

# Discriminant Analysis of Discrimination against People with Disability

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## Abstract

Negative stereotypes about physically challenged people result in discriminatory social policies which in turn reinforce or confirm negative attitudes that greatly affects them as they strive to function in the society, these problems create some difficulties as the physically challenged persons strives to effectively play active role in various sectors of the society. The main objective of this study was to identify the category of people who perpetuate discriminatory practices against physically challenged people in Tamale metropolis of Ghana. Questionnaires and interview guide were used to collect data for the study. Discriminant analysis using Statistical Package for Social Sciences (SPSS) was then performed on the collected data. The results revealed that "survey respondents who had discriminated either consciously or unconsciously against people with disabilities were more likely to be less than 40 years in terms of age, male in terms of sex, educated with regards to formal education, and working in the formal sector in terms of occupation than survey respondents who had never discriminated against people with disabilities."

**Keywords:** Discriminant Analysis, Discrimination, Physically Challenged People

## 1. Introduction

The physically challenged people are born into a family and remain a lifelong member of their respective families, resulting in their lives being interwoven with their families and society. The way parents and society treat physically challenged persons is a reflection of the attitude they have for them. In the process of integration of the physically challenged persons, the parents and society who reach to the state of passive acceptance actively involve themselves in the general welfare of the physically challenged persons. However, some who do not resolve the initial emotional reactions tend to express negative attitudes such as discrimination, referring to them as social outcasts, stigmatization and so forth towards the physically challenged persons. Physically challenged people, in particular, fared badly and can consistently be found to occupy the lower levels of most measures of inequality and social exclusion (Atkins, 1991).

According to a report by the UN (2002) negative stereotypes about physically challenged people result in discriminatory social policies which in turn reinforce or validate negative attitudes. In tandem with the UN report, Oliver et al. (1998) asserts that, discrimination lies in the 'institutionalised practices of society' rather than in the attitudes of individuals. However, most institutional barriers tend to be less obvious. They can include social institutions such as marriage, and hence the role of housewife and its attendant domestic tasks.

Getting (1993) believes that the views of health and caring professionals may be even more negative than those of the general public, due to the unequal relationship they have with the physically challenged people and the fact that they come into contact only when physically challenged people are deemed to need their help. It also seems likely that the acceptance of more than a few physically challenged professionals would seriously challenge the traditional professional/client relationship where the professional is considered to be the expert and occupies a dominant position over the client.

Many studies have found that physically challenged persons' participation in daily life is limited not only by their individual impairments, but equally by external barriers; namely environmental, social and attitudinal (Barnes and Mercer, 1997).

A number of studies conducted in Asia shows that people who are physically challenged experience varied discrimination because of their physical disability. A significant amount of literature in this area provides ample evidence that suggest that the physically challenged people feel discriminated against in most societies (Lang, 1998).

The physical limitations of individuals tend to be one of the major problems faced by individuals with physical challenges. Van Brakel and Anderson (1998) notes that individuals with Leprosy, found that physically challenged persons were not able to carry out major activities such as washing clothes and washing dishes, carrying water-pots, watering the land and pouring water. Behavioural norms are also said to contribute to functional limitations among physically challenged persons (Mulholland et al, 1998).

Variations of discrimination against persons with disabilities exist in Ghana as they do in other places in Africa. Among the Ashanti's in Ghana, their traditional beliefs barred men with physical defects, such as amputations

from becoming chiefs. This is evident in the practice of destooling a chief if he acquires epilepsy (Sarpong 1974). Children with obvious deviations were also rejected. For instance, an infant born with six fingers was killed upon birth. Severely retarded children were abandoned on riverbanks or near the sea so that such "animal-like children" could return to what was believed to be their own kind (Sarpong 1974).

Traditionally, people of Tamale have held a common notion that, disability is regarded as a tragedy, the disabled in their view is a victim and for that matter feel pity for the person and always offer charity. To them, disability is also considered as an illness and therefore perceived as a permanent problem. As such disabled persons usually experience difficulties in accessing basic social, political and economic rights from the mainstream of the society. As a result of this disabled persons seem to have fewer chances because of the way things are organized in the largest social structure. They are faced with the problem of stigmatization, isolation, discrimination, unemployment and poverty which compels them to depend on friends and relatives for their livelihood. This leads to the basic necessities of their lives not being met. As a result, there is an increase in the number of disabled beggars on the streets of Tamale, at work places and at homes.

