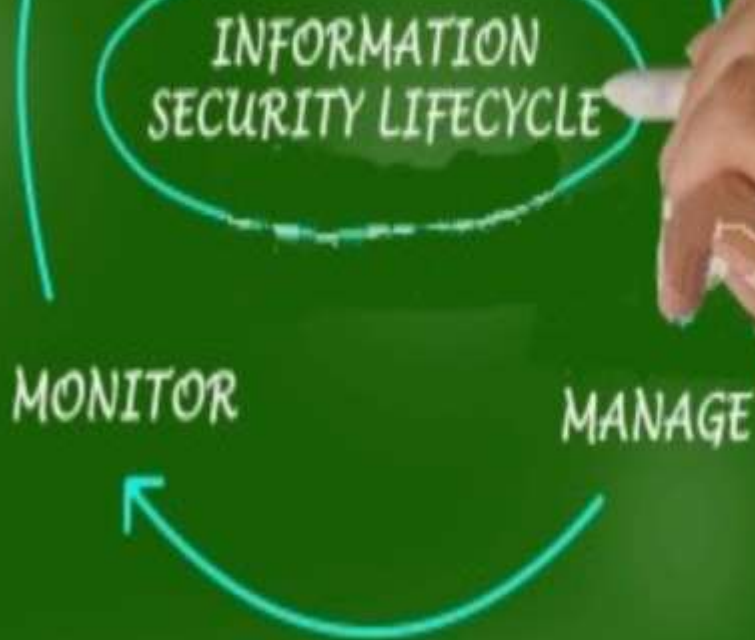


African Journal of Business Management

Volume 10 Number 18 28 September, 2016

ISSN 1993-8233



*Academic
Journals*

ABOUT AJBM

The African Journal of Business Management (AJBM) is published twice monthly (one volume per year) by Academic Journals.

African Journal of Business Management (AJBM) is an open access journal that publishes research analysis and inquiry into issues of importance to the business community. Articles in AJBM examine emerging trends and concerns in the areas of general management, business law, public responsibility and ethics, marketing theory and applications, business finance and investment, general business research, business and economics education, production/operations management, organizational behaviour and theory, strategic management policy, social issues and public policy, management organization, statistics and econometrics, personnel and industrial relations, technology and innovation, case studies, and management information systems. The goal of AJBM is to broaden the knowledge of business professionals and academicians by promoting free access and providing valuable insight to business-related information, research and ideas. AJBM is a weekly publication and all articles are peer-reviewed.

Contact Us

- Editorial Office:** ajbm@academicjournals.org
- Help Desk:** helpdesk@academicjournals.org
- Website:** <http://www.academicjournals.org/journal/AJBM>
- Submit manuscript online** <http://ms.academicjournals.me/>

Editor-in-Chief

Prof. Wilfred Isioma Ukpere

*Department of Industrial Psychology and People Management,
Faculty of Management,
University of Johannesburg,
South Africa.*

Editors

Dr. Amran Awang

*Faculty of Business Management,
02600 Arau, Perlis, Malaysia*

Prof. Giurca Vasilescu Laura

*University of Craiova, Romania
13, A.I. Cuza, 200585, Craiova, Dolj,
Romania.*

Associate Editors

Dr. Ilse Botha

*University of Johannesburg
APK Campus PO Box 524 Aucklandpark 2006
South Africa.*

Dr. Howard Qi

*Michigan Technological University
1400 Townsend Dr., Houghton, MI 49931,
U.S.A.*

Dr. Aktham AlMaghaireh

*United Arab Emirates University
Department of Economics & Finance
United Arab Emirates.*

Dr. Haretsebe Manwa

*University of Botswana
Faculty of Business
University of Botswana
P.O. Box UB 70478
Gaborone Botswana.*

Dr. Reza Gharoie Ahangar

*Islamic Azad University of Babol,
Iran.*

Dr. Sérgio Dominique Ferreira

*Polytechnic Institute of Cavado and Ave
Campus IPCA, Lugar does Aldão, 4750-810. Vila
Frescainha,
Portugal.*

Prof. Ravinder Rena

*Department of Economics
University of the Western Cape
Private Bag: X17
Modderdam Road
Bellville 7535
Cape town, South Africa*

Dr. Shun-Chung Lee

*Taiwan Institute of Economic Research
No. 16-8, Dehuei Street, Jhongshan District,
Taipei City 104,
Taiwan.*

Dr. Kuo-Chung Chu

*National Taipei University of Nursing and Health
Sciences No. 365, Min-Te Road, Taipei,
Taiwan.*

Dr. Gregory J. Davids

*University of the Western Cape
Private Bag x17, Bellville 7535,
South Africa.*

Prof. Victor Dragotă

*Bucharest Academy of Economic Studies, Department
of Finance
Bucharest, Sector 1, Piata Romana no. 6, Room 1104,
Romania*

Dr. Maurice Oscar Dassah

*School of Management, IT and Governance
University of KwaZulu-Natal
Post Office Box X54001
Durban
4000
South Africa.*

Prof. Joseph Offiong Udoayang

*University of Calabar
P.M.B 1115, Calabar. Cross River State, Nigeria.*

Prof. Robert Taylor

*University of KwaZulu-Natal
Varsity Drive, Westville
South Africa.*

Dr. Nazim Taskin

*Massey University - Albany
Quad Building A, Room 3.07
Gate 1, Dairy Flat Highway (State Highway 17)Albany,
New Zealand*

Prof. João J. M. Ferreira

*University of Beira Interior (UBI)
Estrada do Sineiro, Pólo IV 6200 Covilhã,
Portugal.*

Dr. Izah Mohd Tahir

*Universiti Sultan Zainal Abidin
Gong Badak Campus, 21300 Kuala Terengganu,
Terengganu, Malaysia.*

Dr. V. Mahalakshmi

*Panimalar Engineering College
7-A,CID Quarters, Mandaveli,Chennai-600028,
Tamilnadu,
India.*

Dr. Ata Allah Taleizadeh

*Iran University of Science and Technology
Faculty of Industrial Engineering,
Iran University of Science and Technology,
Narmak, Tehran, Iran.*

Dr. P.S. Vohra

*Chandigarh Group of Colleges, Landran, Mohali, India
#3075, Sector 40 D
Chandigarh, Pin code 160036*

Dr. José M. Merigó

*University of Barcelona
Department of Business Administration, Av. Diagonal
690, Spain.*

Prof. Mornay Roberts-Lombard

*Department of Marketing Management,
C-Ring 607, Kingsway campus, University of
Johannesburg, Auckland Park, Johannesburg, 2006,
South Africa*

Dr. Anton Sorin Gabriel

*Carol I Boulevard, No. 11, 700506, Iasi,
Alexandru Ioan Cuza University Iasi,
Romania.*

Dr. Aura Emanuela Domil

*31 Horia Creanga, zip code 300253, Timisoara,
West University from Timisoara,
Faculty of Economics and Business Administration, Romania.*

Dr. Guowei Hua

*NO. 3 Shangyuancun, Haidian District, Beijing 100044,
School of Economics and Management,
Beijing Jiaotong University, China.*

Dr. Mehdi Toloo

*Technical University of Ostrava,
Ostrava, Czech Republic*

Dr. Surendar Singh

*Department of Management Studies, Invertis University
Invertis village, Bareilly -
Lucknow Highway, N.H.-24, Bareilly
(U.P.) 243 123 India.*

Dr. Nebojsa Pavlovic

*High school "Djura Jaksic"
Trska bb, 34210 Raca, Serbia.*

Dr. Colin J. Butler

*University of Greenwich
Business School, University of Greenwich, Greenwich, SE10
9LS,
London, UK.*

Prof. Dev Tewari

*School of Economics and Finance
Westville Campus University of Kwa-Zulu
Natal (UKZN) Durban, 4001
South Africa.*

Dr. Paloma Bernal Turnes

*Universidad Rey Juan Carlos
Dpto. Economía de la Empresa
Pº de los Artilleros s/n
Edif. Departamental, Desp. 2101
28032 Madrid, España*

Dr. Jurandir Peinado

*Universidade Positivo
Rua Silveira Peixoto, 306
Zip 80240-120 Curitiba – PR – Brazil*

ARTICLES

Differentials in patients' satisfaction with routine radiological services: A cross-sectional study in a developing country	429
Ogbonnia Godfrey Ochonma, Bartholomew Soludo Eze and Charles Ugwoke Eze	
Application of the grounded theory in building leadership models by utilizing the leadership styles. A focus on Pentecostal churches in Zimbabwe	440
Judith Mwenje	
Factors influencing smallholder participation in the pigeon peas market: A case of tete province, Mozambique	451
David Muronda and Marian Tukuta	

Full Length Research Paper

Differentials in patients' satisfaction with routine radiological services: A cross-sectional study in a developing country

Ogbonnia Godfrey Ochonma^{1*}, Bartholomew Soludo Eze¹ and Charles Ugwoke Eze²

¹Department of Health Administration and Management, Faculty of Health Sciences and Technology, College of Medicine, University of Nigeria, Enugu Campus, Enugu State, Nigeria.

²Department of Medical Radiography and Radiological Sciences, Faculty of Health Sciences and Technology, College of Medicine, University of Nigeria, Enugu Campus, Enugu State, Nigeria.

Received 8 June, 2016; Accepted 5 August 2016

Patient satisfaction survey with health care services is a growing concept in Nigeria where study on the subject is just beginning to gather momentum. Satisfaction with health care services has not been given the attention it deserves, let alone comparing institutional differences on the subject. The purpose of this study was to understand the factors that may account for differentials in patient satisfaction with radiological services in a public and a private hospital. A cross-sectional descriptive study was carried out in two hospitals of public and private nature in Enugu metropolis, Southeast Nigeria. Three hundred respondents responded to the survey; one hundred and forty five from the public hospital and one hundred and fifty five from the private hospital. Males were ninety two 92(30.7%) in number while females constituted the majority with two hundred and eight 208(69%). The data was analyzed in terms of descriptive statistics using 95% confidence interval. ANOVA test for significance, chi-square for association and regression for differences were applied in the analysis. Patient satisfaction with radiological services was better and in favour of the private hospital which registered a mean level of satisfaction of 3.96 as against the public hospital that registered a mean level of satisfaction of 3.43, at 95% confidence interval. Respondents at both facilities were not impressed by radiographers/nurses in nine same service areas and as such performances in those areas were poorly rated and were seen as sources of dissatisfaction. Providers of health care services and radiographers in particular need special orientation in customer relations to foster good patient satisfaction strategies. Governments and the university system could help in this direction by improving on the curricula of radiographers to include professional code of conduct and patient-centredness while in the university.

Key words: Differentials, patients, satisfaction, routine, radiological, services, public, private, professional, conduct.

INTRODUCTION

The importance of patients' satisfaction with health care services cannot be over emphasized especially in this era

of informed and educated patients. There are five main factors that determine patients' satisfaction with health

*Corresponding author. E-mail: ogbonnia.ochonma@unn.edu.ng; godoch002@yahoo.com.

services (Hoe, 2007; Ayat et al., 2009; Chingarande et al., 2013): Reliability of services, responsiveness to customer needs, assurance-guaranteeing comfort to patients, empathy and tangibles like physical appearance of the departments and quality of the equipment. Other factors like providers' professional skill and conduct have also been found to influence patients' satisfaction with health care (Ayat et al., 2009; Chingarande et al., 2013; Beyer et al., 2010). Survey of the literature reveals that patients' satisfaction with health care services though has long been conducted in developed countries has rarely been investigated in developing countries let alone differentials in health care services satisfaction between public and private healthcare institutions. This work was an attempt to not only understand patients' satisfaction with radiological services, but also investigate the factors that may account for differences in patients' satisfaction between public and private healthcare institutions.

Patients' satisfaction constitutes a significant indicator of the health care quality (Johansson et al., 2002; Laschinger et al., 2005; Anastasios et al., 2013). Studies (Zamil, 2012; Salam et al., 2010) involving private and public hospitals, found that there were significant statistical differences of the impact of health service quality on patients' satisfaction between hospitals of public and private organisations and the impact was found to be better in the private hospitals. In a study (Ugwu, 2009) on patients' perception of care during special radiological examination in Nigeria, it was observed that indeed, the way in which patients view the care that they receive from their health care providers can greatly influence their satisfaction with their examinations. Having radiologists directly communicate results to patients would not only increase the speed at which imaging results are delivered to patients and improve patient satisfaction (Pat et al., 2011; Peteet et al., 1992), but could also help improve test result follow-up. The majority of complaints in a radiology examination as described by Salazar et al. (2013) was a failure to provide patient-centered care. Complaints regarding quality were associated with operational systems, safety and professionalism. Delays accounted for some of the complaints and about half of the complaints concerned radiology staff members.

Results from a survey in Nigeria (Eze et al., 2006) on obstetric ultrasound scan service showed that majority of the patients were not given adequate information required to make a knowledgeable decision about their scan. Large number of the women waited for a long time (1-4 h) before their scan. About half of the respondents were satisfied with the way the result of the scan was communicated to them. That study concluded that full implementation of informed consent, reduced waiting time, better communication, explanation and counseling of scan findings to patients would improve the quality of obstetric ultrasound service. Another survey (Ugwu et al., 2009) on patients' expectations of radiology staff noted that service delivery should be improved as a requirement,

that relatives should be present during examination, that friendliness should be improved and that radiology staff should be more courteous. Indicators of satisfaction for patients during radiological examination (Ochonma et al., 2015) were the observation of professional boundaries with patients and equity in treatment for the patients during the radiological examination. Others include patients receiving individualized service during examination, radiographers' observation of the principle of confidentiality, timely completion of examination, radiographers' serving patients' best interest and radiographers' demonstration of appropriate skills in effective communication while failures in explanation of what to expect during the exam and explanation of what to expect after the exam were seen as sources of dissatisfaction

It has been argued that consumer perception of health care is largely ignored by health care providers in low income countries (Hall, 1995; Rajani et al., 2011; Nyongesa et al., 2014), let alone comparing institutional differences. The search of the literature confirms that a growing progress was being made to understand patients' satisfaction with health care services in Nigeria. The aim and objective of this study was to determine some of the factors that may influence patients' satisfaction with health care services, particularly radiological services in a developing country like Nigeria. The rationale behind this study was to understand how radiological services could be improved based on the information gathered so as to better address the concerns of the patients and ultimately improve their satisfaction with radiological services.

