predicted to influence innovativeness. It was argued that farmer commitment greatly influences creativity (innovativeness). Therefore,

H4. Farmer commitment positively influences farmer innovativeness.

Relationship between organizational support and innovativeness. Perceived organizational support was predicted to influence innovativeness. It was argued that farmer organizational support impacts innovativeness. Thus:

H4. Farmer Perceived organizational support positively influences farmer innovativeness.

Methodology

Study area, scope and population. The study was undertaken in two districts, i.e., Wakiso and Luweero located in central Uganda. Respondents were from FGs selected from the three sub-counties of Ziroobwe, Biisukuma and Busiro. The latter two sub-counties were from Wakiso district while the former was from Luweero district. These areas were selected because they are among those with smallholder farmer groups whose leaders were elected by their members. Secondly, the groups had accessed National Agricultural Advisory Services (NAADS) innovative technologies and methods for rise in farming. The farmers practiced crop and animal husbandry for both food security and the market. In this study, a quantitative design was used. Data were collected between 2018 and 2019 with a total 202 farmers participating. The confidentiality of farmer responses was ensured.

Data collection. Data collection was done using a questionnaire which was developed using frameworks from studies done by Sprietzer (1995), Amundsen *et al.* (2013) and Tong *et al.* (2015). The psychometric properties in the questionnaire tool were designed for agricultural farmer group context. The survey questionnaire was prepared in English language with another standard version in ‘Luganda’ (local language spoken) developed and read to the respondents. Farmer group members made scores based on their opinion and experience, regarding statements in the questionnaire. The measurements of the four variables were done on a 5-point Likert type scale ranging from I (strongly disagree) to 5

(strongly agree). During data collection, precautions were done in choosing appropriate measurement scales, i.e., scales had to focus on a single dimension; there was no overlap or bridge between two or more dimensions. Secondly, the study used a common format for ease of administration (5-point Likert scale). Lastly, investigations focused on the individual experience of a dimension rather than a description of a work environment. Data collection was done with the technique of direct submitting from FG members and guiding them to fill out questionnaires.

Data analysis. Data were analysed using the Structural Equation Model (SEM). Data were then processed to answer the problem statement and postulated hypothesis based on the conceptual framework (Figure 1). Similarly, questionnaire item reliability analysis was also carried out using Cronbach's coefficient alpha test to ascertain their reliability on the Likert scale.

Demographic characteristics of smallholder farmer. The social demographic attributes of smallholder farmers are shown in Table 1. A total of 202 farmers took part in the survey.

Table 1 shows that majority participants were females comprising 117 (57.9%). Many farmers were married and practicing both animal and crop husbandry. Of the respondents, 65.5% had attained secondary education while 28.2% had only attained primary education 'on'Iy.

Reliability of the questionnaire items. Table 2 shows a reliability analysis of the questionnaire items. The model variables had reliability coefficient values (α) lying between 0.60 and 0.786. A coefficient of at least 0.70 is recommended (Straub *et al.*, 2004; Sseguya *et al.*, 2018), and values in the range of 0.60 to 0.69 are acceptable especially if there are only a hand fail of items in the questionnaire or scale (Leech *et al.*, 2005).The measurement items for each dimension were those that were retained after SEM analysis.

Structural model analysis. Using various studies and frameworks, confirmatory factor analysis (CFA) was adopted to test the convergent and discriminant validity of the survey instrument used (Table 3). The goodness-of-fit criteria results pertaining to the model indicated a satisfactory fit for the measurement model (values met all the threshold requirements for a model fit) (Tong *et al.*, 2015; Hooper *et al.*, 2008).

Hypothesis testing. In testing the hypotheses, the second order confirmatory factor analysis (CFA) was computed on the conceptual model. This was between constructs: psychological empowerment (PE), perceived organization support (POSA), commitment (COMMITTS) and innovativeness (INNOV).

Results shows that the construct relationship between farmer PE and POSA was significant with a regression weight of $\beta=1.251$ and $p=0.001$ (Table 4 and figure 2). Hypothesis H1 was thus accepted. However, the findings indicate that PE had no significant relationship with farmer innovativeness (INNOV). Based on the model results, structural path hypothesis H2 was rejected. Psychological empowerment (PE) was significantly associated with farmer commitment ($\beta = 0.967$ and $p=0.010$) thus hypothesis H3 was accepted. Overall, results reveal that perceived organization support (POSA) and commitment (COMMIT) moderate group psychological empowerment (PE) towards farmer innovativeness.

