# A statistical modelling of the factors contributing to child labour in Namibia: Evidence from the 2018 labour force survey

Opeoluwa F. Oyedele<sup>1\*</sup> and Anna-Lisa Shilongo<sup>1</sup>

<sup>1</sup>University of Namibia, School of Science, Department of Computing, Mathematical and Statistical Sciences, Main Campus, Private Bag 13301, Windhoek, Namibia.

#### ARTICLE INFO

#### ABSTRACT

Article history: Received: 23 August 2021 Received in revised form: 15 September 2021 Accepted: 22 September 2021 Published: 25 February 2022 Edited by DSI liyambo

Keywords: Child labour Multinomial logistic regression Namibia Despite children not allowed to work by law in Namibia, child labour is still being practised in the country. In this paper, the multinomial logistic regression model was used to statistically examine the factors contributing to child labour in Namibia using the 2018 Namibia Labour Force Survey. Results showed that the children's characteristics such as their residential area, region, age group, highest educational attainment, school attendance and the types of social grants received had a significant impact on the children's engagement in child labour activities, while the sex of the children did not. In addition, economically inactive children aged 8-9 years, who already attained a pre-primary education and were currently attending school were more likely to engage in child labour activities, while employed children who were receiving special maintenance grants meant for disabled children, war veterans/ex-combatants grants and other types of social grants were less likely to. It is therefore recommended that the Namibian government and policy makers constantly engage and collaborate with community leaders to assist in the improvement of the standards of living through the creation of decent employment for the children's parents/guardians, thereby providing decent income to cover at least the basic needs of the children's households.

 $\ensuremath{\mathbb{C}}$  2022 ISTJN. Published by ISTJN. All rights reserved.

## 1 Introduction

Child labour can be defined as the event where children below the age of 18 years are involved in any kind of employment in any industry or business that deprives them of their childhood, interferes with their ability to attend school, and that is mentally, physically, socially or morally dangerous and harmful (ILO, 2004). It can be viewed as work that is exploitative, hazardous and inappropriate for the child's age, which in turn affects the development of the child. However, not all works for a child are regarded as harsh, exploitative and hazardous since some works include household chores that children do, provided that it does not interfere with their health and development (ILO, 2004). Thus, any work or activities that violate the rights and hinders the mental, physical and social wellbeing of a child describes child labour.

Despite children not allowed to work by law, child labour is still being practiced in most developing countries. According to the 2017 report by ILO, on a global level, an estimate of about 152 million children aged 5-17 years are involved in child labour activities, accounting for almost one in ten children worldwide, with Africa ranking at the highest (72 million children), followed by Asia and the Pacific with 62 million children. In South Africa, approximately 779,000 children aged 7–17 years were involved in child labour activities in 2010, with a reduction reported in 2015 to 577,000 children (Statistics South Africa, 2017). In Zimbabwe, the 2014 government's child



<sup>\*</sup>Corresponding author: Tel.: +264 61 2063468; Fax: +264 61 2063791; *E-mail address:* 00yedele@unam.na;OpeoluwaOyedele@gmail.com (O. F. Oyedele)

labour survey report found that the number of children engaged in child labour activities between the ages of 5 and 17 years increased from 341,000 children in 2011 to 1.6 million children in 2014, with majority of the children found in the agriculture and mining sectors of the country (Bureau of International Labour Affairs, 2015). Furthermore, child labour in Malawi continues to be dominance, with approximately 2.1 million children aged 5-17 years involved in child labour activities, out of which 81% were aged 5-13 years and 19% aged 14-17 years (Understanding Children's Work Project, 2018).

Child labour is rapidly becoming a common problem in Namibia. According to a survey done by the Ministry of Labour, Industrial Relations and Employment Creation in 2010, about 60.8% of children aged 6-17 years were found to be working in Namibia. The survey results also indicated that the participation rate of working children were higher in the rural areas compared to the urban areas. It was further revealed that private households were the main industry for working children, with 97.9% of the children working in private households, followed by the agriculture sector (with 0.7% of the children) and wholesale, retail trade and repair of motor vehicle industries (0.5% of the children). However, industries such as public administration, defense and social security, followed by manufacturing, and hotels and restaurants, had the least number of working children in Namibia (Ministry of Labour, Industrial Relations and Employment Creation, 2010). The engagement of a child in economic activities is unacceptable according to section 3 of the Namibia's Labour Act of 2007, unless the work is light and in accordance with accepted international standards. However, the Constitution of the Republic of Namibia in 1990 stated that such light work should not interfere with the child's health, education, welfare and development.

Furthermore, the engagement of children aged 15 years and above in employment in Namibia is regarded as legal as long as it does not interfere with their education, health and physical, mental, spiritual, moral or social development, while the Namibian Labour Act of 2007 (Republic of Namibia, 2007) states that nobody may employ a child under the age of 14 years but allows light work during the day for children aged 14 years in accordance with accepted international standards. Notwithstanding, all children are entitled to be protected from economic exploitation and should not be employed or perform work that is likely to harm them. For this reason, the aim of this study was to examine the factors contributing to child labour in Namibia. Findings from this study may provide feedback to assist all relevant organizations and governmental ministries that deals with children's well-being and protection (such as the Ministry of Labour, Industrial Relations and Employment Creation, Ministry of Gender Equality and Child Welfare, and the International Labour Organization) in the development of the necessary procedures to eliminate or minimize child labour in the country as well as to get children out and prevent them from being involved in any forms of child labour activities.

