Modeling the Perceptions and Challenges of the National Service Personnel in Kumasi Metropolis, Ghana

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Abstract

National Service forms a major component of nation building where graduates from various disciplines are posted to different job fields to inculcate belongingness notwithstanding the other benefits it provides to the National Service Personnel. A survey of National Service Personnel was conducted in the Kumasi Metropolis to determine personnel's perceptions and challenges encountered during national service. Structured questionnaire was designed and administered to Service Personnel at the National Service Secretariat in the Kumasi Metropolis. The Data collected was analyzed with Ordinal logistic regression model and was specified to explain the effect of personnel satisfaction for various national service variables on their rating for overall national service quality. The survey established whether National service personnel were satisfied with the service in terms of National Service registration, job description work schedule, work supervision, monthly allowance, national service duration, work environment and overall satisfaction level of the National Service Scheme. Among the sampled personnel, majority(34.7 %) of them agree that the overall national service in the Kumasi Metropolis is good but said the monthly allowance was not sufficient.

Introduction

National Service (NS) is the period of time young people in their countries have to spend in serving their nation for a period of a year or two. Some people in some countries spend this time in the army, education and other sectors of their economy (Chan- Hoong*et al*., 2013). Serving ones country is a great honor and the sacred duty of all young men and women of the country, who are called upon to acquire the necessary skills, capacities and education to fulfill their national duty. National Service instills the values of loyalty, belonging and sacrifice values for the sake of the country, as well as to preserve its gains and achievements, and promote progress, security and stability. A research by Markovitz *et al.* (2008) has also shown that the workplace skills national service personnel acquire during their service term make them more likely to be employed.

In Ghana, the National Service Scheme was established in 1973 by a Military Decree (N. R. C. D 2008) with the mandate to mobilize and deploy Ghanaian citizens of 18 years and above who graduate from accredited tertiary institutions and are required under law to do one year national service to the country on national priority development programmes that contribute to improving the quality of life of the ordinary Ghanaian. The National Service Secretariat (NSS) is the government agency mandated to formulate policies and structures for national service. The NSS is governed by Act 426.

Service personnel are deployed in various fields including, Agriculture, Health, Education, Military, Co-operatives, Youth programmes. Other sectors of the economy in which service personnel are posted include Ministries, Departments and Agencies, Metropolitan, Municipal and District Assemblies but many are posted to the Education sector. Wondoh.J (2013) said more than sixty percent of the current serving service personnel were posted to serve as teachers in schools across Ghana.

Some of the skills and experience acquired during the period of service include; a sense of responsibility, the ability to put the needs of others before one's needs, exposure and confidence in fields that might not necessarily be one's field, among others. These can sum up to make a very good work experience which could prove to be valuable in the job market (Frumkin and Jastrzab, 2010).

Former Army General Stanley McChrystal said it would give all U.S. citizens a chance to volunteer in their community with help from the federal government. This would address the "imperceptible," but "insidious decline in our trust in one another, in our connection to our communities, in our sense of duty to serve our nation." The mere mention of another federal "welfare" program instantly activates the gag reflex among most modern conservatives and libertarians (Marie. M. H., 2014).

A research by the Institute of Policy Studies (IPS), on Singaporeans' perception of NS show that nine out of 10 Operationally Ready National Servicemen generally felt that their employers were supportive of NS, and more than three-quarters of employed servicemen said their employers would take their NS commitments into account and adjust their workload. They often possess soft skills such as "management, competency planning and rigour of thought" which were picked up during their NS days (Koh E. B., 2013).

The city of Kumasi was founded in the 1680's by King Osei Tutu I to serve as the capital of the Asante State (Fynn, 1971). Kumasi is located in the transitional forest zone and is about 270km north of the Accra. Given its strategic location and political dominance, Kumasi as a matter of course, developed into a major commercial center with all major trade routes converging on it (Dickson, 1969).With time the city began to expand and grow thereby making it second only to Accra (the national capital) in terms of land area, population size, social life and economic activities.

The objective of this paper is to model the perceptions and challenges of the national service personnel in Kumasi Metropolis, Ghana. To determine this, the study employs an ordinal logistic model. The data for the study was collected from national service personnel in the metropolis through the use of structured questionnaires.
The remaining part of the paper is organized as follows: Section 2 describes the concept of method employed in the research. The empirical analysis, results and discussion are presented in Section 3. Section 4 provides the concluding remarks.

2. Methodology

The data used in the study is obtained from a self-administered questionnaire administered by the researchers in National Service Secretariat where all the personnel visit every month.