MATERIALS AND METHODS

This was a cross-sectional, descriptive study in which three hundred respondents (patients) who had received radiological services as out-patients in one public-tertiary hospital (University of Nigeria Teaching Hospital, Ituku/Ozalla) and one private health care institution (Life Chart Diagnostic Centre, Abakpa Nike) both in Enugu, Southeast Nigeria were surveyed to ascertain their levels of satisfaction with the services they had received. The respondents were chosen among outpatients who had visited the hospitals (public/private) for radiological examinations. In no particular order, patients were scheduled for examination which was held on the clinic day of every Monday for the public hospital. To allow for chance alone determine who gets included in our sample, random sampling technique was used in which we made a determination that every second examinee who shows up for the examination regardless of gender gets included in our sample. The public-tertiary hospital sees about forty patients on its clinic day of every Monday, so about twenty patients got to be interviewed on each clinic day of Monday. The same process was repeated for the private clinic that sees about (25) patients on its clinic day of every Friday and about (13) patients got to be interviewed on each clinic day of every Friday until the determined sample sizes for both hospital were reached.

The survey was conducted between March and July 2013. The validated questionnaire was used by radiography students who had training in questionnaire administration to collect information from the respondents. Each respondent's consent was obtained as well as ethical clearance from the institutions before the questionnaire

administration. The indicators used in the assessment of satisfaction with radiological services included patient preparation for specific test/exam, registration process at the front desk/courtesy of staff, waiting time before procedure, courtesy of radiographers/staff, explanation of what to expect during the exam, how questions were answered by the radiographers/staff, making an appointment, choice of appointment time, explanation of the billing process, explanation of what to expect after the exam, level of attention by the radiographers/staff, and the physical appearance of the facility and quality of the equipment.

The data was analyzed in terms of descriptive statistics using 95% confidence interval. ANOVA test for significance, chi-square for association and regression for differences in data were applied.

Sample size calculation

The appropriate sample size for the work was achieved using the formula which was developed by (Charan et al., 2013) for calculating sample size in medical research and the findings from previous work (Iliyasu et al., 2010) in which eighty three percent (83%) of the patients were satisfied with overall health services in the hospital. The calculated sample size was initially one hundred and eleven (111) for each hospital and two hundred and twenty two (222) for both hospitals, but in order to improve on the result and conclusion of the study and more so because of patient availability, the sample size was increased to three hundred (300) respondents, one hundred and fifty five (155) for the private hospital and one hundred and forty five for the public hospital. Few patients whose number was not tracked decided not to partake in the study. They decided mostly not to partake because of time factor.

RESULTS

Socio-demographic statistics of the respondents

As noted in Table 1, there were three hundred respondents and those under thirty years of age constituted the majority and numbered one hundred and forty two 142 (47.3%). One hundred and forty five (48.3%) questionnaires were administered in the public hospital and one hundred and fifty five (51.7%) questionnaires in the private hospital. There were 92(30.7%) males and 208 (69.3%) females respondents. Those with college/university education 115 (38.3%) constituted the majority. When asked about their monthly income, majority 92 (30.7%) stated they had no income. The means of payment for services received was mostly self-pay as the majority 261 (87.0%) indicated just that. Majority of the respondents 112 (21.0%) were married with children and about half of them 154 (51.3%) indicated that they have had radiological services within the last one month prior to the interview. Those that indicated that the radiological service they received was their first experience with their centre were in the majority 200 (66.7%).

Table 2 shows the mean scores of the respondents pertaining to the questions on satisfaction with the radiology centres (public/private) they had attended. A likert scale with five different options-very dissatisfied, dissatisfied, neutral, satisfied and very satisfied was

provided to the respondents as answer options to the questions on satisfaction. Some of the indicators of satisfaction examined included making an appointment, choice of appointment times, the preparation for specific test/exam, the registration process at the front desk/courtesy of staff and explanation of the billing process. The score points of one and two were seen as dissatisfaction, point of three seen as neutral response and points of four and five were seen as satisfaction with the radiological services. The mean score for the respondents that visited the public radiology service centre was 3.41 while that of the private radiology service centre was 3.96. The overall average mean score between the public and the private hospitals of 3.69 was within these ranges as above.

Also, the mean level of satisfaction experienced by the respondents showed that, the mean level of satisfaction for those that went to the public radiology centre is 3.43 while that of those that went to the private radiology centre is 3.96. The overall average mean level of satisfaction of 3.71 is within these ranges for the public and private hospitals.

To test further whether this result was significant and thus establish the existence of difference in the level of patients' satisfaction with radiological examination between the private and the public hospitals, the ANOVA test was applied. The results are presented in Table 3. The ANOVA results (Table 3) show that F-values of 49.819 (mean scores) and 42.035 (mean level of satisfaction) which were greater than the critical F-value of 2.60 indicate that there was a significant difference (as p-values < 0.05) among the mean scores and mean levels of satisfaction between patients that went to the private hospital and patients who went to the public hospital. Therefore, there is a difference in the level of patients' satisfaction between the private and the public hospitals, patients having to express better satisfaction with the private hospital pertaining to radiological services.

As presented in the cross-tabulation (Table 4) and in line with the results presented in the chi-square (Table 5), which gave a Chi-Square value of 55.033 > Chi-square (critical value) of 9.49 and p < 0.05, respondents' level of satisfaction is associated with the type of hospital where they received their radiological services, patients who attended the private hospital having to express higher satisfaction level compared with patients who attended the public hospital.

Analyzing for the predictive indicators/factors for radiological services that accounted for overall satisfaction in the public and the private hospitals

Public hospital

It was also important to understand the indicators of

Table 1. Socio-demographic statistics of the respondents.

Demographic characteristics	Options	Frequency	Percent
Age	under 30	142	47.3
	31-40	61	20.3
	41-50	42	14.0
	over 50	55	18.3
Type of centre	Public	145	48.3
	Private	155	51.7
Gender	Male	92	30.7
	Female	208	69.3
Highest level of education	no school	17	5.7
	Elementary	37	12.3
	high school	110	36.7
	college/university	115	38.3
	higher education (professional or post-graduate)	20	6.7
	literacy classes only	1	.3
Marital status	Married	63	21.0
	Separated	2	.7
	Divorced	2	.7
	married with children	122	40.7
	married without children	32	10.7
	Single	79	26.3
	Length of time as radiological service patient	one month	154
two months		11	3.7
three to six months		27	9.0
seven months to two years		25	8.3
three years to 5 years		23	7.7
five years and above		24	8.0
can't say		36	12.0
Occupation		Student	56
	government employee	54	18.0
	private employee	41	13.7
	Unemployed	41	13.7
	self employed	39	13.0
	Retired	5	1.7
	Teaching	3	1.0
	Trader	49	16.3
	Applicant	2	.7
	Farming	8	2.7
	Rev. sister	1	.3
Priest	1	.3	
Average monthly income	no income	92	30.7
	#5,000 and below	36	12.0
	#5,000 and #20,000	51	17.0
	#21,000 and #50,000	67	22.3
	#51,000 - #100,000	39	13.0
	#101,000 - 200,000	9	3.0
	#201,000 - 400,000	3	1.0
	#401,000 - #600,000	3	1.0

Table 1. Cond.

	Insurance	16	5.3
	Self-pay	261	87.0
	free medical care	12	4.0
Main source of payment for radiological services	Children	1	.3
	Parents	6	2.0
	Pension	1	.3
	Allowance	1	.3
	NHIS	2	.7
First experience with centre	Yes	200	66.7
	No	100	33.3

Table 2. Showing differences in the level of patients' satisfaction between the private and the public hospitals: Descriptive statistics.

Parameter	Type of radiology service centre	N	Mean	Std. deviation	Std. error	95% Confidence Interval for mean		Minimum	Maximum
						Lower bound	Upper bound		
Mean score	Public	145	3.4085	0.80828	0.06712	3.2758	3.5412	1.00	5.00
	Private	155	3.9578	0.51692	0.04152	3.8758	4.0398	1.15	5.00
	Total	300	3.6923	0.72655	0.04195	3.6098	3.7749	1.00	5.00
Mean level of satisfaction	Public	145	3.4345	0.84009	0.06977	3.2966	3.5724	1.00	5.00
	Private	155	3.9613	0.54515	0.04379	3.8748	4.0478	1.00	5.00
	Total	300	3.7067	0.75000	0.04330	3.6215	3.7919	1.00	5.00

Table 3. Showing ANOVA test for significance in patients' satisfaction levels between the private and the public institutions.

Parameter	Type of radiology service centre	Sum of squares	df	Mean square	F	Sig.
Mean scores	Between groups	22.607	1	22.607	49.819	0.000
	Within groups	135.227	298	0.454		
	Total	157.834	299			
Mean level of satisfaction	Between groups	20.791	1	20.791	42.035	0.000
	Within groups	147.395	298	0.495		
	Total	168.187	299			

Table 4. Cross-tabulation between type of institution and satisfaction.

Radiology service centre	Mean level of satisfaction					Total
	Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied	
Public	3 2.1%	12 8.3%	61 42.1%	57 39.3%	12 8.3%	145 100.0%
Private	1 0.6%	0 0.0%	20 12.9%	117 75.5%	17 11.0%	155 100.0%
Total	4 1.3%	12 4.0%	81 27.0%	174 58.0%	29 9.7%	300 100.0%

Table 5. Chi-square tests.

Parameter	Value	df	Asymp. Sig. (2-sided)
Pearson chi-square	55.033 ^a	4	0.000
Likelihood ratio	61.081	4	0.000
Linear-by-linear association	36.963	1	0.000
Number of valid cases	300		

^a2 cells (20.0%) have expected count less than 5. The minimum expected count is 1.93.

Table 6. Descriptive statistics on indicators of satisfaction- public hospital.

Variable	Mean	Std. deviation	N
What is your overall satisfaction of care received	3.6897	1.13967	145
Making an appointment	3.2759	1.16358	145
Choice of appointment times	3.3172	1.23437	145
The preparation for your specific test/exam were adequately explained	3.5241	1.20233	145
Registration process at the front desk/courtesy of staff	3.3931	1.21505	145
Explanation of the billing process and procedure	3.3034	1.15063	145
Waiting time before procedure	3.1448	1.19594	145
Courtesy of the nurse/radiographer	3.7034	1.15545	145
Explanation of what to expect during the exam	3.2414	1.08830	145
How questions were answered by the staff	3.5103	1.00773	145
Explanation of what to expect after the exam	3.0207	1.06373	145
The level of attention provided by the nurse/radiographer	3.6552	1.10792	145
The physical appearance of the facilities and the quality of the equipment	3.5310	1.06102	145

Selecting only cases for which is this a private or public radiology service center = public.

Table 7. Model summary for public hospital.

Model	R		R square	Adjusted R square	Std. error of the estimate
	Is this a private or public radiology service center = public (Selected)				
1	0.850 ^a		0.722	0.696	0.62801

satisfaction that had predictive values for overall satisfaction in the public and the private hospitals. As presented in the Table 6 descriptive statistics on indicators, Table 7 the model summary, Table 8 the ANOVA analysis, and Table 9 showing the coefficients, the indicators of the radiological services that had significant and predictive effect on the overall satisfaction of care received by patients that used the public radiology hospital were adequate explanation of the preparation for specific test/exam ($p < 0.05$) and the physical appearance of the facilities and the quality of the equipment ($p < 0.05$). Other indicators as assessed by the respondents were not significant and as such the radiographer's performances in them were seen as sources of dissatisfaction. Some of the areas of dissatisfaction include ease of making appointment ($p > 0.05$), choice of

appointment time ($p > 0.05$), registration process at the front desk ($p > 0.05$), explanation of the billing process ($p > 0.05$), waiting time before procedure ($p > 0.05$) and courtesy of the radiographer/nurse.

Private hospital

As presented in Table 10 showing the descriptive statistics, Table 11 showing the model summary, Table 12 showing the ANOVA, Table 13 showing the coefficient, the indicators that had significant and predictive effect on the overall satisfaction of care received by patients that used the private facility were the level of attention provided by the radiographer/nurse ($p < 0.05$) and the physical appearance of the facility and the quality of the

Table 8. ANOVA^{b,c} for public hospital.

	Model	Sum of squares	df	Mean square	F	Sig.
1	Regression	134.974	12	11.248	28.519	0.000 ^a
	Residual	52.060	132	0.394		
	Total	187.034	144			

Predictors: (Constant), the physical appearance of the facilities and the quality of the equipment, choice of appointment times, explanation of what to expect after the exam, the preparation for your specific test/exam were adequately explained, explanation of what to expect during the exam, waiting time before procedure, how questions were answered by the staff, courtesy of the nurse/radiographer, explanation of the billing process and procedure, making an appointment, registration process at the front desk/courtesy of staff, the level of attention provided by the nurse/radiographer; ^bDependent Variable: what is your overall satisfaction of care received; ^cSelecting only cases for which is this a private or public radiology service center = public

Table 9. Coefficients^{a,b} for public hospital.

Model	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	-0.299	0.239		-10.249	0.214
making an appointment	-0.005	0.067	-0.005	-0.081	0.936
choice of appointment times	-0.018	0.063	-0.019	-0.282	0.778
the preparation for your specific test/exam were adequately explained	0.208	0.063	0.219	30.280	0.001
registration process at the front desk/courtesy of staff	-0.026	0.064	-0.028	-0.405	0.686
explanation of the billing process and procedure	-0.006	0.065	-0.006	-0.097	0.923
1 waiting time before procedure	0.063	0.057	0.066	10.108	0.270
courtesy of the nurse/radiographer	0.083	0.070	0.084	10.180	0.240
explanation of what to expect during the exam	0.119	0.063	0.114	10.875	0.063
how questions were answered by the staff	0.159	0.070	0.141	20.280	0.024
explanation of what to expect after the exam	0.008	0.066	0.007	0.116	0.908
the level of attention provided by the nurse/radiographer	0.113	0.078	0.110	10.449	0.150
the physical appearance of the facilities and the quality of the equipments	0.441	0.073	0.410	60.021	0.000

^aDependent Variable: What is your overall satisfaction of care received; ^bSelecting only cases for which is this a private or public radiology service center = public.

equipment ($p < 0.05$). Some of the service areas that respondents saw as dissatisfying were making an appointment ($p > 0.05$), choice of appointment times ($p > 0.05$), preparation for specific exam/test ($p > 0.05$), registration at the front desk/courtesy of staff ($p > 0.05$), explanation of the billing process ($p > 0.05$), waiting time before procedure ($p > 0.05$) and courtesy of the nurse/radiographer ($p > 0.05$).

