National Agricultural Marketing Council

Promoting market access for South African agriculture

The impact of extension service on marketing information in smallholder farmers: A case study of Mpumalanga province in South Africa

Presentation at NAMC Seminar

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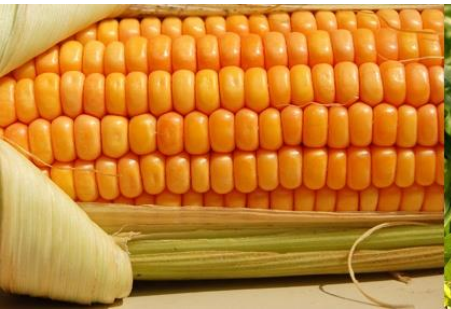


Presentation Outline

- Introduction
- Literature review
- Method
- Results
- Conclusions

Introduction

- Global extension service
  - Extension service is utilized by approximately 1 billion small-scale farmers in the entire world (Davis et al (2010)
  - Various entities [such as government, NGOs and agribusiness firms] have an investment value of over 1 billion US$ per year (Marsh et al, 2014).
- South African extension service
  - 1728 (80%) with a diploma qualification, 427 (20%) higher degrees, 204 (9%) with training in communication, 238 (11%) with project management,143 (6%) computer literacy.
  - the ratio of extension staff to farmers; (i) Commercial farmers 1:21; (ii) Subsistence 1:857 and (iii) Combined 1:878.
- Information – a central aspect of extension service.
  - Production vs Marketing
  - As a result a market-driven extension service is aligned to agricultural information mix (FAO, 2008).
  - Agribusiness firms have attempted to integrate agro-processing, marketing operation, contract farming and information and communications technology (ICT) with extension service (Anandajayasekeram et al, 2008) .

Literature review

- Definition
  - Extension service as a service, process, programme or projects that provides information, knowledge, research, technology, adoption to improve farm production, income and welfare [Fu and Akter, (2013), GFRAS, (2012); Mossie and Meserete, (2015); Quizon et al, (2001) and FAO, (2010)].

- Function or role of extension service
  - The task extension service has to do with dissemination of information between agricultural research development institutions and farmers [Anaeto et al (2012); Machila et al (2015) and Ayanwuyi et al (2013)].
  - Some of the researchers seem to think that the information disseminated should cover all facets of farming enterprises (Mossie and Meserete 2015).
  - The overall aim of extension service is to drive behavioural (traditional beliefs, attitudes and culture), economic (improved income and financial management) and social (reduce poverty, hunger and improve leadership and co-operation) change of the farmers.
- Impact of extension service
  - In Nigeria - yield from 52% to 78%), realize more (44.4%) access to information on marketing, pests and diseases (42.22%), improved technologies (42.22%), chemical usage (41.11%) and agronomic practices (40%). Through this service, 38.89% of farmers we able to have information on processing and storage, 36.67% information on weeds and soil conservation, 35.56% information on cassava stalk varieties, 33.33% information on group formation and 32.22% information on agricultural credit,
  - In Zimbabwe, Machila et al (2015) found that extension service added per adult equivalent amounts of US$282 to crop revenue.
  - In Uganda this service has led to a new agricultural sector policy, modernization plan of agriculture and integration of farmers to markets (Anderson, 2008). Other benefits of extension services were associated with good decision making by farmers, establishment of networks and modernity of farming (FAO, 2009).

Y_{kt}

Methodology

- This study was conducted in 2015 by National Agricultural Marketing Council (NAMC). It was commissioned to find out the impact of extension services on the marketing information sources.

- The study was conducted on 13 various local municipalities of the Mpumalanga province of South Africa. Both qualitative and quantitative research approaches with a purposive sampling on 43 farmers.

- Descriptive analysis - the frequencies and proportional accounts of the variable of interest.

- A structural equation modelling (SEM) - to provide the researchers with variabilities, co-variances and correlations of the variables.

$$Ykt = \alpha + ExtS + e \quad \ldots\ldots(1)$$
$$Yic = \alpha + ExtS + e \quad \ldots\ldots(2)$$
$$Ydc = \alpha + ExtS + e \quad \ldots\ldots(3)$$
$$Yic = \alpha + ExtS + e \quad \ldots\ldots(4)$$