The survey was conducted in May of 2014 and collected data on variables related to the perceptions and challenges of national service personnel at Kumasi Metropolis such as initial registration straight forward, work schedule overloaded, supervisors supportive, monthly allowance sufficient, national service duration adequate, availability of work supervision, job description well spelt out, activities assigned relate to course of study, office space conducive for work , work environment friendly, satisfaction rate level of the National Service Scheme. Some demographic characteristics of the respondents (national service personnel) were also collected.
A sample of 585 personnel who were involved in the service at the time of the survey were given questionnaire and the response rate for the administered questionnaire was 95%.

The respondents were asked to rate their overall satisfaction with the national service on a four point scale with 1 being very dissatisfied, 2 as dissatisfied, 3 being satisfied and 4 being very satisfied. To determine the possible factors influencing the overall satisfaction level of the respondents, an ordinal logistic regression model was specified. This type of model was chosen due to the ordinal and polytomous nature of the response variable.

2.1 Model Specification

The statistical model employed in this study is the Ordinal Logistic regression model. The ordinal logistic regression model is used to explain the relationship between an ordinal polytomous dependent variables and categorical and /or continuous independent variable. The model is similar to the multinomial logistic regression model but it takes into account the ordinal nature of the dependent variable. Suppose an ordinal categorical response *Y* with *J* categories and explanatory variable *x*, the ordinal logistic regression model with logit function is defined as (Agresti, 2007):

$$\log\left[\frac{p(y \le j1x)}{1-p(y \le j1x)}\right] = \alpha j + \sum_{i=1}^{k} \beta_i x_i, \quad (1)$$

where $p(y \le 1)$ describe cumulative probability for category *j*. The cumulative probability reflect the ordering, with $p(y \le 1) \le p(y \le 2) \le ... \le p(y \le j) = 1$

Each probability can be calculated as

$$p(y \le j) = \frac{\exp\left[\alpha_j + \sum_{i=1}^{k} \beta_i x_i\right]}{1+\exp\left[\alpha_j + \sum_{i=1}^{k} \beta_i x_i\right]} \quad (2)$$

From equation (1) and under assumption of parallel lines, the relationship between all pairs of categories is the same, we obtain only one slope coefficient (beta) for the estimated model and different intercept for each category. The estimated value of the coefficient describes the relationship between: say the lowest category (i.e. poor) versus all higher categories of the response variable and is the same as the coefficient describing relationship between the next lowest category and all higher categories (McCullagh, 1980).

The parameters in the model can be estimated using maximum likelihood estimation method. The ordinal logit model can be evaluated using the likelihood ratio test to test the significant difference between the unrestricted which contain covariates and the restricted model which contains only the intercept (Greene, 2003; Hilbeand Greene, 2008). The interpretation of the estimated coefficient is as follows: As *x* increases, for $\beta > 0$, the response on *y* is more likely to fall at the lower end of the ordinal scale and for $\beta < 0$, the response on *y* is more likely to fall at the higher end of the ordinal scale. This implies that when the proportional odds assumption hold, the partial effect of $\hat{\beta}$ of the covariates *x* is not dependent of the category (Lin, 1999).

3. Empirical Results and Discussions

3.1 Sample Personnel Characteristics

Table 1 presents the demographic characteristics of respondents. Respondents in this survey were mainly males who constituted 71.1% with the remaining 29.9% representing the females. A significant 88.1% of the respondents were single with only 11.9% married. As many as 87.9% of the respondents were mainly Christians and 11.2% Muslims with only 0.9% as traditionalists. The age brackets of the respondents were registered as: below 25 years (63.3%), between age 25 – 29 years (31.4%) and 30 years and above (5.3%) respectively.

Most of the respondents were degree holders who constituted 77.5%.This was followed by HND (15.7%), Masters (4.3%) and Diploma (2.3%) respectively. Majority of respondents constituting 69.2% used public transport as a means of transport whereas 5.8% used private cars and 21.4% by foot respectively. A little over two third of the respondents representing 69.9 % served at the education sector in the metropolis whereas 86.8% of the respondents served in the public sector. Academic disciplines of respondents were slightly skewed towards the sciences and business. Even though 5.4% of the respondents indicated that they were poorly received the first time they visited their respective places of posting, however, as much as 77.8% were well received.

Table 2 presents the satisfaction level of National Service personnel with respect to the some service component related to the National Service. From Table 2, it can be seen that majority of the personnel agreed with almost all the individual service component except monthly allowance paid them and work schedule. As much as 34.7% of the respondents were of the opinion that the monthly allowance was not sufficient whereas 41.3% opined that work schedule at their respective places of service were overloaded.

In general, the results from Table 2 also confirmed that service personnel in the Kumasi Metropolis were satisfied and agreed with service components such as: conducive office space, friendly working environment, supportive work supervisors and well-tailored job description.