DISCUSSION

Though patients indicated satisfaction with radiographers/staff at the public and the private institutions, the mean level of satisfaction was better in the private hospital. The indicators of satisfaction that had significant and predictive effects on the overall satisfaction received by the patients that used the public radiology facility were adequate explanation of the preparation for their specific

test/exam ($p < 0.05$) and the physical appearance of the facilities and the quality of the equipment ($p < 0.05$). Indicators that had significant and predictive effect on the overall satisfaction of care received by patients that used the private facility were the courtesy of the radiographer/staff ($p < 0.05$), level of attention provided by the radiographer/staff ($p < 0.05$) and the physical appearance of the facilities and the quality of the equipment ($p < 0.05$). Respondents at both facilities (public/private) agreed on only one thing, the physical appearance of the facilities and the quality of the equipment as the indicator/factor that affected their overall quality perception and satisfaction with radiological services and saw nine indicators as sources of dissatisfaction that included making an appointment, choice of appointment times, explanation of the billing process and procedure, waiting time before procedure, explanation of what to expect during the exam, how questions were answered by the radiographer/staff and

Table 10. Descriptive statistics: Private hospital.

Variable	Mean	Std. deviation	N
What is your overall satisfaction of care received	4.4323	.72092	155
Making an appointment	3.6000	1.01674	155
Choice of appointment times	4.1032	1.04555	155
The preparation for your specific test/exam were adequately explained	4.0710	0.94738	155
Registration process at the front desk/courtesy of staff	4.4645	0.79182	155
Explanation of the billing process and procedure	4.3419	0.99635	155
Waiting time before procedure	3.1032	1.11759	155
Courtesy of the nurse/radiographer	4.4581	.85462	155
Explanation of what to expect during the exam	3.3548	.73628	155
How many questions were answered by the staff	3.8710	.91673	155
Explanation of what to expect after the exam	3.2323	.69150	155
The level of attention provided by the nurse/radiographer	4.4774	.73268	155
The physical appearance of the facilities and the quality of the equipment	3.9419	.91338	155

Selecting only cases for which is this a private or public radiology service center = private.

Table 11. Model summary: Private hospital.

Model	R	R square	Adjusted R square	Std. error of the estimate
	is this a private or public radiology service center = private (Selected)			
1	0.785 ^a	0.616	0.584	0.46523

Predictors: (Constant), the physical appearance of the facilities and the quality of the equipment, the preparation for your specific test/exam were adequately explained, how questions were answered by the staff, waiting time before procedure, explanation of the billing process and procedure, explanation of what to expect after the exam, choice of appointment times, courtesy of the nurse/radiographer, explanation of what to expect during the exam, making an appointment, the level of attention provided by the nurse/radiographer, registration process at the front desk/courtesy of staff

Table 12. ANOVA^{b,c} of private hospital.

Model	Sum of squares	df	Mean Square	F	Sig.
1 Regression	49.305	12	4.109	18.983	.000 ^a
Residual	30.734	142	.216		
Total	80.039	154			

Predictors: (Constant), the physical appearance of the facilities and the quality of the equipment, the preparation for your specific test/exam were adequately explained, how questions were answered by the staff, waiting time before procedure, explanation of the billing process and procedure, explanation of what to expect after the exam, choice of appointment times, courtesy of the nurse/radiographer, explanation of what to expect during the exam, making an appointment, the level of attention provided by the nurse/radiographer, registration process at the front desk/courtesy of staff. ^aDependent Variable: What is your overall satisfaction of care received; ^cSelecting only cases for which is this a private or public radiology service center = private.

explanation of what to expect after the exam.

The ease of making an appointment to see a provider or anybody for that matter is highly appreciated by patients and customers in general. When making an appointment is made difficult, patients and customers in general could be highly disappointed and that will certainly lead to loss of customers. Institutions highly interested about their customers and more so about their

business bottom lines will make making an appointment very easy to promote customer retention and improve on their bottom lines. Choice of appointment times shows flexibility on the side of the institution and also their willingness to put the customer first. The customer sees him/herself as having a voice in the way the business is operated. Many a time, the billing process could be confusing especially for the self-paying candidates, the

Table 13. Coefficients^{a,b} of Private hospital.

Model	Unstandardized coefficients		Standardized coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	0.520	0.311		1.672	0.097
making an appointment	0.103	0.053	0.146	1.961	0.052
choice of appointment times	-0.034	0.047	-0.049	-0.719	0.474
the preparation for your specific test/exam were adequately explained	0.000	0.043	0.001	0.010	0.992
registration process at the front desk/courtesy of staff	0.016	0.090	0.018	0.178	0.859
explanation of the billing process and procedure	0.025	0.073	0.034	0.339	0.735
1 waiting time before procedure	0.021	0.037	0.032	0.564	0.574
courtesy of the nurse/radiographer	0.139	0.061	0.164	2.257	0.026
explanation of what to expect during the exam	-0.012	0.067	-0.012	-0.179	0.858
how questions were answered by the staff	0.033	0.049	0.042	0.674	0.501
explanation of what to expect after the exam	0.108	0.069	0.104	1.573	0.118
the level of attention provided by the nurse/radiographer	0.390	0.082	0.396	4.776	0.000
the physical appearance of the facilities and the quality of the equipment	0.160	0.051	0.203	3.107	0.002

a. Dependent Variable: what is your overall satisfaction of care received; b. Selecting only cases for which is this a private or public radiology service center = private.

uneducated and the elderly. Customers need to be educated up-front about a pending bill to enable them make an informed decision on whether to go on with a proposed encounter or not. This exercise encourages a customer to repeat his patronage with the organization. Waiting time before procedure must be well managed by businesses as this could determine the number of repeat customers. Time is highly valued by customers and they would like to spend as little of it as possible in any business engagement. Businesses that value their bottom lines seriously manage customers' time effectively. Excellent ways of doing this would be to space book appointment times for customers and also not to overbook customers in any given period. Explanation of what to expect during the exam, is highly valued by customers especially in radiology examination as customer are filled with anxiety because of the unknown. This is more so for the first timers in radiology examination and the elderly. How questions were answered by the radiographer/staff and explanation of what to expect after the exam equally are important for customer retention. Confused customers are liable to ask questions and they deserve answers that are effectively and politely communicated. Unfriendliness on the part of providers could drive customers away which invariably affects business bottom line. Also having to explain what to expect after radiology examination would manage post examination symptoms and feelings and that helps to relax patients in the event of any post examination feelings and symptoms as explained do manifest. If all the above items are well managed by an institution, they definitely will promote a sense of satisfaction after business encounter.

Statistical summation of the result equally revealed that

respondents were divided in their level of satisfaction with radiological services in the public and the private hospitals, the public hospital registering 3.43 mean level of satisfaction while the private hospital registered 3.96 mean level of satisfaction, showing that respondents were more satisfied with radiological services in the private hospital. This was confirmed by the ANOVA result that showed F-values of 49.819 (mean scores) and 42.035 (mean level of satisfaction) which were greater than the critical F-value of 2.60 which indicates that there was a significant difference (as p-values < 0.05) among the mean scores and mean levels of satisfaction between patients that went to the private hospital and patients who went to the public hospital in favour of the private hospital. Our result is similar to the result (Chingarande et al., 2013) where it was found that patients from the private hospital as against the public hospital viewed their interactions with radiographers more favourably than those from the public hospital. That study showed greatest differences in overall satisfaction, adequate time allocation for examination and favourable communication of results between radiographers and patients. Equally our result is also supported by Zamil (2012) and Salam et al. (2010) that found that there was a significant statistical difference of the impact of health service quality on patient's satisfaction between hospitals of public and private organizations and the impact was found to be better in the private hospital organization. Respondents in the study (Hall, 1995) listed sources of satisfaction as cleanliness of the waiting area and the courtesy/respect of the radiographer/staff which is also similar to our finding. Overall cleanliness and comfort of the examination room and staff skill were seen as sources of dissatisfaction in that study as opposed to our study that

found the physical environment and quality of equipment as sources of satisfaction. Radiographers according to Beyer et al. (2010) were courteous, friendly and communicated well which were sources of satisfaction but patients were not satisfied with more than necessary exposure to radiation which partly supports our finding. As opposed to our study result, Ugwu et al. (2009) on patients' expectations of radiology staff noted that service delivery should be improved as a requirement, that relatives should be present during examination, that friendliness should be improved and that radiology staff should be more courteous. A small percentage from that survey suggested that meals should be provided after examination and some believed that proper instruction would increase their satisfaction.

We can reliably assume that customer awareness and education on radiological services are needed in Nigeria to improve patient satisfaction with health care services as in the western countries. Radiographers equally need trainings in provider/patient relations and professional conduct to effect positive changes in the way patients perceive their services in the radiology departments. More so, strict enforcement of the professional rules/code of conduct for radiographers is highly needed to improve patients' satisfaction with radiological services. Patient/provider relations including patient-centred care organized through seminars and inclusion within the curricula of radiographers while still in the university are highly recommended to foster better patients' perception and satisfaction with radiological services.

Conclusions

Our study has shown that there are differences in satisfaction level with radiological services between the public and the private healthcare institutions. But more so, respondents at both facilities (public/private) did not see services in nine areas used as measures of radiologic satisfaction as sources of overall satisfaction with radiological services because they the patients were not impressed by the performance of radiographers/staff in these areas. Much and urgent work is needed to improve patients' satisfaction with radiological services especially as it affects the bottom lines of these institutions. Radiographers in the short run are to attend seminars and workshops on provider/patient relationships and patient-centred care. In the long run, professional/ethical conduct for radiographers needs to be included in the curricula for the benefit of radiographers while still in the university as it is not presently there.

Study limitations

Our study has a limitation that may affect its being generalized to the general population in that only two hospitals were included in the study. It would have been

more appropriate to increase the number of facilities studied to forestall this problem. Other than that, the study represents a hallmark in that valuable information has been gained concerning how patients' satisfaction could be bettered in radiological examinations taking into consideration the differences in the conduct of radiographers in the public and private hospitals.

RECOMMENDATIONS

Future studies could improve on our findings by increasing the number of hospitals to be studied and more so, more rural hospitals should be included in patients' satisfaction surveys to enable urban/rural comparisons in radiological examinations.

Conflict of Interests

The authors have not declared any conflict of interests.

ACKNOWLEDGEMENTS

The authors acknowledge the assistance of the post-graduate students who helped in the questionnaire administration and all those who took part in the study through their invaluable advices.

REFERENCES

- Anastasios M, Angeliki A, Evdokia A, Maria H, Michalis R, Evridiki P (2013). Assessment of patient satisfaction in public hospitals in Cyprus: a descriptive study. *Health Sci. J.* 7(1):28-40.
- Ayat N, Khalid M (2009). Consumer Satisfaction in social security institution Hospital: A case study of Punjab Employees Social Security Institution Hospital, Rawalpindi. *Pakistan Dev. Rev.* pp. 675-699.
- Beyer L, Diedericks P (2010). The attitude of radiographers towards patients in government hospitals in Bloemfontein. *South Afr. Radiographer* 48(2):22-27.
- Charan J, Biswara T (2013). How to calculate sample size for different study designs in medical research. *Indian J. Psychol. Med.* 35(2):121-126.
- Chingarande GR, Estina M, Mahachi CM, Majonga E, Karera A (2013). A comprehensive analysis of the effectiveness of communication between radiographers and patients at two hospitals. *Int. J. Adv. Res. Manage. Soc. Sci.* 2(6).
- Eze CU, Okaro AO (2006). Survey of patient satisfaction with obstetric ultrasound service at University of Nigeria Teaching Hospital, Enugu, Nigeria. *Niger. J. Health Biomed. Sci.* 5(1):93-97.
- Hall MF (1995). Patient satisfaction or acquiescence? Comparing mail and telephone survey results. *J. Health Care Mark.* 15(1):54-61
- Hoe J (2007). Quality service in radiology. *Biomed. Imag. Intervent J.* 3(3):24.
- Iliyasu Z, Abubakar IS, Abubakar S, Gajida UM (2010). Patients' satisfaction with services obtained from Aminu Kano Teaching Hospital, Kano. *Niger. J. Clin. Pract.* 13(4):371-376.
- Johansson P, Oleni M, Fridlund B (2002). Patient satisfaction with nursing care in the context of health care: a literature study. *Scand. J. Caring Sci.* 16(4):337-344.
- Laschinger HS, Hall LM, Pedersen C, Almost JA (2005). Psychometric analysis of the patient satisfaction with nursing care quality: an

- actionable approach to measuring patient satisfaction. *J. Nurs. Care Qual.* 20(3):220-230.
- Nyongesa MW (2014). Determinants of clients' satisfaction with healthcare services at Pumwani Maternity hospital in Nairobi-Kenya. *Int. J. Soc. Behav. Sci.* 2(2):011-017.
- Ochonma OG, Eze CU, Eze SB, Okaro AO (2015). Patients' reaction to the ethical conduct of radiographers and staff services as predictors of radiological experience satisfaction: a cross-sectional study. *BMC Medical Ethics.* 16:68 DOI 10.1186/s12910-015-0062-4
- Pat A, Basu JA, Ruiz-Wibbelsmann SB, Spielman VF, Van D, Jarrett K, Rosenberg JK, Glazer GM (2011). Creating a Patient-Centered Imaging Service: Determining What Patients Want. *Am. J. Roentgenol.* 196:605-610. 10.22/ARJ.10.5333
- Peteet JR, Stomper PC, Ross DM, Cotton V, Truesdell P, Moczynski W (1992). Emotional support for patients with cancer who are undergoing CT: semi structured interviews of patients at a cancer institute. *Radiology* 182:99-102.
- Rajani A, Salam B, Shayam SM, Ariwa IM (2011). Do we need to improve? A customer satisfaction survey in ultrasound suite. *Pak. Jr.* 21(2):84-88.
- Salam AA, Alshekteria AA, Alhadi HA, Ahmed M and Mohammed A (2010). Patient satisfaction with quality of primary health care in Benghazi, Libya. *Libyan J. Med.* 5. 10.3402/jm v.50 4873-Do.3402.
- Salazar G, Quencer K, Aran S, Abujudeh H (2013). Patient Satisfaction in Radiology: A Qualitative Analysis. *J. Am. College Radiol.* 10(7):513-517 www.JACR.org
- Ugwu AC, Shem SL, Erondu OF (2009). Patient's perception of care during special radiological examinations. *Afr. J. Primary Health Care Fam. Med.* 1(1):3.
- Zamil AM, Areiqat AY, Tailakh W (2012). The impact of health service quality on patients' satisfaction over private and public Hospitals in Jordan: A comparative study. *Int. J. Market. Stud.* 4(1):123.

Full Length Research Paper

Application of the grounded theory in building leadership models by utilizing the leadership styles. A focus on Pentecostal churches in Zimbabwe

Judith Mwenje

National University of Science and Technology (NUST) Bulawayo Zimbabwe.