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Results

(a) Descriptive

LOCAL MUNICIPALITIES	GENDER	FREQUENCIES (n)	GENDER (%)	TOTAL	TOTAL (%)
1.Dipaleseng	Male	2	28.57	7	16.28
	Female	5	71.43		
2.Dr JS Moraka	Male	0	0.00	2	4.65
	Female	2	100.00		
3.Emalaheni	Male	0	0.00	2	4.65
	Female	2	100.00		
4.Govan Mbeki	Male	2	50.00	4	9.30
	Female	2	50.00		
5.Lekwa	Male	4	100.00	4	9.30
	Female	0	0.00		
6.Mbombela	Male	4	100.00	4	9.30
	Female	0	0.00		
7.Mkhondo	Male	2	100.00	2	4.65
	Female	0	0.00		
8.Msukaligwa	Male	2	100.00	2	4.65
	Female	0	0.00		
9.Nkomazi	Male	2	50.00	4	9.30
	Female	2	50.00		
10.Pixley ka Seme	Male	2	100.00	2	4.65
	Female	0	0.00		
11.Steve Tshwete	Male	2	100.00	2	4.65
	Female	0	0.00		
12.Umjindi	Male	2	100.00	2	4.65
	Female	0	0.00		
13.Victor Khanye	Male	4	66.66	6	13.95
	Female	2	33.33		
N	**Male**	**30**	**69.76**	**43**	**100**
	Female	**13**	**30.23**		

Results

(b) Inferential – model fit

Tests	Fit Statistic	Value	Description
Likelihood ratio	Chi^2_bs (6)	61.113	Baseline vs saturated
	P > Chi^2	0.000	
RMSEA	90% CI, lower bound	0.000	Root mean squared error approximation
	90% CI, upper bound	-	
	pclose	< = 0.05	Probability
Information criteria	AIC	136.968	Akaike information criterion
	BIC	163.033	Bayesian information criterion
Baseline comparison	CFI	1.000	Comparative fit index
Size of residuals	SMMR	0.000	
	CD	0.873	Coefficient of determination

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Results

(b) Inferential – impact of extension service

Measurement	Unstandardized Estimates				Standardized Estimates			
	B	**SE**	**Z**	**P> | z |**	**Beta**	**SE**	**Z**	**P> | z |**
KT← Ext. Service	1	Con	18.36	0.00	0.813	1419.13	0.00	1.000
_Cons	1.310				2.833***	0.345	8.20	0.000
IC← Ext. Service	1.059***	0.069	18.44	0.00	0.882***	0.028	31.95	0.000
_Cons	1.286***				2.846	0.347	8.21	0.000
DC← Ext. Service	0.955***	0.727	18.33	0.00	0.761	1327.78	0.00	1.000
_Cons	1.333***				2.828***	0.345	8.21	0.000
Use←Ext. Service	0.180***	0.040	26.96	0.00	0.263	458.79	0.00	1.000
_Cons	1.071***				4.160***	0.479	8.68	0.000
Cov (e.KT, e.IC)	0.000	0.024	0.01	0.994				
Cov (e.KT, e.DC)	0.000	0.036	0.00	0.999				
Cov (e.KT, e.Use)	0.000	0.019	0.01	0.994				
Cov (e.IC, e.DC)	0.000	0.025	0.00	0.999				
Cov (e.IC, e.Use)	0.000	0.018	0.02	0.985				
Cov (e.DC, e.Use)	0.000	0.189	-0.02	0.981				
r (e.KT, e.IC)					-0.000	4556.02	-0.00	1.00
r(e.KT, e.DC)					0.001	5712.66	0.00	1.00
r(e.KT, e.Use)					0.001	1325.94	0.00	1.00
r (e.IC, e.DC)					0.000	3819.57	0.00	1.00
r (e.IC, e.Use)					0.005	887.23	0.00	1.00
r(e.DC, e.Use)					-006	1130.91	-0.00	1.00

Conclusion

- The positive significant impact of extension service to marketing information indicators in the smallholder farming sector in Mpumalanga province was well-established in this study.

- In view of the fact that smallholder farming are known for their lack of consistent production, access to formal markets and capacity to source marketing information, it is recommended that extension services quality be prioritised with view to improve the smallholder access to marketing information.

- Classifying smallholder farmers into their educational profiles and transferring the marketing information to these cluster of farmers in routine basis may help in improving the status of smallholder commercialization in the aforesaid province.

- On the basis of the above-mentioned recommendations, it is therefore recommended that extension workers be supported through formal education and training, capacity building and incentive improvement. Without improving the extension workers' working condition after attaining their educational improvements, it may impact adversely to the workers' motivation during execution of their services. In addition, it may be a good idea that the Department of Agriculture in Mpumalanga province, revisits its extension policy in order to accommodate some of these recommendations.

Thank You