3.2 Ordinal Logistic Regression Model Specification

In this study, the ordinal logistic regression model is specified to explain the effect of personnel satisfaction for various service variables on their rating for overall national service quality. The parameter estimates obtained for the model using maximum likelihood approach are presented in Table3. For each of the covariate, the parameters for various categories are estimated relative to the selected reference level. Thus, for J +1covariates,J parameters are estimated. From the estimated ordinal logit model, it was found that personnel's rating for overall national service quality was significantly influenced by five explanatory variables: mode of transport; type of residence; educational level; academic discipline and first report. However, two additional explanatory variables (i.e sector specific sector) which were found not to be significant were included in the model to support the fulfillment of model assumptions. The selection of the independent variables to be included in the final model was based on the significant contribution of that particular variable and the validity of the final model relative to the model assumptions.

To evaluate the goodness-of-fit of the fitted model, the Likelihood Ratio Test was performed. Under the null hypothesis, the test assumes that the fitted model is not significantly different from a model without any covariate (null model). Based on the test results as presented in Table 3, we conclude at 5% significant level that the fitted model is different from the null model. Similarly, the proportional odds assumption of parallel lines (i.e. same slope coefficient across response categories) was also verified using likelihood Chi-square test. The result of the test under the null hypothesis of same slope coefficient across response categories is also justified at5% significant level. Hence, the fitted model can be considered satisfactory.

The fitted ordinal logit model indicates that personnel who were posted to the education and financial sector of the economy were 14% and 20.5% less likely to rate the overall National Service Scheme in a higher category (i.e. excellent instead of good or bad). Imperatively, it is evident in this study that service personnel in the financial sector are more challenged in one way or the other than their counterparts in the education sector. Personnel aged below 25 years were 0.3% more likely to rate the overall National Service Scheme in a higher category whereas those within the age brackets 25-29 years also were less likely rate the overall National Service Scheme in a higher category. Invariably, personnel who are less than 30 years almost shared similar opinion as far as the National Service Scheme is concerned. National Service personnel who reside in rented apartments, family houses and student hostels are also 29.2%, 24.3% and 42.4% less likely to rate the overall National Service Scheme in a higher category (i.e. excellent instead of good or bad). On the mode of transport to work, service personnel who used their own private cars, public transport and lastly by foot were respectfully 142..8%, 52.7% and 7.6% more likely to rate the overall National Service Scheme in a higher category (i.e. excellent instead of good or bad). Lastly, service personnel with educational subject area backgrounds such as the following: Science, Arts, Engineering and Social Science were 52%, 63.4%, 50.9% and 71.3% less likely to rate the overall National Service Scheme in a higher category.

4.0 Conclusion

The paper investigated National Service personnel satisfaction level with the one year mandated National Service Scheme for all graduates from both public and recognized private tertiary institution in Ghana. To explain the motive behind personnel ratings for overall service quality, an ordinal logistic regression model which consist of various individual scheme component was specified. Kumasi Metropolis was randomly selected as the study area for this study. The results so far give highlights on key components of the Service Scheme vis-à-vis the graduate participants.

Even though, the government on yearly basis increases National Service personnel allowances in accordance with economic situation, it was very clear from this research that such increases are still not enough to support personnel's fundamental needs whiles serving the country coupled with the overloaded nature of daily work schedule. A little over two third of Service personnel were posted to the education sector of the economy alone with the remaining one third occupying the other sectors. This deprived many personnel from rendering their service in sectors which are alien to their academic area of specialization but gives exposure and confidence in fields that might not necessarily be one's field, among others.

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Table1: Frequency Distribution on Demographic Characteristics of National Service Personnel's

Variable	Frequency	Percentage (%)	Total
Gender			**551**
Female	159	28.9	
Male	392	71.1	
Age Group			**551**
Below 25 years	349	63.3	
25-29 years	173	31.4	
Above 30 years	29	5.3	
Marital Status			**555**
Single	489	88.1	
Married	66	11.9	
Religion			**554**
Christianity	487	87.9	
Muslim	62	11.2	
Traditional	5	0.9	
Mode of Transport			**556**
Personal car	32	5.8	
Public Transport	385	69.2	
Walk	119	21.4	
All Others	20	3.6	
Type of Residence			**554**
Rented Apartment	244	44.0	
Family House	159	28.7	
Student Hostel	119	21.5	
Others	32	5.8	
Education Levels			**556**
HND	86	15.4	
Diploma	13	2.3	
Degree	433	77.5	
Masters	24	4.3	
Academic Discipline			**556**
Science	179	32	
Arts	91	16.3	
Engineering	67	12	
Social Science	93	16.6	
Business	126	22.5	
Sector			**551**
Public	485	**86.8**	
Informed Private	33	5.9	
Formal Private	22	3.9	
Others	11	2	
Specific Sector			**554**
Health	38	6.8	
Education	389	**69.6**	
Agriculture	53	9.5	
Metropolitan/Municipal/District Assembly	31	5.5	
Financial	15	2.7	
Industrial	4	0.7	
Judiciary	2	0.4	
Others	22	3.9	
First Reported			**556**
Well Received	435	**77.8**	
Lukewarm Received	91	16.3	
Poorly Received	30	**5.4**	