Table 1. Social demographic attributes of farmers surveyed

Demographic Attribute	Frequency	Percentage
Gender:		
Male	85	42.10
Female	117	57.90
Total	202	100
Education level:		
None	13	6.40
Primary level	57	28.20
Secondary level (O-level)	66	32.70
Secondary level (A-level)	46	22.80
Tertiary	17	8.40
Others	3	1.00
Total	202	100
Main occupation		
Crop husbandry	36	17.80
Animal husbandry	90	44.60
Others	76	37.60
Total	202	100
Marital status:		
Married	116	57.40
Divorced	39	19.30
Widowed	14	6.90
Single	33	16.30
Total	202	100

Source: Primary data

Discussions

This study examined the extent perceived organizational support (POSA) and farmer commitment (COMMIT) factors moderated the association between psychological empowerment behavior (PEB) and farmer innovative behavior (INNOV). The study established as well the significance of the relationship between each of the moderating factors on farmer innovativeness. Moderation tool into consideration whether the two moderating factors have an indirect effect via the independent variable to the dependent variable MacK innon (2011). Thus, the investigation tried to search for more explanations regarding challenges most extension programmes could have omitted in their advocacy for innovations aimed at transforming farmers and agriculture development. The search for explanations involving factors influencing relationships between variables and the intended outcomes is discussed based on the results.

Table 2. Questionnaire items and their reliability coefficients

Constructs and dimensions	Measurement items relevant for model	Reliability coefficients
Psychological Empowerment (Spreitzer, 1995)		0.786
Impact	PEI 3 I have significant influence over what happens in my department	
Competence	PEI 2 I have a great deal of control over what happens in my department	
Organizational support		0.772
	POS 3 My farmer group (FG) strongly considers my goals and values	
	POS 5 My FG provides technological support to assist in innovations.	
	POS 6 My FG is willing to help me when I need special favours	
	POS 12 The FG takes my interests into consideration when it makes decisions that affect me.	
	POS 13 Help is available from this FG whenever I have a problem	
	POS 23 The farmer organization provides resources for innovation activities	
Commitment		0.60
	OCA 1 Being in a creative/ innovative business is important to my self-image	
	OCA 2 I am proud to be in the innovation business	
	OCC 2 Too much of my life will be disrupted if I were to change from the FG activities.	
	ORA 3 I feel a strong sense of belonging to my farmer organization	
Innovativeness		0.71
Skill	INVS 1 Through training I will able to innovate and market new products	
Value-orientation	INVV 1 With the group training I will observe marketing standards	
	INVV 2 With group support I will be innovative & market quality products	
	INVV 3 Training helped me access useful quality innovational market information	

Table 3. Confirmatory factor analysis results model fit

	Model
Chi-square (CMIN)	161.879
Degree of freedom (DF)	99
Chi-square/df (CMIN/DF)	1.635
p-value	0.000
Normal fit index (NFI)	0.791
Tucker-Lewis Index (TLI)	0.883
Comparative fit index (CFI)	0.904
Adjusted goodness of fit index (AGFI)	0.877
Goodness of fit index (GFI)	0.911
Root mean square error of approximation (RMSEA)	0.056

Table 4. Regression results of the structural modeling analysis

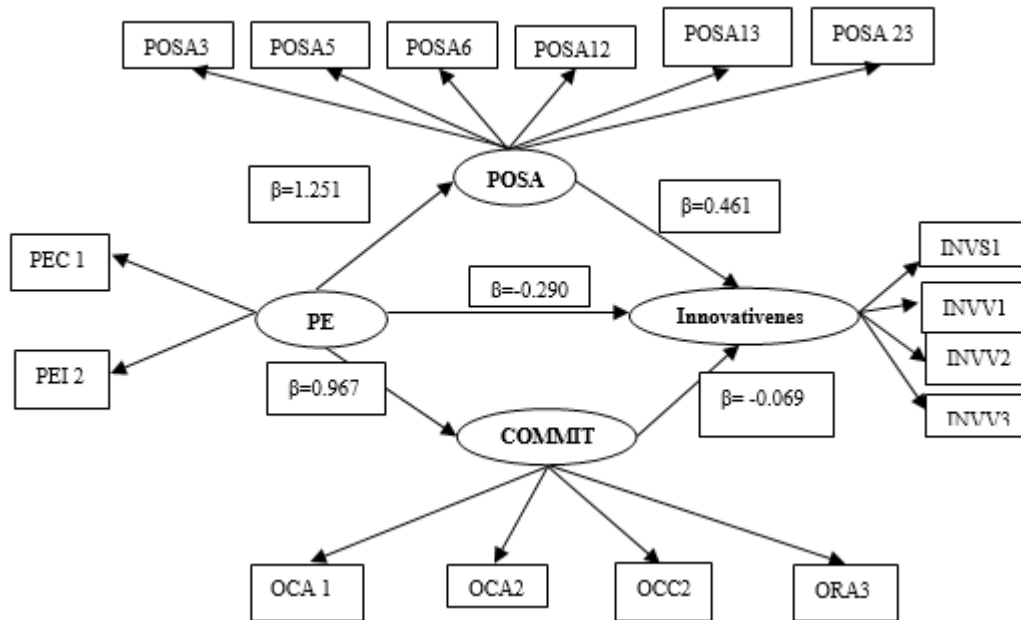
Structural paths		Estimates	p-values	Hypothesis
H1	POSA ← PE	1.251	0.001***	Accepted
H2	INNOV ← PE	-0.290	0.709	Rejected
H3	COMMIT ← PE	0.967	0.010	Accepted
H4	INNOV ← COMMIT	0.069	0.886	Rejected
H5	INNOV ← POSA	0.461	0.003***	Accepted