Undoubtedly, the above difficulties which the physically challenged persons encounter in their usual interaction with the non-physically challenged persons tend to create some forms of impediments in their day-to-day activities in the various social institutions. The above problem is seen to be pervasive and a reality among the physically challenged persons in the Tamale Metropolis.

## **2. Materials and Methods**

### *2.1 Study Area*

The Tamale Metropolis is located at the centre of the Northern Region of Ghana. It lies between Latitude 9.16 and 9.34 North and Longitude 00.36 and 00.57. It shares common boundaries with Tolon/Kumbungu District to the West, Central Gonja District to the South-West, Savelugu/Nanton Municipality to the North, East Gonja to the South and Yendi Municipality to the East. It occupies approximately 750km square which is 13% of the total area of the Northern Region, Source (TMA, 2012). The Tamale Metropolis is located approximately 180 metres above sea level. The topography is generally rolling with some shallow valleys which serve as stream courses. There are also some isolated hills, but these do not inhibit physical development. The Metropolis experiences one rainy season starting from April/May to September/October with a peak season in July/August. The Metropolis experiences a mean annual rainfall of 1100mm within 95 days of intense rainfall. Staple crop farming is highly restricted by the short rainfall duration (TMA, 2012).

### *2.2 Target Population*

The target population of this study consisted of all individuals in the Tamale Metropolis including the physically challenged people.

### *2.3 Sampling Technique and Sample*

Even though two of the most dominant sampling techniques in Social Science research remain probability and non-probability sampling techniques (Twumasi, 2001), it was only the latter which was adopted for this study in view of the large size of the population. Non-probability sampling enables the researcher to establish a certain criterion devoid of randomness for selecting the sample (Agyedu, et al., 2007). Specifically, purposive sampling which is a form of non-probability sampling procedure was used to collect data from physically challenged people and institutions that deal with issues concerning the physically challenged. A sample of 170 people from the Tamale Metropolis was selected purposively for this study. Data collection instruments employed included questionnaires, interviews, and observations. Given the nature of the phenomenon being studied, questions were posed to respondents and deductions made from their responses were used for analysis.

### *2.4 Statistically Analysis*

Discriminant analysis was used to establish important relationships in the data. Discriminant analysis works by creating a variable called the discriminant function score which is used to predict to which group a case belongs. Computations of discriminant function scores are similar to computations in factor scores using eigenvalues. All analyses were performed using Statistical Package for Social Sciences (SPSS).

## **3. Results**

To determine the role each independent variable plays in predicting group membership on discrimination against people with disability, we need to associate the relationship between the discriminant functions and the groups defined by the discrimination against people with disability, the role each significant independent variables play in the discriminant functions, and the group means differences for each of the variables.

Function 1 in Table 1 separates survey respondents who had discriminated either consciously or unconsciously against people with disabilities (-1.129) from survey respondents who had never discriminated against people with disabilities (3.336).

**Table 1: Relationship of functions to groups**

Do you have evidence of local communities and families discriminating against persons with disabilities?	Function
	1
Yes	-1.129
No	3.336

Unstandardized canonical discriminant functions evaluated at group means

From the structure matrix in Table 2, the independent variables that are strongly associated with discriminant function 1 which distinguished between survey respondents who had discriminated either consciously or unconsciously against people with disabilities from survey respondents who had never discriminated against people with disability were age ( $r=0.860$ ), sex ( $r=0.508$ ) and occupation ( $r=0.336$ ).

**Table 2: Predictor loadings to functions**

	Function
	1
Age of respondents	.860
Sex distribution of respondents	.508
Occupation of Respondents	.336
Educational background of respondents	.040

Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions

Variables ordered by absolute size of correlation within function.