Table 2: National Service Personnel's and Satisfaction Levels

Variables	Level of Measurement (Percentages)				
	Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Initial Registration for National Service (Straight forward)	109(19.5)	87(15.6)	81(14.5	**178(31.8)**	84(15.0)
Work Schedule (Overloaded)	38(6.8)	72(12.9)	116(20.8)	**231(41.3)**	78(14.0)
Supervisor (Supportive)	46(8.2)	29(5.2)	67(12.0)	**229(41.0)**	160(28.6)
Monthly Allowance (Sufficient)	**194(34.7)**	140(25.0)	71(12.7)	101(18.1)	28(5.0)
National Service Duration (Adequate)	46(8.2)	53(9.5)	85(15.2)	**248(44.4)**	100(17.9)
Work Supervision (Availability)	31(5.5)	43(7.7)	76(13.6)	**266(47.6)**	117(20.9)
Job Description (Well Spelt out)	55(9.8)	49(8.8)	62(11.1)	**265(47.4)**	104(18.6)
Activities assigned (Related to the Course of Study)	23(4.1)	39(7.0)	44(7.9)	**304(54.4)**	133(23.8)
Office Space (Conducive for work)	71(12.7)	85(15.2)	78(14)	**199(35.6)**	110(19.7)
Work environment (Friendly)	46(8.20	57(10.2)	64(11.4)	**219(39.2)**	160(28.6)

Table 3a: Ordinal Logistics on Personnel Satisfaction with the National Service Scheme

Variable	Estimates	Standard Error	Significant Value	Odd Ratio
Very Dissatisfied	1.638	1.911	0.392	5.145
Dissatisfied	3.15	1.916	0.1	
Satisfied	7.822	1.947	0	
Very Satisfied	Referenced			
Gender				
Female	0.013	0.241	0.958	1.013
Male	Referenced			
Age Group				
Below 25 years	0.003	0.545	0.996	1.003
25-29 years	-0.034	0.549	0.95	0.967
Above 34 years	Referenced			
Marital Status				
Single	0.223	0.39	0.568	1.25
Married	Referenced			
Religion				
Christianity	2.708	1.532	0.077	15.000
Muslim	3.014	1.555	0.053	20.369
Traditional	Referenced			
Mode of Transport				
Personal car	0.887	0.719	0.217	2.428
Public Transport	0.423	0.559	0.45	1.527
Walk	0.073	0.599	0.903	1.076
All Others	Referenced			
Type of Residence				
Rented Apartment	-0.345	0.522	0.508	0.708
Family House	-0.278	0.545	0.609	0.757
Student Hostel	-0.551	0.544	0.312	0.576
Others	Referenced			
Education Levels				
HND	-0.434	0.639	0.497	0.648
Diploma	1.442	1.047	0.169	4.229
Degree	-0.203	0.547	0.711	0.816
Masters	Referenced			
Academic Discipline				
Science	-0.734	0.37	0.047	**0.48**
Arts	-1.006	0.418	0.016	**0.366**
Engineering	-0.711	0.412	0.085	**0.491**
Social Science	-1.249	0.395	0.002	**0.287**
Business	Referenced			
Sector				
Public	1.377	0.927		3.963
Informed Private	1.825	1.083		6.203
Formal Private	1.279	1.015		3.593
Others	Referenced			
Specific Sector				
Health	1.335	0.758	0.078	3.8
Education	-0.151	0.587	0.797	0.86
Agriculture	0.195	0.717	0.786	1.215
Metropolitan/Municipal/District Assembly	0.535	0.764	0.484	1.707
Financial	-0.23	0.916	0.801	0.795
Industrial	2.731	2.79	0.328	15.348
Judiciary	1.052	2.688	0.695	2.863
Others	Referenced			
First Reported				
Well Received	0.916	0.463	0.048	2.499
Lukewarm Received	0.188	0.509	0.712	1.207
Poorly Received	Referenced			

Table 3b:Test of Parallel Lines

Model	2 Log Likelihood	Chi-Square	Degree of Freedom	Significant Value
Null Hypothesis	690.182			
General	651.644	38.538	62	0.992

Table 3c: Model Fitting Information

Model	2 Log Likelihood	Chi-Square	Degree of Freedom	Significant Value
Intercept Only	745.195			
Final	690.182	55.013	31	0.005

Table 3d: Goodness of Fit Test

	Chi-Square	Degree of Freedom	Significant Value
Pearson	1069.548	905	0.001
Deviance	606.135	905	1