Received 17 June, 2016; Accepted 14 September, 2016

Leader-follower relationship is one element that is crucial to the influence and growth of churches. When the leader maintains control and interacts constructively with the followers, understanding the levels that they are at; the likely outcome is a strong organization. The researcher using the grounded theory came up with the Ordinary-Questioning-Decision Making-Stability and the Contextualized Leadership-Follower models that could assist Pentecostal churches in Zimbabwe to build a strong committed membership base. The grounded theory allows data collection, analysis and eventual theory or model to stand in close relationship to one another. The constant comparative approach under the grounded theory was adopted. Christian leadership is not restricted to within church walls but is also effective in the public arena such as profit –making –organizations. The first model entails that leaders identify the levels that their members are at and groom them accordingly using the various leadership styles in the second model.

Key words: Grounded theory, constant comparative approach, leadership styles, transformational leadership, democratic leadership.

INTRODUCTION

A number of studies have attempted to come up with a correlation between leadership styles and the performance of an organisation. People learn to trust that the leader means what he/she says only when there is evidence of it in practice, when the values are operationalised in policies, procedures and rewards systems that are verified by collective experience (Marturano and Gosling, 2008: 5). The environment that organizations operate in is dynamic and requires applying the concepts of leadership styles in a contextualized aspect. One of the main problems that Pentecostal

churches face in Zimbabwe is the lack of in-depth understanding of the levels at which their members are at. This then leads to the lack of proper identification of leadership styles at a particular level resulting in churches reaching the expected outcome of a strong church.

Leadership theories

Yukl (2002: 11) classified leadership theories and

E-mail: judymwenje@gmail.com.

Authors agree that this article remain permanently open access under the terms of the [Creative Commons Attribution License 4.0 International License](https://creativecommons.org/licenses/by/4.0/)

empirical research on leadership under the following categories; the trait approach, the behavior approach, the power influence approach, the situational approach and the integrative approach. Leadership theories encompass leadership styles, therefore a study on leadership theories plays a significant role. The trait approach focuses on leadership characteristics or traits that make them great leaders. The focus is on the personal characteristics of a leader. The assumption underlying the theory was that some people are natural leaders who are endowed with certain traits not possessed by other people (Yukl, 2002). The style approach emphasizes on the behaviour and style of the leader (Hemphill and Coons, 1957; Likert, 1961; Robbins, 1998) that is what the leaders do and how they act. Two kinds of behavior were identified under this approach; the task and relationship behaviour. The situational approach contextualises leadership to the situation they are operating in. In other words different situations demand different kinds of leadership and therefore a leader has to be flexible and adaptable. It has two dimensions; the directive and a supportive dimension. The contingency theory approach to leadership tries to match leaders to relevant right settings. The leader's effectiveness is determined by how well his/her leadership style fits in the context he/she is operating in. The Path-Goal theory focuses on employee motivation by enhancing employee performance and satisfaction.

Leadership styles

The leadership style concept captures both the task orientation and the relationship aspect of behavior at the same time. Transactional leadership, laissez-faire, transformational leadership, servant leadership, democratic leadership, supportive leadership and theocracy were discussed in this paper. Transactional leadership is most often explained as a cost-benefit exchange between leaders and their followers (Kuhnert and Lewis, 1987). The transaction or exchange involves something of value between what the leader possesses or controls and what the follower wants in return for his/her services (Yukl and Van Fleet, 1992). It involves leaders clarifying goals and objectives, communicating to organize tasks and activities with the cooperation of their employees to ensure that wider organisational goals are met (Bass, 1990; 1998). The success of this type of leader-follower relationship depends on the acceptance of hierarchical differences and the ability to work through this mode of exchange. Transactional leadership is based on the assumption that subordinates and systems work better under a clear chain of command. Burns (1978 cited in Church and Waclawski, 1999: 1419) implies that the relationship of the leaders with followers is based on the exchange model that is rewards for work and favour for favour. Kuhnert (1994) agrees with Burns (1978) by

saying that the implicit belief in the leader-follower relationship is that people are motivated by rewards and penalties and that interpersonal relations can be characterized as more or less rational exchanges between agents exercising the power of choice. Workers are not motivated to give anything beyond what is clearly specified in their contract because transactional leadership encourages specific exchanges and a close connection between goals and rewards.

Transactional leaders exhibit specific leadership skills usually associated with the ability to obtain results, to control through structures and process, to solve problems, to plan and organise and work within the structures and boundaries of the organisation (Marturano and Gosling, 2008: 169). As the transactional style revolves around the formulation and maintenance of a contract, negotiation skills are essential for this type of leadership. Effective transactional leaders are capable of clarifying what is expected of the employees' performance, explaining how to meet such expectations, spelling out the criteria of the evaluation of their performance, providing feedback on whether the employee is meeting the objective and allocating results that are contingent to their meeting the objectives (Bass, 1985). Laissez-faire leadership is the avoidance or absence of leadership. They avoid making decisions, hesitate in taking action and are absent when needed (Avolio and Bass, 2004). The laissez-faire leader avoids active participation in the responsibility of setting goals, clarifying expectations, organising priorities or becoming involved when leadership direction is needed (Van et al., 2008). There is no attempt in assisting followers to reach their potential and to make them grow. Transforming leadership aims to move beyond people's wants and desires, thereby encouraging their real needs and values. It appeals to the moral values of followers in an attempt to raise their consciousness about ethical issues and to mobilize their energy and resources to reform institutions (Yukl, 2002: 241). Transformational leaders are visionary, solitary, inspirational figures consumed with very particular ideals and goals (Bass, 1990; Burke, 1986; Tichy and Devan, 1986; Zaleznik, 1977 cited in Church and Waclawski, 1999: 1419). Yukl (2002) identified four components of transformational leadership; idealized influence (charisma), inspirational motivation, intellectual stimulation and individualized consideration. According to Bass and Steidlmeier (1999), leadership is truly transformational only if it is focused on the interests of followers, not on the leader's self-interest. They distinguish between authentic transformational leadership and pseudo-transformational leadership. Authentic transformational leaders are committed to altruistic values and moreover conform their behavior to these values. Pseudo-transformational leaders are engaged in the pursuit of self-interest.

According to Bass (1985) there are four behavioural components that make up transformational leadership:

charisma, inspiration, intellectual stimulation and individualized consideration. Charisma is the ability to arouse emotions that will result in strong identification of the followers with the leader. This includes the leader providing vision and gaining respect and trust. The great leader is seen as servant first, and that simple fact is key to his greatness (Greenleaf, 1977: 7; Rezaei, Saleh et al., 2012) and one who places emphasis on the needs of the follower over self-interests (Laub, 1999: .81). The notion by Greenleaf is supported by a Biblical scripture in Mt. 23:11 which say: *But he that is greatest among you shall be your servant (NIV)*. A relevant definition of servant leadership focuses on the spirit of the leader and the task of the leader. The life of a servant leader is one that is marked by what flows or comes out of them, who they are and not by technique. It describes the inner nature, character and spirit of the leader. A servant leader is a moral leader whose purpose is accomplished when their subordinates become more autonomous (Dubrin et al., 2006). The servant leader is mission driven and goal oriented in all that he or she does. Servant leadership focuses both on the spirit of the leader and the task of the leader; it seeks to meet the needs of the follower through actions that empower the follower by the sharing of power and a practice of authenticity in leadership that favours the follower (Laub, 1999). It moves away from the command-control leadership styles and focuses on teamwork, egalitarianism and strong ethical behavior which involve followers in decision making and sacrificially provides quality and direction to the followers (Spears, 1996). Servant leadership promotes the valuing and development of people, the building of community, the practice of authenticity, the providing of leadership for the good of those led and the sharing power and status for the common good of each individual, the total organisation and those served by the organisation.

Democracy means the power of the people or the dominion of many whereby the people may participate in power directly or representatively (Jürgen, 2011). Democracy involves a participatory relationship where individuals are involved in the decision-making process to determine what needs to be done and how it should be done and by who. It involves the distribution of power between employees and managers so as to allow employee involvement in decision-making. It is characterized by a bottom-up approach and allows a constant flow of information up the chain of command. Members of the group take a participative role in the decision-making, the followers actively participate in the leadership process (Jürgen, 2011). It encourages creativity and team members are engaged in projects and decisions. The democratic leader plays three major roles; distributing responsibility, empowering others and aiding others in their deliberations (Jürgen, 2011), though he makes the final decisions. White and Lippitt (1960) emphasize group participation, discussion and group decisions encouraged by the leader. The major

characteristic of the democratic leadership style is participation (Chemers, 1984; Luthar, 1996; Denhardt and Denhardt, 2003 cited in Choi 2007). One of the benefits of the democratic leadership style is that it allows employee innovativeness and creativity which in turn benefits an organization. It is useful when there are difficult problems to solve which may require several different perspectives in order to come to an agreement. This approach takes time so it can slow decision-making. It can hinder situations where speed or efficiency is essential by trying to gather people's input. This type of leadership requires strong leaders that can maintain positivity, control and performance.

Supportive leaders tend to be friendly, approachable and pay attention to the welfare of members and helps, according to Yukl (2002) build and maintain an effective interpersonal relationship. The leaders make themselves available whenever members or subordinates need support, help or advice. This is likely to win the relationship and support of subordinates. Theocracy is a government by divine guidance or by officials who are regarded as divinely guided. It is a government by a specific institutional faith (Douthat, 2006: 24). The word theocracy comes from the Greek word which means 'rule by God'. Theocracy is bound up with a commitment to certain societal objectives that are characterised by equality, justice and community values (Wright, 1990: 5). The religious community is ordered by God through the intermediary of its founders and leaders who establish political, educational and legal institutions, that is the divine Law, directing the citizens toward what is best (Fraenkel, 2010: 346). According to Mkwanazi, the church as a theocracy run by the all-powerful ordained man of God, does not and should not lend itself to democratic principles of management and leadership (Nyathi, 2013: 280), Theocracy reflects God's character, values, beliefs and goals (Wright, 1990: 6). God becomes inseparable from the social objectives of the people and therefore the concept of God as reason gives normative weight to the description that the more human beings perfect reason the more they become like God (Fraenkel, 2010: 345).

Followers and leader-follower relationships

When focusing on followers the first important factor is a tie to the community or audience, described as ongoing intercourse with members of one group or more. The second factor is a rhythm that oscillates between isolation and immersion with followers; a balance between time spent alone in reflection (for the purpose of knowing one's own mind) and time spent amidst those one desires to lead. The third factor is the alignment of a leader's words and deeds, specifically noting stories must match embodiments so that the influence of leaders on followers is enacted through portrayal of a particular self as well

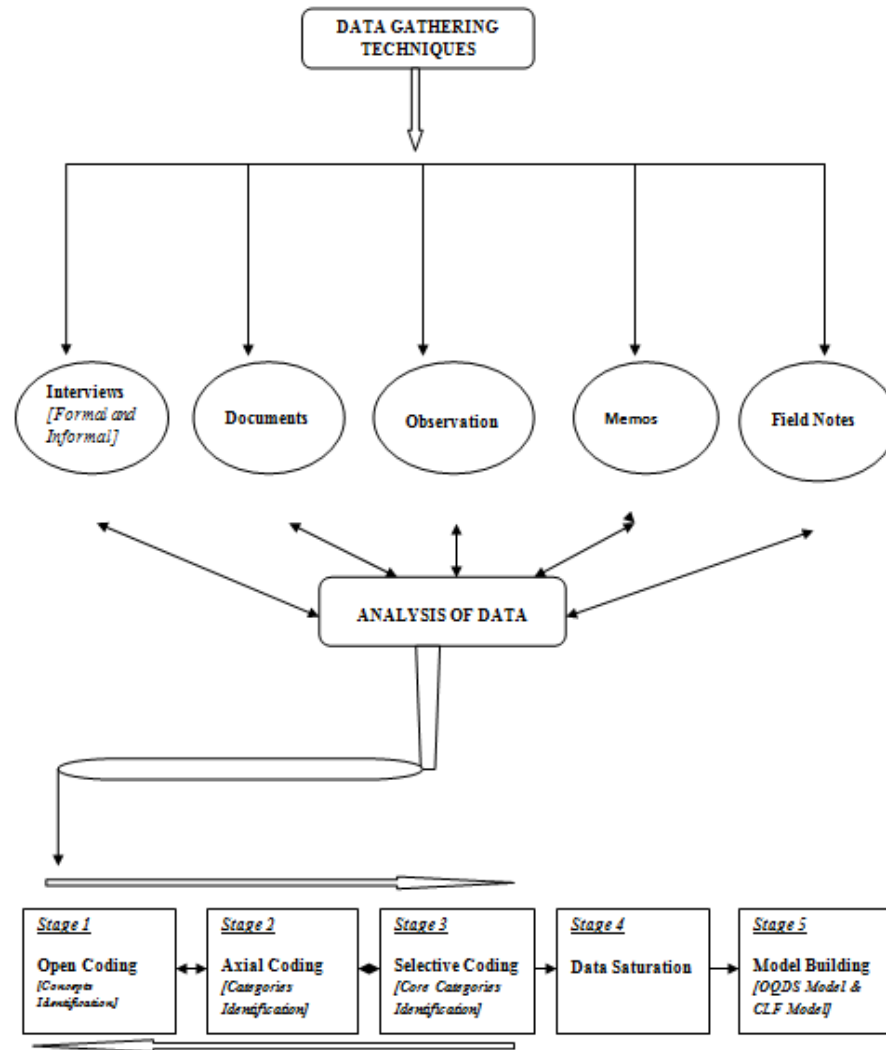


Figure 1. Grounded Theory: Collection and Analysis of Data; Source: Developed for this project.

through the statements, accounts and interpretations offered by a leader in discourse. The final factor identified is the centrality of choice on behalf of followers. He focuses his study on leaders that have attained some stability in a situation because followers have chosen to heed the leader's influence; thereby omitting dictators and others who rely upon force or solely upon authority as influence mechanisms. The leader-follower relations are concerned with how individual group members influence and persuade one another; at the perceptual level, leader-follower relations involve followers' perceptions and expectations of leaders.