Since all four independent variables are dichotomous variables, the means in Table 3 are not interpreted directly. Their interpretations must take into consideration the coding used. For age, 1 corresponds to respondents who were less than 40 years and 2 correspond to respondents who were 40 years and above. For sex, 1 corresponds to male while 2 correspond to female. For Education, 1 corresponds to educated respondents and 2 correspond to non-educated respondents. For occupation, 1 corresponds to respondents working in the formal sector while 2 correspond to respondents working in the informal sector. In terms of age, the lower mean for survey respondents who had discriminated either consciously or unconsciously against people with disabilities (mean=1.00), when compared to the mean for survey respondents who had never discriminated against people with disabilities (mean=1.79), implies that the group contained more survey respondents who were less than 40 years and fewer survey respondents who were 40 years and above. This supports the relationship that "survey respondents who had discriminated either consciously or unconsciously against people with disabilities were more likely to be less than 40 years than survey respondents who had never discriminated against people with disabilities."

Also with regards to sex, the results support the relationship that "survey respondents who had discriminated either consciously or unconsciously against people with disabilities were more likely to be male than survey respondents who had never discriminated against people with disabilities."

With regards to education, the results agree with the relationship that "survey respondents who had discriminated either consciously or unconsciously against people with disabilities were more likely to be educated than survey respondents who had never discriminated against people with disabilities."

Finally, in terms of occupation, the results supports the relationship that "survey respondents who had discriminated either consciously or unconsciously against people with disabilities were more likely to be working in the formal sector than survey respondents who had never discriminated against people with disabilities."

Table 3: Predictors associated with first function

Are there evidence of local communities and families discriminating against persons with disabilities?	Mean	Std. Deviation	Valid N (listwise)	
			Unweighted	Weighted
Yes				
Age of respondents	1.0000	.00000	127	127.000
Sex distribution of respondents	1.2047	.40510	127	127.000
Educational background of respondents	1.6614	.47510	127	127.000
Occupation of Respondents	1.3701	.48474	127	127.000
No				
Age of respondents	1.7907	.41163	43	43.000
Sex distribution of respondents	2.0000	.00000	43	43.000
Educational background of respondents	1.7442	.44148	43	43.000
Occupation of Respondents	2.0000	.00000	43	43.000
Total				
Age of respondents	1.2000	.40118	170	170.000
Sex distribution of respondents	1.4059	.49251	170	170.000
Educational background of respondents	1.6824	.46694	170	170.000
Occupation of Respondents	1.5294	.50061	170	170.000

If the cross-validated classification accuracy rate is significantly higher than the accuracy obtained by chance alone, the predictor variables are considered useful predictors of membership in the groups defined by the dependent variable. In practice, the cross-validated classification accuracy rate should be 25% or more, higher than the proportional by chance accuracy rate.

The proportional by chance accuracy rate is computed from Table 4 by squaring and summing the proportion of cases in each group from the table of prior probabilities for groups ( $0.747^2 + 0.253^2 = 0.622$ ).

Table 4: Prior probabilities for groups

Are there evidence of local communities and families discriminating against persons with disabilities?	Prior	Cases Used in Analysis	
		Unweighted	Weighted
Yes	.747	127	127.000
No	.253	43	43.000
Total	1.000	170	170.000

The cross-validated accuracy rate computed by SPSS in Table 5 is 94.7% which is greater than or equal to the proportional by chance accuracy criteria of 77.75% ( $1.25 \times 62.2\% = 77.75\%$ ). Hence, the criteria for classification accuracy are satisfied.

Table 5: Classification results

	Are there evidence of local communities and families discriminating against persons with disabilities?	Predicted Group Membership		Total	
		Yes	No		
Original	Count	Yes	127	0	127
		No	9	34	43
	%	Yes	100.0	.0	100.0
		No	20.9	79.1	100.0
Cross-validated <sup>a</sup>	Count	Yes	127	0	127
		No	9	34	43
	%	Yes	100.0	.0	100.0
		No	20.9	79.1	100.0

a. Cross validation is done only for those cases in the analysis. In cross validation, each case is classified by the functions derived from all cases other than that case.

b. 94.7% of original grouped cases correctly classified.

c. 94.7% of cross-validated grouped cases correctly classified.

#### 4. Conclusion

The implications from this study are clear. We investigated to identify the category of people who perpetuate discriminatory practices against physically challenged people in Tamale metropolis of Ghana. Results from the discriminant analysis supports the relationship that "survey respondents who had discriminated either consciously or unconsciously against people with disabilities were more likely to be less than 40 years in terms of age, male in terms of sex, educated with regards to formal education, and working in the formal sector in terms of occupation than survey respondents who had never discriminated against people with disabilities."

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