PE - Psychological empowerment; POSA—Perceived organizational support; COM4IIT=Commitment; INNOV-Innovativeness; ***p<0.00 1; * p<0.05 significance levels

Foremost, results suggest that organizational support and farmer commitment significantly moderated the association between psychological empowerment and farmer innovative behavior (Table 4 and figure 2), The implication was that the PEB farmers exhibit, (i.e., the confidence in their ability to do farming, and their influence over what happens in their enterprises and/or groups), is greatly moderated/influenced by POSA (i.e., attention and support farmers receive and their well-being); and their commitment (i.e. affective and continuous commitment) factors. This moderation of farmer confidence or their ability and influence by the two moderating factors subsequently influenced positively farmer intention to use skills and values needed for innovations in their enterprises. Such factor interactions was reported by Amiindsen and MaHinsen (2013), Tong *et al.* (2015) and Lee *et al.* (2019).

These results are quite interesting because without the moderating effect of the two factors perceived organizational support and fanner commitment the psychological empowerment factor alone would have no positive relationship with farmer innovativeness. Therefore, contrary to findings by Tong *et al.* (2015) and Spreitzer (1995), psychologically empowered farmers do not necessarily develop intentions to adopt skills and values that would enable them use new ways or methods of farming. The moderation of the relationship between PEB and farmer innovativeness is important if the factor PEB is to have any effect on farmer innovations. The argument therefore is that PEB cannot act in isolation but can effectively influence farmer creativity under mediation from POSA and COMMIT. The results agree with findings from studies where influences of PEB were assessed in relation to actor contributions to organizations although mixed opinions about its influence were noted (Tong *et al.*, 2015; Hair *et al.*, 20 10). Variations

in study results regarding influence of PEB on actor actions, were attributed to effects from local contexts where for instance many conditions (e.g. actor ability, involvement, dominant cultural values, or support for actors in such organizations) may not be favourable thus affecting the role of PEB. When farmers feel supported by their group or government agency, they will show commitment and fully utilize the availed skills and values to develop entrepreneurial or innovation intentions in their farming. Policy and/or agricultural extension officials should note this.



PEC1 -Psychological empowerment Competence dimension ; PEI 2= Psychological empowerment Impact dimension; POSA3- Attention; POSAS=Support; POSA6=Support POSA 12=Well-being; POSA 1=Well-being; POSA23=Support; OCA1=Occupational commitment affective; OCA2=Occupational commitment affective; OCC2=Occupational commitment continuous; ORA3=Organizational commitment affective; INVS1=Innovativeness skill dimension ; INVV 1/INVV2/INVV3= Innovativeness value orientation dimension.

Results also showed that relationship between farmer PEB and POSA was significant ($b= 1.251$ and $p=0.001$). Similarly, PEB was significantly ($\beta 0.967$ and $p=0.010$) associated with farmer commitment. This suggests that farmer confidence and influence portrayed over what happens in their enterprises and/or groups (i.e., PEB factor) make them feel they would receive attention, support and improvement in their well-being. Subsequently, this could make them become committed (i.e., having affective and continuous commitment) to organizational goals. It should be noted however, that although the relationship between POSA and innovativeness was positive, that between commitment and innovativeness was not. It further illustrates the effect of the interaction of these various factors on farmer behavioral intentions in agriculture.

Conclusion

This investigation shows that a number of factors influence farmer intentions towards creativity. It is not enough to introduce programmes to transform farmers but also to involve them since they come from different backgrounds, and there are quite a number of factors especially psychological ones that influence their actions in farming. Farmers for example would exhibit creativity when they perceive organizational support. This can trigger their intention towards creativity and entrepreneurial

behavior. Lastly, the study shows that factors like PEB do not act in isolation, but in conjunction with other factors to influence outcomes.

Nevertheless, we point out the following study limitations. Only farmers from two districts participated in this investigation. Future research should expand the survey scope to study opinions from other districts. Furthermore, the questionnaire tool used in this investigation, was designed using measurement items developed from frameworks in other renowned international scholars. Thus farmer's self-reported data may have been biased and still their perceptions change over time making findings ungeneralizable. There is need to undertake a qualitative study for an in-depth analysis.

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