METHODOLOGY

Hussey and Hussey (1997, p.249) identified two methods of analyzing qualitative data; the quantifying methods and the non-quantifying methods. The grounded theory, initially the work of Glaser and Strauss (1967) using the constant comparative method

by Maykut and Morehouse (1994, p.135) was adopted as shown in Figure 1. Under the grounded theory, data collection, analysis and eventual theory stand in close relationship to one another (Strauss and Corbin, 1998, p.12). According to Bryman and Bell (2003), data collection and analysis proceed in tandem, repeatedly referring back to each other. It allows the researcher to shape and reshape their data collection thereby allowing refining of data. Data is analyzed as one goes along rather than saving all the material up for one major analysis-fest, because themes will be emerging all the time and they need to be recognized, organized and taken account of (Fisher, 2010, p.418). Despite criticisms to this theory, the grounded theory remains one of the most influential strategies in the analysis of qualitative research (Bryman and Bell, 2003). Unlike other methods of qualitative analysis which acquire rigour through multiple levels of confirmation or triangulation (Mertens 1998). Grounded Theory builds an analytical case by constantly seeking new categories of evidence. The grounded theory is unencumbered by explicit expectations about what the research might find, or by personal beliefs and philosophies allowing the researcher to make discoveries without *a priori* knowledge. Other researchers using the same method are equally likely to derive empirically grounded explanations for other social processes which have equal substance

in any given field of investigation: the constant comparative method is not designed (as methods of quantitative analysis are) to guarantee that two analysts working independently with the same data will achieve the same results (Glaser 1967, p.103). The choice of this method was based on the fact that there is no preconceived theoretical framework and there is simultaneous data collection and analysis. According to Maykut and Morehouse (1994), the comparative method combines inductive category coding with a simultaneous comparison of all units of meaning obtained.

As each new unit of meaning is selected for analysis, it is compared to all other units of meaning and subsequently grouped (categorized and coded) with similar units of meaning. If there is no similar unit of meaning a new category is formed. In this process there is room for continuous refinement; initial categories are changed, merged or omitted; new categories are generated and new relationships can be discovered. The researcher followed the whole process of the grounded theory starting with the theoretical sampling which according to Sarantakos, (2005, p.166) is an ongoing process and works by selecting subsequent participants based on the information which emerges from the data already coded. Afterwards, open coding was carried out whereby data is broken down, thoroughly examined and similar categories are identified. Codes were therefore assigned to the concepts covered (Fisher, 2010, p.420). Axial coding was then carried out whereby data are put back together in new ways after open coding, by making connections between categories (De Vos et al. 2005, p.348). Selective coding was done to filter and code data which was deemed to be more relevant to the emerging concepts. Interview questions are therefore continuously reformulated to encompass the new and more focused direction of the research. The most emerging categories were the different levels that people are at when they come and are in church which then assisted the researcher to come up with a four stage model called the Ordinary-Questioning-Decision Making-Stability (OQDS). From the different levels other emerging important core categories were the different leadership styles that would be appropriate to the different levels. This then assisted the researcher to build a linking Model to the four stage model called the Contextualised Leadership Followers Model (CLF). The selective coding was the most important step towards defining the models for Pentecostal Church organisations. Data was continually collected up to the saturation point called theoretical saturation. According to Seldén (2005) theoretical saturation is when one keeps on collecting data until one receives only already known statements. Memos were used throughout the process to allow for ease of collection and analysis of data.

Applying the constant comparison

The constant comparative method is designed to aid the analyst in generating a theory that is integrated, consistent, plausible, close to the data" (Glaser and Strauss, 1967, p. 103). It refers to a process of maintaining a close connection between data and conceptualization, so that the correspondence between concepts and categories with their indicators is not lost. Attention to the procedure of constant comparison enjoins the researcher constantly to compare phenomena being coded under a certain category so that a theoretical elaboration of that category can begin to emerge. Constant comparison continues until core categories emerge from the data, and no significant new phenomena are reported that is until saturation point. The following stages by Maykut and Morehouse (1994, p.135) were adapted in analysing data; inductive category coding, simultaneous comparing of units of meaning, across categories, refinement categories, exploration of relationships and patterns and integration of data yielding an understanding of people and settings being studied. According to Saunders et al (2009:509), the theoretical sampling continues until theoretical saturation is reached, which occurs when data collection

ceases to reveal new data that are relevant to a category.

Inductive category coding

The researcher has to approach coding with an open mind, flexibility, and creativity. First, coding has to be performed as much as possible without predetermined ideas. The researcher has to keep an open mind when making sense of the data. The process of creating categories is mainly creative, the categories have to be grounded in data and researchers should approach coding with flexibility. As Strauss and Corbin (1990) recognize, researchers have to be flexible in the sense that "while we [Strauss and Corbin] set these procedures and techniques before you, we do not wish to imply rigid adherence to them"(p. 59). It is the interpretation and flexibility of the researcher what really matters. Therefore, although grounded theory provides with a set of procedures for coding, comparing, categorizing, etc, which may seem quite mechanical, the analytical process is highly interpretive by nature and fairly flexible to use.

Organization of qualitative data

Coding is the initial stage and most central in grounded theory (Bryman and Bell, 2003). The codes are labels which enable the qualitative data to be separated, compiled and organised (Charmaz, 2006). The labels come from a variety of sources; for example technical literature, interviewees and informants or from example technical literature, interviewees and informants or from the researcher's own imagination and vocabulary (Hussey and Hussey, 1997, p.266).

All interviews from founders were marked with an 'F' and a number was allocated to the letter depending with the church category. For the biggest church, the interview material for the founder will be marked 'F1-I'. For interviews with leaders from the biggest church, the interview material was marked L1-I. Interviews with followers were marked Fol1-I and observations were marked Fol1-O. For observations from the biggest church for both founders and leaders, the data collected was marked FI-O and L1-O, respectively. This was done for all six church categories.

Coding and categorizing the data

Box files clearly labeled were used for each data set using church categories and the data collection method. The box file which had data collected from interviews with the founder of the biggest church was marked Biggest-Interview and the same criteria used for all other research instruments and church categories. Within that box file data cards labeled clearly and dated for example DCF1-I (2June, 2011), meaning data card interview for founder of the biggest church done on 2 June, 2011. Comments would be written after each data collection using a separate data card labeled in line with the data collection card. DCF1-Irc (2 June, 2011) would mean the researcher's comments on the interview carried out with the founder of the biggest church. The comments are part of the analysis which are done simultaneously as data is collected or immediately after.

There is a repetitive interplay between collection of data and analysis of data (Bryman and Bell, 2003) and this shapes the next step in data collection including highlighting areas that need further investigations. Each church category had six box files and a total of thirty six box files were used. Within each data card label the narration of the participant is recorded as it is, then categories would be created as propounded by the grounded theory. The main

categories being open coding, axial coding, selective coding and the researcher also added the researcher comment to complement memos.

The most frequent words and phrases that were used by the respondents were used to categorize data into units. In newspapers or interview transcripts, the units might consist of a specific word appearing or being used (Denscombe, 2008). Some of the words or phrases were being used for the same events but with different phrases or statements.

The word and events were then categorized into representative categories. A representative category can either use the common word or a word/phrase that the researcher sees fit after going through what the participants meant by a word or a phrase. These words were recorded in the computer using a word package with columns and relevant titles such as main category, sub categories, new categories and miscellaneous for those that is outside the important content of the study. The number of categories derived from any particular data set depends on the focus of enquiry.

The researcher also identified patterns and processes, commonalities and differences (Miles and Huberman, 1994, p.9) in order to select any particular themes, relationships and inter-connections emerging from data collected. The following themes were emerging from each category that the researcher explains below: vision of the church, freedom, independence, vibrant leaders, empowerment, evangelism, miracles, healing, conferences, special Sundays, money, growth, love and relationships.

Refinement categories

Eventually, the researcher was able to reconstruct the important melodies contained in the phenomena being studied (Maykut and Morehouse, 1994). The researcher refined these categories using the main participants in the collection of data that is the founders of churches, the leaders, and then the followers. A cross case refinement was done. The researcher returned to previously coded sections and re-evaluated them adding interpretive layers on top of the basic description (Lee and Lings, 200: 246).

RESULTS AND DISCUSSION

The final result of research using Grounded Theory as a method of qualitative analysis is theory or model building (Mwenje, 2015). Grounded theory enables the researchers to focus their data collection and to build inductive middle-range theories through successive levels of data analysis and conceptual development (Denzin and Lincoln 2005). The constant comparative method facilitates the generation of theories, process, sequence and change pertaining to organizations, positions and social interaction (Glaser and Strauss, 1967). As indicated by the results, Pentecostal churches rely on followers for numerical growth, financial growth and spiritual growth and economic growth within the church. Pentecostal churches therefore need to build their people from within to a level where the members are loyal to the church and can participate in church activities such as giving financially and other projects such building projects. The OQDS and CLF models developed in this research are an important tool in achieving such results.

The influence of leaders on the followers becomes key to the development of Pentecostal churches. According

to Guti (2005), a leader is one who knows the way, goes the way and shows the way. In other words a leader is an active participant in the day to day activities of the church which include grooming people which is the basis upon which this model was built. Guti (2005: 25) further articulates the essence of a leader saying a leader is a person with a magnet in his heart and a compass in his hand. Building up from the findings, it is possible to construct a model based on four levels that would be found in all Pentecostal churches. These levels comprise the following; the ordinary level, the questioning level, the decision-making level and the stability level from where the Ordinary-Questioning-Decision Making-Stability (OQDS Model) as depicted. In building the levels, the researcher realised that Pentecostal church leaders attract the following people in their church discussed under the following four levels as depicted in Figure 2.

Level 1: Ordinary level

When Pentecostal churches attract people to their churches using the evangelistic strategies discussed in this study; the care ministry, hospital ministry, crusades, departmental meetings and conferences, the people come in the church and are and go through different levels. At the first level, the ordinary level there are two groups of people; the majority of those that are new in church, new converts and some that have been in the church for some time but have remained at this level because of their thinking patterns as will be discussed. Individuals at this level are heavily dependent on the church and church leadership. They have a conception that the church and its leadership are there to provide nearly everything for them. They come to the church with the expectation that all their needs such as financial needs, shelter and food will be met in church. For those that have been in church for a while they may still be at this level with the view that leaders, one way or the other have failed them. There is a lot of generalization of things and the word that is usually used is *should; we should be* getting support if only people cared, the leaders should be providing us with food and so on. They tend to want luxury but are not willing to sacrifice or work hard for that. It is as if they were leaving in a dream land.

It is at this level that followers and some leaders take things for granted and the major cry at this level is that someone else should 'carry me' in my life. There is a lot of criticism and gossip at this level. Criticisms and gossip church leaders'. There is also blame on church and church leadership and others outside church. This is where one finds that the individual attributes the state that they are in to someone else is to blame for that. It is always someone's fault and they rarely see their own about things that are 'not right in the church and with the fault. The people at this level are very sensitive and fragile. They are not yet as if they were running with the vision of the church but are just drifting on. As the researcher

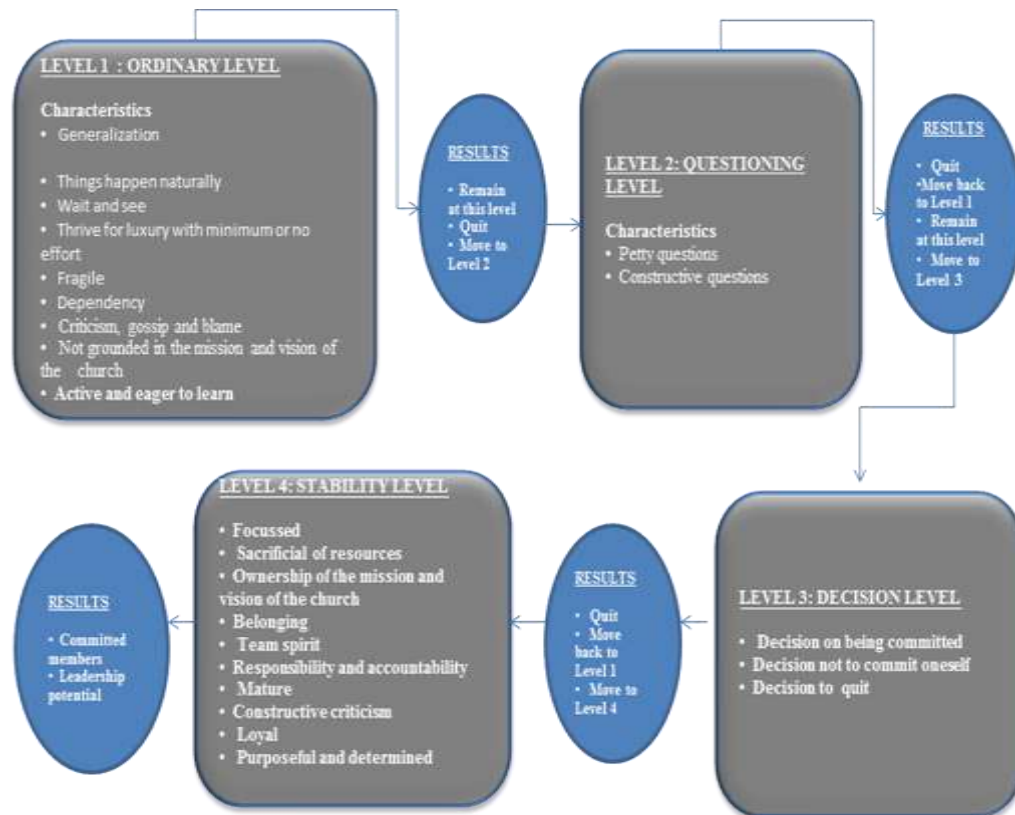


Figure 2. The ordinary-questioning-decision making-stability OQDS model.

has already eluded this level composes of followers and immature leaders who then join in with some of the disgruntled followers already in church. At this level as well one finds people that are new and are finding their way in church. They are still searching and some are wondering whether they are in the right church. This group is quite inquisitive about the people that are already in the church and the leaders and adopt what the researcher call a wait and see approach. The interesting aspect of this group is that despite their perceptions they still come to church but some of them are irregular in their attendance.

Level 2: Questioning level

The researcher calls this a level of analyses and questions. At this level people at the ordinary level begin to question themselves and other people on a number of things pertaining to church and how they fit in the church. There are three categories here, those that question in order to go up to the next, those that question in order to go back Level 1 and those that want to remain at this level. Usually, the followers or even some leaders that ask the questions in order to remain at Level 1 ask questions such as “Why does the church not care for

people?” When they ask such questions they already have an answer such as the do not care. This can also be equated to the children of Israel when they were moved from Egypt and were asking Moses why he brought them out of Israel, they already had concluded that Moses was uncaring and wanted them to be killed so they would rather remain in Egypt, justifying staying in Egypt. The result is mistrust, negativity and criticism. The second category of questions are those people that say we want to move from where we are and are seeking for help. They are not satisfied with the level that they are at as they do not see any growth. The result is that such people begin to search and make decisions for themselves. The third category is those people that keep on asking question after question and never to get answers. They have a number of questions and it seems the questions are endless. These are people that may say things like, ‘I have heard your answer on such and such but why this and why that?’

Level 3: Decision making level

Those from levels 1 and 2 come to this stage but with a different approach. The researcher calls this a level of choices. Everyone has the power of choice whether in

church or out of church. The first category decides or chooses to remain at level 1; they are comfortable with numbers, generalizations, criticizing and taking things lightly, though they pretend to be mature. The second category decides to move to Level 4. People make decisions in order to build their capacity. One starts feeling a sense of belonging. Questions such as I need to be financial stable without depending on the church but with the assistance of the church, how can I do this? I need to know the Bible on my own, how can I do this and where do I get assistance?

Level 4: Stability level

The stability level is the most fulfilling level but can only be reached through determination, purpose and stretching one's capacity. Individuals at this level understand and agree fully with the mission and vision of the church. They work as a team with the founder and other leaders in order to accomplish the task before them. They are willing to sacrifice of their resources in order to fulfill the goals of their church. Finally, such people are committed, loyal and hard-working.

The OQDS model and relationship to leadership

The researcher concluded that in leading Pentecostal churches leaders need to identify the levels that various people are at. All the levels will exist in one church so it is the job of leaders to be able to assist the people at a particular level so that they can move to a higher level and finally achieve stability. The best level is stability though not many people get to this level but the researcher believes that if the right relevant leadership is placed at each level to deal with the different categories more people will achieve stability than what is currently the situation. The researcher, though this is beyond the current study, noted that divisions, break-away and misunderstandings are a result of people not well grounded to come to a level of loyalty to the church that they belong to. It is from the above analysis that the researcher further built a model that will assist churches in growth and stability using the above levels.

The Contextualised Leadership-Follower (CLF) Model

The Contextualised Leader Follower (CLF) Model works in conjunction with the OQDS Model as follows:

Level 1: Ordinary level

At level 1 as explained above the followers are not stable and are on the periphery. In other words they can be easily moved by any doctrine, church or something that can be exciting in church circles. The loyalty level is small

and in that aspect the researcher in the above Leadership-follower model shows that the importance of leadership is to develop loyal stable people. It is important therefore that at this stage the leadership style should meet the needs of these people and assist them to mature. The leaders should therefore be caring and nurture people. The researcher therefore suggests that amongst the many leaders that Pentecostal do have in an assembly it is useful to identify the gifting of such people and let them work with the ordinary level people in order to boost them. This is quite different from what is currently the practice of following up new believers, this is targeting people that one knows fall within this level and reach out to them on a person to person basis accompanied by some teachings. The teachings should not just be the general teachings from the pulpit where everyone is generalized but there is need for specific teachings that address the real issues on the ground. The result of that as depicted in the diagram is the creation of expectation and direction. People begin to understand the reason they are in church; how they can benefit spiritually and as individuals and what the church expect from them. This reduces the percentage of people that decide to remain at level 1.

Level 2: Questioning level

At this questioning level as was highlighted by the researcher; there are two categories of questioning, questions that makes one to decide to a higher level 4 or questions that make one to decide to remain at level 1. At this level, it is important to have leaders that are decisive, focused and can provide the right direction. These are people that understand and are able to solve problems emanating from questions. This would mean that such leaders should be patient enough up to a point where they are satisfied that the person is making the right decision. The result is in assisting people to ask constructive questions, build confidence in them and motivate them to a higher level, level 4, the stability level.

Level 3: Decision level

Level 3 is a decision-making level either to go back to level 1 remain at level 2, move out of church or move to level 4, the stability level. This stage is crucial as it is a stage where divisions in church can emanate from. Different from level 1 where one still expects that something may be good here and people are trying to find what it is, at this level a person can decide to move back to level 1 and when they do they are more destructive than before. They may decide to be people that keep on asking questions though their questions seem to be endless, and when one question is answered they move on to another question. The third category is a category that feels that there is nothing in the church for

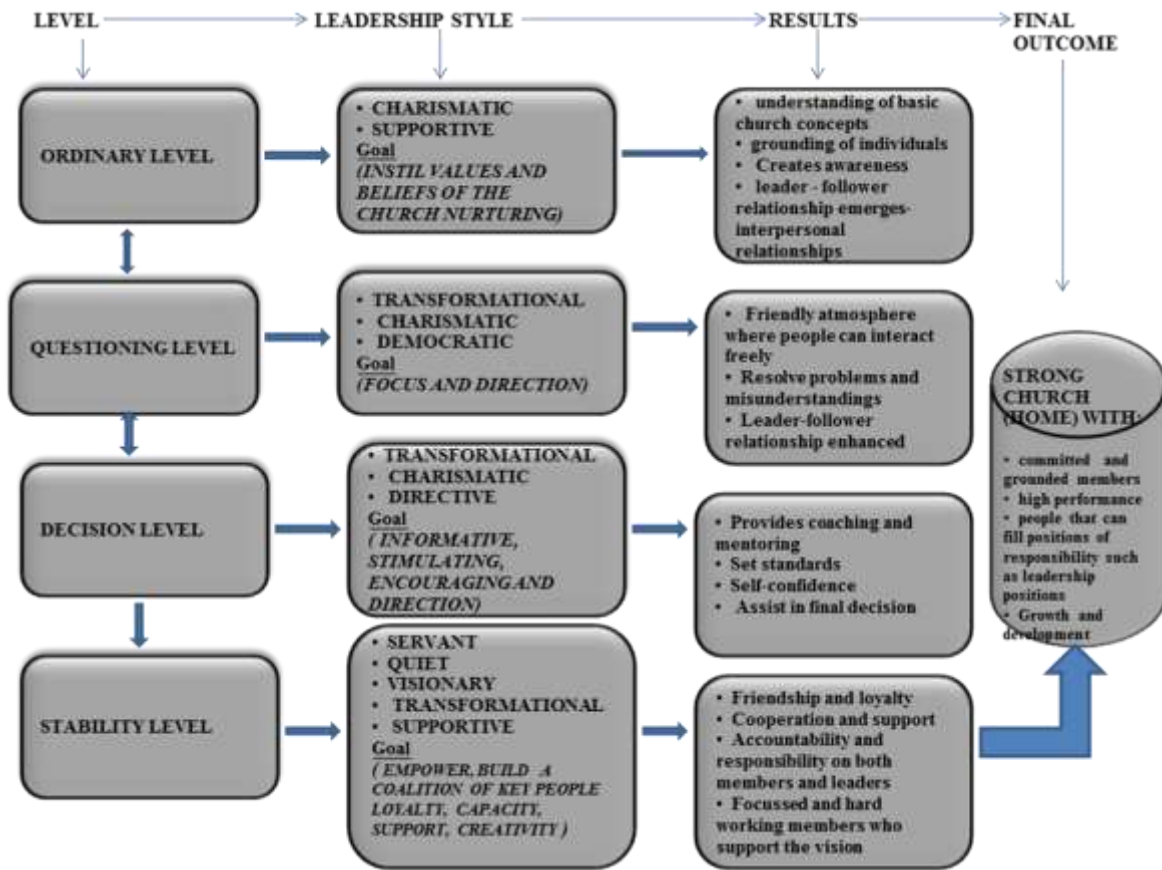


Figure 3. The contextualised leadership-follower (CLF) model.

them and decides to move away from church. The final category is the one that decides to move to the stability level. At this level, there is need to have leaders that understand the founder’s vision fully and know how to apply the vision using the mission, values and goals of the church as meant by the founder. Using mature seasoned leaders that are loyal to the church is crucial for the survival of the organization. The researcher has noted and observed that not every leader is loyal; a number have their own ambitions that may even result in them forming other churches.

Level 4: Stability level

The final level is where the mature loyal followers in the church are found. They are respectful to authority and know what direction to take in church and in their individual lives. At this level, there is need of supportive leaders, visionary leaders and creative leaders. Since most of these people are hard-working they like to be creative and to be productive. They assist in church projects and other things that the church may call for. They are responsible and accountable. The result of

supportive, creative leaders and visionary leaders at this level builds loyal people, responsible and accountable people, maturity, hardworking and entrepreneurial people. However, if this group becomes unsatisfied firstly it would seek audience with the leaders in order to solve issues at hand, however, if not still satisfied they leave the church. The Contextualised Leadership Follower (CLF) model is however not a static rigid level but one would find that people move from one stage to another and some may just start at a higher level depending on their understanding of church. Apart from the models contributed towards this study, the research contributes to an in-depth study of Pentecostal churches in Zimbabwe. Finally, the study provides empirical support of the theoretical models used in this research.

Conclusion

The influence of leadership styles can be measured by the effectiveness and impact that an organisation has had. This can be in the performance and growth of the leaders’ group, the preparedness to deal with challenges or crises, follower satisfaction with the leader, follower

commitment to the organisation's objectives and the extent to which it performs its task successfully and attains its goals. As shown in the CLF Model in Figure 3, the results and the final outcome are key areas. The results create an environment that allows for the final outcome to be achieved. A strong church that has committed members is the final goal of most leaders.

Practical implications

This is a practical study that identifies the different levels that subordinates go through which leaders should take into consideration when implementing leadership strategies. Different leadership styles that relate to each level were identified which can be applied to both non-profit and profit making organizations.

Limitations

The study was limited to Pentecostal churches in Zimbabwe. A further study that compares the current study with other countries would broaden the scope of Pentecostal leadership in different settings.

Notes

The data presented in this research is the author's original work.

Conflict of Interests

The author has not declared any conflict of interestS.

REFERENCES

- Avolio J, Bass M (2004). Multifactor Leadership Questionnaire. USA: Mind Garden inc.
- Bass BM (1985). Leadership and performance beyond expectations. New York: Free Press.
- Bass BM (1990). Handbook of Leadership: Theory, Research and Managerial Applications (3rd ed.). New York: Free Press.
- Bass BM, Steidlmeier P (1999). Ethics, Character, and Authentic Transformational Leadership Behaviour', *The Leadership Quarterly*, 2(2):181-227.
- Bryman A, Bell E (2003). *Business Research Methods*. New York: Oxford University Press.
- Burns JM (1978). *Leadership*. New York: Harper & Row.
- Charmaz K (2006). *Constructing Grounded Theory: A Practical Guide Through Qualitative Analysis*. London: Sage.
- Choi S (2007). Democratic Leadership: The Lessons of Exemplary Models for Democratic Governance. *Int. J. Leadership Stud.* 2(3):243-262.
- Church AH, Waclawski J (1999). The Impact of Leadership Style on Global Management Practices. *J. Appl. Soc. Psychol.* 29(7):1416-1443.
- Denscombe M (2008). Communities of Practice: A Research Paradigm for the Mixed Methods Approach', *J. Mixed Methods Res.* 2:270-283.
- Denzin NK, Lincoln YS (2005). *Handbook of Qualitative Research* (3rd ed.). London: Sage.
- De Vos AS, Strydom H, Fouché CB, Delpont CSL (2005). *Research at grass roots: For the social sciences and human service professions* (2nd ed). Pretoria: Van Schaik Publishers
- Douthat R (2006). *Theocracy, Theocracy, Theocracy*. Religion and Public Life, August/September: 23-30.
- Dubrin AJ, Dalgish C, Miller P (2006). *Leadership*. (2nd Asia pacific ed.). Australia: Wiley & Sons.
- Fisher C (2010). *Researching and Writing a Dissertation. An Essential Guide for Business Students* (3rd ed.). Essex: Pearson Education Limited.
- Fraenkel C (2010). Theocracy and Autonomy in Medieval Islamic and Jewish Philosophy. *Political Theory* 38(3):340-366.
- Glaser BG, Strauss AL (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Chicago: Aldine.
- Greenleaf RK (1977). *Servant Leadership: A Journey into the Nature of Legitimate Power and Greatness*, New York: Paulist Press.
- Guti EH (2005). *What Every Good Leader Should Know*. Harare: EGEA Publications.
- Hemphill JK, Coons AE (1957). Development of the Leader Behaviour Description Questionnaire. In: R.M. Stogdill & A.E. Coons (eds.), *Leader Behavior: Its Description and Measurement*. Columbus: Bureau of Business Research pp. 6-38
- Hussey J, Hussey R (1997). *Business Research: A Practical Guide for Undergraduate and Postgraduate Students*. Basingstoke: Palgrave Macmillan.
- Jürgen W (2011). *Democratic Leadership*. Encyclopedia of Leadership. 2004. SAGE Publications.
- Kuhnert KW (1994). Transformational Leadership: Developing People Through Delegation. In: B.M. Bass & B.J. Avolio(eds). *Improving Organizational Effectiveness through Transformational Leadership* (pp. 10-25). Thousand Oaks, CA: Sage.
- Kuhnert KW, Lewis P (1987). Transactional and Transformational leadership: A Constructive/Developmental Analysis', *Acad. Manage. Rev.* 12(64):8-57.
- Laub JA (1999). *Assessing the Servant Organization: Development of the Servant Organizational Leadership Assessment (SOLA) Instrument*, Dissertation Abstracts International, UMI No. 9921922.
- Lee N, Lings I (2008). *Doing Business Research*. London: Sage Publications.
- Likert R (1961). *New Patterns of Management*. New York: McGraw-Hill.
- Marturano A, Gosling J (2008). *Leadership: The Key Concepts*. New York: Routledge.
- Maykut P, Morehouse R (1994). *Beginning Qualitative Research: A Philosophic and Practical Guide*, London: The Falmer Press.
- Mertens DM (1998). *Research Methods in Education and Psychology*. Thousand Oaks, CA, Sage.
- Miles MB, Huberman AM (1994). *Qualitative Data Analysis: An Expanded Sourcebook*. London: Sage
- Mwenje J (2015). *The Influence of Leadership Styles on Church Growth with Special Reference to Pentecostal Churches in Zimbabwe*. PhD Thesis. National University of Science and Technology (NUST).
- Nyathi P (2013). *Dedicated Service: The Story of Geoffrey Bizeni Mkwanazi of the Assemblies of God Church*. Bulawayo: Amagugu Publishers.
- Rezaei M, Salehi S, Shafiei M, Sabet S (2012). 'Servant Leadership and Organizational Trust: The Mediating Effect of the Leader Trust and Organizational Communication', *Emerging Markets J.* 2(2012):70-78.
- Robbins SP (1998). *Organizational Behaviour: Concepts, Controversies, Applications* (8th ed.), New Jersey: Prentice Hall.
- Sarantakos S (2005). *Social Research*. Hampshire, Palgrave Macmillan.
- Seldén L (2005). On Grounded Theory - with some malice." *Journal of Documentation* 61(1):114.
- Spears L (1996). Reflections on Robert K. Greenleaf and Servant Leadership', *Leadership & Organizational Development Journal*, 17(7):33-35.
- Strauss A, Corbin J (1990). *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. Newbury Park: Sage.
- Strauss A Corbin J (1998). *Basics of Qualitative Research Techniques and Procedures for Developing Grounded Theory* (2nd ed.) Thousand Oaks: Sage.
- Van Eden R, Cilliers F, Van Deventer V (2008). 'Leadership Styles and Associated Personality Traits: Support of the Conceptualization of

- Transactional and Transformational Leadership', *South Afr. J. Psychol.* 38(2):253-267.
- White RK, Lippitt RO (1960). *Autocracy and democracy: An Experimental Enquiry*. New York: Harper & Brothers.
- Wright CJH (1990). The People of God and the State in the Old Testament', *Themelios*, 16(1):4-10.
- Yukl G (2002). *Leadership in Organizations* (5th ed.). New Jersey: Prentice-Hall.
- Yukl G, Van Fleet DD (1992). Theory and Research on Leadership in Organizations. In: M.D. Dunnette & L.M. Hough (eds), *Handbook of Industrial and Organizational Psychology*. Palo Alto, CA: Consulting Psychologists Press. pp. 147-197.

Full Length Research Paper

Factors influencing smallholder participation in the pigeon peas market: A case of tete province, Mozambique

David Muronda* and Marian Tukuta

Department of Supply Chain Management, School of Business Sciences, Chinhoyi University of Technology, Zimbabwe.

Received 10 June 2016; Accepted 11 August, 2016

Agricultural market participation in Mozambique has historically been very low. Despite a remarkable increase in pigeon peas production, the factors that influence smallholder participation in pigeon peas markets in Tete Province have remained unknown. The study therefore sought to determine factors that influence smallholder producers' participation in the pigeon peas market using the transaction cost theory. Multi-stage sampling was used to collect data from 73 households through semi-structured questionnaires and logistic and multiple regression models were used to assess factors affecting smallholder participation in the pigeon peas market. Proximity to main market, access to credit, regular attendance of farmer group meetings, trust among group members, age of head of household, household private assets endowment and adequate labour, access to extension services and provision of knowledge on pigeon peas production, and early planting positively influenced smallholders market participation. Time to travel to main market; ratio of active household members; working in other farmers' fields on casual basis; and food security limited smallholders' market participation. The study recommended the implementation of credit access schemes, investment in extension services, setting up of well-equipped village based markets, setting up platforms for regular interaction of producers to build social capital and interventions that enable building of private assets. The increasing importance of pigeon peas merits further research in other locations along the Zambia-Nacala Trade Corridor.

Key words: Smallholder, pigeonpea, factors, market participation, Mozambique.

INTRODUCTION

Smallholder farmers dominate the agricultural sector in most of the developing world. Due to forces of globalization, the majority of the small farmers lack the capacity to compete on the global markets that are normally characterized by strict grading standards (Makoka, 2009). Development agents and policy makers

face a challenge of ensuring that smallholder farmers participate in global markets in a way that increases their competitiveness, while at the same time gaining sustainable growth. Market participation is both a cause and a consequence of economic development (Boughton et al., 2007). Markets offer households the opportunity

*Corresponding author. E-mail: davemuronda@gmail.com.

to specialize according to comparative advantage and thereby enjoy welfare gains from trade. Recognition of the potential of markets as engines of economic development and structural transformation gave rise to a market-led paradigm of agricultural development during the 1980s (Reardon and Timmer, 2006) that was accompanied by widespread promotion of market liberalization policy agendas in Sub-Saharan Africa (SSA) and other low-income regions. Furthermore, as households' disposable income increases, so does demand for variety in goods and services, thereby inducing increased demand-side market participation, which further increases the demand for cash and thus supply-side market participation (Boughton et al., 2007). The standard process of agrarian and rural transformation thus involves households' transition from a subsistence mode, where most inputs are provided and most outputs consumed internally, to a market engagement mode, with inputs and products increasingly purchased and sold off the farm (Timmer, 1988; Staatz, 1994).

In Africa, agricultural smallholder producers are the basis for development and they make majority of the population and account for large share of GDP and export earnings (Warner and Campbell, 2000). Smallholder producers in developing countries increasingly seek to participate in global markets. This participation is an important driver of economic and social progress throughout the developing world (Stanton and Burkink, 2008). Smallholder farmers face high transaction costs and uncertainty arising from missing or inefficient input and product markets, high access barriers and costs of information, and other market imperfections that restrict market access (Jones et al., 2002).

Agricultural market participation in Mozambique has historically been very low. Rural smallholder households, who devote most resources to agriculture and draw over two thirds of their income from crop production, are typically subsistence oriented (Benfica and Tschirley, 2012). In recent years, particularly since 2008, prices of major food crops have increased in international markets. Pigeon peas production, a traditional crop in Central and Northern Mozambique, has expanded significantly at an annual rate 8 percent since 2008, faster than any other food crop (Walker et al., 2015). This has made pigeon pea important to the Mozambican smallholder sector, given that even with negligible inputs; it is one of the most stable yielding crops (Walker et al., 2015).

There has been a remarkable increase in production and dedicated commercialization efforts of pigeon peas among them; export and establishment of three pigeon peas processing plants in Zambezia, Beira and Nacala by the Export Trading Group (ETG); International Crops Research Institute for the Semi-Arid Tropics (CRISAT) and National Agricultural Research Center for Mozambique (IIAM) release and promotion of high yielding pigeon peas varieties, and provision of technical services on the benefits of row cropping that establishes

the foundations for agricultural intensification (Walker et al., 2015), joint project on promotion of market oriented production of pigeon peas by the Netherlands Development Organization (SNV) and Alliance for a Green Revolution in Africa (AGRA) in Tete Province and setting up of buying centres at Zobue in Moatize District, by buyers such as Olam and Kafaitulah Commercial.

Despite these efforts, the factors that influence participation in pigeon peas market in Tete Province have remained largely unknown. Furthermore, little research has explicitly and systematically explored the transaction cost related factors that influenced participation of smallholder producers in pigeon peas markets in Mozambique. The study sought to determine factors that influence smallholder producers' participation in the pigeon peas market using the transaction cost theory.

METHODOLOGY

The study used primary data that was collected from a sample of 73 farmers in three Districts; Moatize, Angonia and Tsangano of Tete Province in Mozambique. The three districts were selected based on the intensity of pigeon pea production. Simple random sampling was used to select three localities from Moatize District, one locality each from Tsangano and Angonia Districts. The study selected nine villages using simple random sampling. From each selected village, a farmer leader was selected and systematic random sampling was then used to select every second household in a village. Key informants were selected from three localities based on the intensity of pigeon peas production.

Semi-structured questionnaires were used to collect data through structured face to face interviews. The study also used reading (document analysis) as an information gathering method thus several publications and reports were read for the purpose of collecting secondary data.

Data analysis

To identify the transaction cost related factors that affected the quantities of pigeon peas marketed, a multiple regression model was estimated. This type of technique allows for prediction of a score on one variable on the basis of their scores on several other variables. In multiple regressions, more than one variable is used to predict the criterion. To construct the multiple regression models using the Statistical Package for Social Scientists (SPSS), the backward method for selecting explanatory variables was used in the study as recommended by Landau and Everitt (2004). The study also uses logistic regression analysis to predict market participation outcome based on single variable and also to estimate the magnitude and direction of effect of variable.

This study used the chi-squared for a 2 X 2 contingency table test and Fishers' exact test to assess whether there was any association between pigeon peas market participation and some transaction costs related variables. In addition, the study used logistic regression analysis to predict market participation outcome based on single predictor variable and to estimate the magnitude and direction of effect. Variables that were initially found to be significantly associated with market participation based on cross-tabulation results and Fishers' exact test were analysed. The logistic regression model was selected owing to its rigour and strength in predicting outcomes on both continuous and binary

Table 1. Description of variables used in the logistic regression model.

Variable	Type of variable	Explanation of variable
Market participation	Dependent	1 = Participant household, 0 = non-participant household
District	Predictor	1 = Household reside in Moatize District, 0 = Other District
Adequate labour	Predictor	1 = Household had adequate labour, 0 = otherwise
Credit/Loan	Predictor	1 = accessed loan, 0 = otherwise
Frequent group meetings	Predictor	1 = Household attended group meetings more than once a month, 0 = meetings attended less frequently
Group members trust	Predictor	1 = Household trusted group members, 0 = otherwise
Extension service	Predictor	1 = Had access to extension service in the last season, 0 = otherwise

variables (Stoltzfus, 2011).

As postulated by Peng et al. (2012), regression techniques are versatile in their application to research because they can measure associations, predict outcomes, and control for confounding variable effects. As one such technique, logistic regression is an efficient and powerful way to analyze the effect of a group of independent variables on a binary outcome by quantifying each independent variable's unique contribution. A logistic regression model allows us to establish a relationship between a binary outcome variable and a group of predictor variables (<http://www.ats.ucla.edu> accessed on 01/08/2016). It models the logit-transformed probability as a linear relationship with the predictor variables.

In this study, let y be the binary outcome variable indicating market participation or non-participation. With 0/1 and p be the probability of y to be 1, $p = \text{prob}(y=1)$. Let x_1, \dots, x_k be a set of predictor variables as shown in Table 1. The logistic regression of y on x_1, \dots, x_k estimates parameter values for $\beta_0, \beta_1, \dots, \beta_k$ via maximum likelihood method of the following equation:

$$\text{Logit}(p) = \log(p/(1-p)) = \beta_0 + \beta_1 x_1 + \dots + \beta_k x_k \quad (1)$$

In terms of probabilities, the equation in 1 is translated into

$$p = \frac{\exp(\beta_0 + \beta_1 x_1 + \dots + \beta_k x_k)}{1 + \exp(\beta_0 + \beta_1 x_1 + \dots + \beta_k x_k)} \quad (2)$$

Multiple regression analysis of effect of transaction related factors on quantity of pigeon peas sold by producers

A multiple regression model used transaction cost related to variables (factors) as shown in Table 5 this also shows the denotation of the variables. The variables were grouped mainly into three categories as suggested by Makhura (2001); household endowment, access to information and household characteristics; and a fourth group, other factors was created. Dummy variables were used to represent categorical variables as suggested by Landau and Everitt (2004). The dependent variable used in the model was quantity of pigeon peas sold by household. The linear regression model takes the following form as shown in equation 3:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k + \epsilon \quad (3)$$

where Y represents the quantities of pigeon peas sold, and $X_1 \dots X_k$ represent the explanatory variables as shown in Table 2. The error term, ϵ , represents the collective unobservable influence of any omitted variables. In a linear regression, each of the terms being added involves unknown parameters, $\beta_0, \beta_1, \dots, \beta_k$ which are

estimated by "fitting" the equation to the data using least squares (Rubinfeld, 2011).

RESULTS AND DISCUSSION

Cross-tabulation

Cross-tabulation analyzed factors that were postulated to have an effect on pigeon peas market participation. Of these factors, as shown on Table 3, only eight were found to have had an effect on market participation at 5% level of significance. As shown in Table 3, three variables namely, district of residence, regular participation in group meetings and trust in group members were observed to be strongly associated with market participation at 1% level of significance. The study also found that adequate labour, access to loan and access to extension services were associated with market participation at 5% level of significance. Variables that were found to have had an effect on market participation were further analyzed to determine the magnitude and directionality of effect on participation in the market by pigeon peas producers.

Analysis of factors that affected market participation and direction and estimation of strength of effect

Based on logistic regression analysis; the study found a positive relationship between residence in Moatize District and market participation. Households resident in Moatize District were 3.29 times as likely to participate in the pigeon peas market as those residing in Tsangano and Angonia Districts. The main pigeon peas market is located in Moatize District. The results are consistent with findings on similar work on other crops by Goetz (1992), Montshwe (2006), Bahta and Bauer (2007) and Omiti et al. (2009), that observed that distance from the farm to point of sale influence market participation, the closer to market the high likelihood that a household participates.

The results of logistic regression analysis revealed that labour adequacy had a positive relationship with market participation (1.69). It was observed that a unit increase

Table 2. Explanation of variables used in the multiple regression model.

Category	Variable	Explanation
Household endowment	Casual labour	Dummy variable representing involvement of household in casual labour exchange as source of income, 1 = partake in casual labour otherwise = 0
	Livestock index	Livestock ownership index constructed as proportion of cattle, goats and chickens with equal weighting of 0.33 except cattle with 0.34
	Transport index	Ownership of transport index constructed as proportion of bikes, bicycles, scotch cart and wheelbarrow, each given an equal weighting of 0.25 or 25%
	Adequate food	Dummy variable for food security status of household in 2015, 1= adequate food, 0 = inadequate food
Access to information	Extension service on pigeon peas	Dummy variable for extension (advisory) service on pigeon peas production in 2015 season, 1 = received service, 0 = no service
	Time to Zobue	Time taken to travel from homestead to Zobue, the main pigeon peas market (minutes)
	Pigeon peas knowledge	Dummy variable for knowledge on pigeon peas production; 1 = had adequate knowledge, 0 = otherwise
Household characteristics	Age	Age of household head (years)
	Education	Education level of head of household (years)
	Active members ratio	Ratio of active household members
	Experience	Agricultural production experience of household head (years)
Other factors	Time of planting	Dummy variable for timely planting of pigeon peas; 1 = planting 1 to 2 weeks after first rains, 0 = planting later

in labour increased pigeon peas market participation by a factor of 5.42. The analysis also showed that households that had more labour were 5.42 times more likely to participate in the pigeon peas market than those that had less labour. As shown in Table 3, the relationship between labour adequacy and market participation is statistically significant ($p < 0.05$), and with that probability the relationship due to chance is extremely low. Thus pigeon peas producers' market participation was influenced by labour availability, and this revelation confirms assertions by Mwongoso et al. (2015), Barret (2008) and Green (2006) that shows that labour availability influence market participation. Logistic regression analysis further revealed that access to credit had a positive relationship (1.19) with pigeon peas market participation; consistent with findings by Mwongoso et al. (2015). As portrayed on Table 3, an increase of one unit in access to credit increased market participation by a factor of 3.29. Producers that had

access to credit or loan were 3.29 times more likely to participate in the pigeon peas market than those that did not. The probability that the observed relationship could be attributed to chance is extremely low and the study concluded that there was a relationship between access to credit and pigeon peas market participation.

A positive relationship between regular (at least once a month) attendance of group meetings and pigeon peas market participation was also revealed. Producers that attended group meetings at least a month were 26.25 times more likely to participate in the market than those that attended meetings irregularly. The relationship was statistically significant ($p < 0.05$), and the study concluded that regular attendance of farmer group meetings positively influenced pigeon peas market participation. The results are congruent with findings on similar work by Korir et al. (2015), that indicated that attendance of meetings positively influence level of commercialization among French beans farmers.

Table 3. Cross-tabulation of market participation status by selected factors.

Variable	X ²	Fischer's exact test (2 -sided sig)
District (Moatize)	30.21***	0.00
Sex (male)	2.35	0.15
Phone ownership	2.42	0.14
Experience of household head	3.33	0.399
Household size	13.77	0.133
Ratio of active members	11.99**	0.028
Adequate labour	5.98**	0.03
Casual labour	3.38*	0.09
Adequate food	14.06*	0.06
Source of income	1.99	0.33
Livestock	1.41	0.27
Transport	1.55	0.27
Group membership	3.51*	0.1
Credit/Loan	5.14**	0.03
Frequent group meetings	15.63***	0.00
Village trust	2.92	0.16
Group trust	12.49***	0.00
Pigeon peas knowledge	1.05	0.50
Extension service	5.76**	0.03

NB. Significance level * = 10%, ** = 5% and *** = 1%.

Table 4. Logistic regression analysis of factors that affected market participation.

Variable	-2 Log likelihood	Overall classification (%)	Beta β	SE β	Wald X ²	p-value	Exp(B)
District	64.35	78.10	1.19	0.28	18.53	0	3.29
Adequate labour	74.13	78.10	1.69	0.74	5.17	0.02	5.42
Access to credit	74.00	76.70	1.19	0.28	18.53	0	3.29
Attended frequent group meetings	30.34	83.80	3.27	0.95	11.9	0	26.25
Trusted fellow group members	24.40	82.40	3.38	1.18	8.22	0	0.25
Access to extension service	73.40	76.70	-1.39	0.6	5.35	0.02	0.25

Trust among group members was found to have been positively related to market participation. A unit increase in trust of group members increased the odds of market participation by a factor of 0.25. A statistically significant ($p < 0.05$) relationship between market participation and trust of fellow group members was observed, and it was concluded that social capital (trust) positively influenced pigeon peas market participation. Olwande and Mathenge (2012), Korir et al. (2015) and Mwongoso et al. (2015) also found that market participation was influenced by social capital.

The ability of the logistic regression model to predict market participation decision was measured using the -2 Log Likelihood statistics, and the smaller the value the better the model predicted effect of variable on market participation. In the validation, the -2 Log Likelihood statistics were observed to be relatively low as shown in

Table 4, and based on that statistic; frequency of group meetings were observed to have predicted the best likelihood of market participation, and access to extension service prediction model had the least accurate measure of market participation. The overall classification percentage also reflected how well the single model was able to classify households into the two groups of participation and based on the measure as indicated by the -2 Log likelihood statistics.

Multiple regression analysis of effect of transaction related factors on quantity of pigeon peas sold by producers

The multiple correlation coefficient $R = 0.893$ shown on model summary (Table 5); showed a strong correlation

Table 5. Multiple regression model summary output.

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.893 ^l	0.798	0.713	74.15023

Table 6. Multiple regression coefficients output.

Variable	Standardized coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	Beta			Lower Bound	Upper Bound	Tolerance	VIF
(Constant)	-	2.571	0.015	201.969	1753.212	-	-
Age	0.514	2.445	0.020	0.927	10.267	0.147	6.794
Education	-0.148	-1.527	0.137	-16.400	2.359	0.693	1.443
Experience in farming	-0.668	-2.997	0.005	-14.310	-2.720	0.131	7.638
Casual labour	-0.397	-2.922	0.006	-190.42	-33.876	0.353	2.834
Adequate food	-0.231	-2.452	0.020	-280.81	-25.812	0.736	1.358
Livestock index	0.475	3.852	0.001	10.103	32.841	0.429	2.331
Pigeon peas knowledge	0.111	1.174	0.249	-54.296	201.537	0.731	1.367
Extension service on pigeon peas	0.371	3.174	0.003	36.388	167.246	0.477	2.096
Time to Zobue	-0.748	-4.016	0.000	-1.475	-0.481	0.188	5.326
Time of planting	0.366	2.696	0.011	59.245	427.098	0.354	2.827
Transport index	0.273	2.621	0.013	48.857	391.347	0.600	1.667
Ratio of active members	-0.345	-3.333	0.002	-1810.7	-435.864	0.606	1.649

between the quantities of pigeon peas sold and those predicted by the regression model, that accounted for 79.8% (shown as R square) of variability in the quantities of pigeon peas sold. The R square was adjusted to 71.3% to compensate for chance increases due to inclusion of larger sets of variables as recommended by Der and Everitt (2001). The error term of the model was 74.15 as shown in Table 5, which was small given that the quantities of sold pigeon peas ranged from 0 to 550 kg.

The ANOVA output provided an *F*-test for the null hypothesis that none of the explanatory variables were related to the quantity of pigeon peas sold. In this analysis, the null hypothesis was clearly rejected ($F(13, 31) = 9.42, p = 0.00$), and concluded that at least one of the ten variables was related to quantities of pigeon peas sold. The multiple regression standardized coefficients are shown in Table 6. The standardized coefficients measured the change in dependent variable (quantities of pigeon peas sold) in units of its standard deviation when the explanatory variable increased by one standard deviation (Landau and Everitt, 2004). The standardization was used in this study since it allowed for comparison across the twelve explanatory variables that were significantly correlated to quantities of pigeon peas sold.

Of the twelve variables in the regression model, six positively influenced the quantities of pigeon peas sold. These were age of household head, livestock ownership, transport ownership, access to pigeon peas advisory

service, knowledge on pigeon peas production and time of planting. All the variables had significant influence on quantities of pigeon peas sold except knowledge on pigeon peas production. The age of household head had the highest positive effect on increase in pigeon peas sold. An increase in the age of household head by one standard deviation was estimated to increase quantity of pigeon peas sold by 0.514 standard deviations. This finding is congruent with work on similar studies on one hand, for example Oparinde and Daramola (2014) and Jagwe et al. (2010) found that age of household head had a positive influence on intensity of market participation by producers. Yet, on the other hand contrary to findings by Onoja et al. (2012), Makhura (2001) and Macharia et al. (2014) contend that age limits market participation.

Ownership of transport had the least positive effect on quantity of pigeon peas sold. An increase in ownership of transport by one standard deviation was estimated to increase quantities of pigeon peas sold by 0.27 standard deviations. Six of the twelve variables in the regression model varied inversely with quantities of pigeon peas sold. These variables included; education and farming experience of household head, ratio of active household members and involvement in casual labour as source of income, food security, and time taken to travel to Zobue market; a variable. All the six variables varied significantly negatively with quantities of pigeon peas sold except level of education of household head. Time taken to

travel to Zobue had the largest negative effect on quantities of pigeon peas sold; an increase of one standard deviation on time taken to travel to Zobue reduced quantities sold by 0.748 standard deviations. Multiple regression analysis further revealed that food security (having adequate food) had the least significant negative influence on pigeon peas sold contrary to; that is an increase of one standard deviation of food security reduced quantities of pigeon peas sold by 0.21 standard deviations. Even though statistically insignificant, an increase of one standard deviation of education level of household head resulted in the least reduction of pigeon peas sold (0.15 standard deviations)

Variable inflation factors (VIF) statistics indicated that the data were within acceptable range of multicollinearity (VIF >10 or tolerance <0.1) and as such validated the multiple regression coefficients obtained in the analysis. It was found that ownership of transport and livestock were strongly associated with pigeon peas market participation. One standard deviation increase in livestock index increased volumes of pigeon peas sold by 0.475 standard deviations and an increase of one standard deviation on transport index increased volumes of pigeon peas sold by 0.273 standard deviations. Pigeon peas market participation was thus influenced by livestock and transport ownership, findings consistent with studies conducted by other researchers for example Barrett (2008), Boughton et al. (2007) and Green (2006) showed that smallholder private assets especially livestock and transport strongly influenced crop market participation. Providing casual labour to other farmers was found to be strongly inversely related to quantities of pigeon peas sold; households that participated in casual labour sold fewer volumes of pigeon peas, confirming earlier findings made through logistic regression model that labour adequacy, rather positively influenced pigeon peas market participation. Participating in casual labour reduce households capacitate to produce marketable volumes of pigeon peas. As suggested by Makhura et al. (2001) reorganization of household labour in order to produce enough for the market is part of transaction costs.

The results of the study showed that access to extension services significantly positively influenced quantities of pigeon peas sold. Thus, access to information (extension services) motivated households to sell larger proportion of their produce. The significant effect of access of extension services on market participation showed the contribution of reduced search, information, and negotiation costs in the marketing of pigeon peas and in increasing pigeon peas productivity.

Time taken to reach the main market, Zobue in Moatize District had a negative influence on the quantities of pigeon peas sold confirming earlier findings made through the logistic regression model. Thus, geographical location of household had a strong influence on quantities of pigeon peas sold, the further the household from the main market, the less the quantities sold. Thus location specific transaction costs had a significant effect on

market participation, with households residing near main markets motivated to participate than those located further away. Time specificity, represented by time of planting significantly influenced volumes of pigeon peas sold. Producers that planted early sold larger quantities of pigeon peas than those that planted late. An increase of one standard deviation in time of planting increased volumes of pigeon peas sold by 0.366 standard deviations. Indeed, planting early promote pigeon peas market participation.

The study found that among the household characteristics, age of household head significantly influenced volumes of pigeon peas sold, older household heads made decisions to sell more produce as compared to younger household heads. However, it was found that farming experience of household head varied inversely with volumes of pigeon peas sold. The finding is consistent with revelations of logistic regression model; thus indeed experience of household negatively affected pigeon peas market participation.

Conclusions

Pigeon peas market participation was positively influenced by proximity to main market depicting location specificity of farm; access to credit, social networks depicted by regular attendance of farmer group meetings; and trust among group members; and age of head of household part of household organization; household endowment in the form of livestock and transport ownership and adequate labour; access to information portrayed by access to extension services and knowledge on pigeon peas production, and time specificity of operations represented by early planting. However, time to travel to main market, ratio of active household members, working in other farmers' fields on casual basis and food security limited smallholder producers market participation.

The study recommended the implementation of credit access schemes, investment in extension services; to improve access to information on production and marketing through dissemination of well-structured extension messages, setting up of well-equipped village based markets, setting up platforms for regular interaction of producers to build social capital and interventions that enable building of private assets such as livestock transfer schemes. Furthermore, given the increasing importance of pigeon peas due to climate change, stable yields and increasing demand in India merits further research in other locations with larger samples particularly along the recently completed Zambia-Nacala Corridor railway line is recommended.

Conflict of interests

The authors have not declared any conflict of interests.

REFERENCES

- Atlanta Clinical & Translational Science Institute (2008). Ethical dilemmas in scientific research and professional Integrity. <http://www.actsi.org/discovery/ethics-center.html>
- Barrett BC (2008). Smallholder market participation: Concepts and evidence from Eastern and Southern Africa. *Food Policy* 33:299-317.
- Boughton D, Mather D, Barrett BC, Benfica R, Abdula D, Cunguara B (2007). Market Participation by Rural Households in a Low-Income Country: An Asset-Based Approach Applied to Mozambique. *Faith and Economics* 50:64-101.
- Korir HC, Lagat JK, Mutai MC, Ali OM (2015). Influence of social capital on producer groups, performance and market access amongst smallholder french beans farmers in Kiriyaga County, Kenya. *J. Eco. Sustain. Dev.* 6:2.
- Landau S, Everitt SB (2004). *A Handbook of Statistical Analysis using SPSS*. Chapman & Hall/ARC.
- Makoka D (2009). Small farmers' access to high-value markets: what can we learn from the Malawi pigeonpea value chain? University of Malawi, Centre for Agricultural Research and Development, Malawi
- Makhura M, Kirsten J, Delgado C (2001). Transaction costs and smallholder participation in the maize market in Northern Province of South Africa". Seventh Eastern and Southern Africa Regional Maize Conference, 11th -15th February, 2001, pp. 463-467 (Place missing on paper).
- Onoja OA, Usoroh BB, Adieme DT, Deedam NJ (2012). Determinants of market participation in Nigerian small-scale fishery sector: Evidence from Niger Delta Region. *Consilience: J. Sustain. Dev.* 9(1):69-84
- Oparinde LO, Daramola A (2014). Determinants of Market Participation by Maize Farmers in Ondo State, Nigeria. *J. Econ. Sustain. Dev.* 5:1.
- Peng CYJ, Lee KL, Ingersol (2012). *An Introduction to Logistical Regression Analysis and Reporting*. Indiana University-Bloomington
- Rubinfield LD (2011). *Reference Manual on Scientific Evidence*. 3rd Edition. The National Academic Press.
- Reardon T, Timmer CP (2006). Transformation of Markets for Agricultural Output in Developing Countries Since How Has Thinking Changed?" chapter 13 in RE Evenson, Pingali P, Schultz TP (editors). 2006. Volume 3 Handbook of Agricultural Economics: Agricultural Development: Farmers, Farm Production and Farm Markets Amsterdam: Elsevier Press.
- Stoltzfus CJ (2011). Logistic Regression: A Brief Primer. *Research Methods and Statistics*. Society for the Academic Emergency Medicine Journal Number 18.
- Statz J (1994). The Strategic Role of Food and Agricultural Systems in Fighting Hunger Through Fostering Sustainable Economic Growth. MSU Department of Agricultural Economics Staff Paper No. 94 - 39. East Lansing: MSU
- Timmer CP (1988). The Agricultural Transformation. In H. Chenery and T.N. Srinivasan (Eds.) *Handbook of Development Economics*. Amsterdam: North-Holland 1:275-331.
- Warner JM, Campbell DA (2000). Supply Response in and Agrarian Economy with Non-Symmetric Gender Relations", *World Dev.* 28(7):1327-1340.
- Walker T, Slim B, Cunguara B, Donovan C, Rao PP, Amame M, Siambi M (2015). Pigeonpea in Mozambique: An emerging success story of crop intensification in smallholder agriculture report. Modernizing extension and advisory services project. University of Illinois at Urbana-Champaign. Illinois, USA http://www.ats.ucla.edu/stat/mult_pkg/faq/general/odds_ratio.htm. accessed 01/08/16



African Journal of Business Management

Related Journals Published by Academic Journals

- Journal of Geography and Regional Planning
- Journal of Economics and International Finance
- Journal of Hospitality Management and Tourism
- International Journal of Sociology and Anthropology
- Journal of Public Administration and Policy Research
- African Journal of Marketing Management

academicJournals