# 2 Methodology

The data used in this paper were extracted from the Namibia Labour Force Survey (NLFS), administered by the Namibia Statistics Agency (NSA) in 2018. The NLFS is conducted yearly from 2012 to 2018, to provide labour force information on the employment, socio-demographic and educational characteristics of all persons aged 8 years and above living in households in Namibia. However, the survey was not conducted in 2015 and 2017 due to financial reasons. All NLFS reports are freely available online at www.nsa.org.na. For more information about the 2018 survey, refer to the NLFS report of 2018.

The inclusion criteria for this study were all children aged 8-17 years living in households during the reference period of the survey, as documented in the NLFS report of 2018, while persons who were above the age of 17 years were excluded from this study. The data used for this study was obtained freely from the NSA website (www.nsa.org.na) and treated with confidentiality. All revealing information about the children's identities were already excluded from the data by NSA before the data were made available online.

#### 2.1 Statistical Analysis

Logistic regression is a statistical method that can be used to measure the effects of a set of predictor variables  $\mathbf{X}(N \times P)$  on a dichotomous and non-normally distributed response variable  $\mathbf{y}(N \times 1)$  (Oyedele & Ntusi, 2021). It can either be a binomial or multinomial regression modelling. Binomial or binary logistic regression considers situations in which the observed outcome of  $\mathbf{y}$  only has two (nominal) categories, while the multinomial logistic regression considers situations where the outcome of  $\mathbf{y}$  has three or more (nominal) categories. In the binomial logistic modelling, the natural distribution for the dichotomous  $\mathbf{y}$  to consider would be the binomial distribution, i.e.,  $\mathbf{y} \sim \text{Bin}(n,p)$ , where p is the probability of occurrence (Y = 1) and n is the number of trials (Sparks, 2019). In this model, the link function is obtained as

$$\operatorname{logit}(Y=1) = \log \left[ \frac{P(Y=1|\mathbf{X})}{1 - P(Y=1|\mathbf{X})} \right]$$

Expressing  $P(Y = 1 | \mathbf{X})$  as a linear model yields

$$\log\left[\frac{P(Y=1|\mathbf{X})}{1-P(Y=1|\mathbf{X})}\right] = \beta_0 + \beta_1 \mathbf{x}_1 + \beta_2 \mathbf{x}_2 + \dots + \beta_P \mathbf{x}_P + \mathbf{e},\tag{1}$$

where  $\beta_0$  is the intercept term,  $\beta_j$  is the unknown coefficient term that needs to be estimated for the  $j^{\text{th}}$  predictor variable,  $\mathbf{x}_j(N \times 1)$ , for j = 1, 2, ..., P, is the  $j^{\text{th}}$  predictor variable and  $\mathbf{e}(N \times 1)$  is the error term. For  $\mathbf{y}$  with  $K \ge 3$  nominal categories, the multinomial logistic regression model can be obtained as

$$\mathsf{logit}(Y_k) = \log\left[\frac{P(Y=k|\mathbf{X})}{P(Y=k'|\mathbf{X})}\right]$$

for k = 1, 2, ..., K - 1, with k being the identified nominal category of y and k' the reference category (Milewska et al, 2017). Expressing P(Y = k|X) as a linear model yields

$$\log\left[\frac{P(Y=k|\mathbf{X})}{P(Y=k'|\mathbf{X})}\right] = \beta_{k0} + \beta_{k1}\mathbf{x}_1 + \beta_{k2}\mathbf{x}_2 + \dots + \beta_{kP}\mathbf{x}_P + \mathbf{e}_k,\tag{2}$$

where k = 1, 2, ..., K - 1.

The predictor variables in this paper were the children's (residential) area, region, sex, age group (in years), highest educational attainment, school attendance and types of social grants received, while the response variable was the labour force status of the children. In this paper, the children's labour force status was grouped into three categories: the employed (persons in paid employment or self-employment), the unemployed (persons not in paid employment or self-employment) and the economically inactive (persons not in full employment and involved in unpaid household duties) as per Namibia Statistics Agency (2019) employment definition. The unemployed category was used as the reference category in the fitted multinomial logistic model. All data analysis aspects of this paper were performed using the R programming language (R Core Team, 2020).

# **3** Results

Out of the 8876 children aged 8 to 17 years considered as per the inclusion criteria of this study, 8529 (96.09%) were economically inactive, 251 (2.83%) were unemployed, while 96 (1.08%) were employed as shown in Table 1. Out of the 8529 children who were economically inactive, 4555 (51.32%) children were aged 10-14 years, while 2034 (22.92%) and 1940 (21.86%) were aged 8-9 and 15-17 years respectively. Majority of the children who were economically inactive were residing in rural areas, had primary education attainment and were from the Kavango East and Ohangwena regions. Likewise, majority of the children who were employed resided in rural areas, had

primary education attainment and were from the Kavango West region, as shown in Table 1. Furthermore, majority of the children were (currently) attending school, with 8110 who were economically inactive, while 350 and 290 children quit school and never attended school respectively. In addition, majority of the children never received social grants, regardless of their labour force status, followed by 1609 and 358 children who were receiving child maintenance and foster care grants respectively, as shown in Table 1.

Moreover, from Table 1, with a significant p-value at a 5% level of significance, the children's residential area (p-value =  $1.20e^{-05}$ ), region (p-value <  $2.2e^{-16}$ ), age group (p-value <  $2.2e^{-16}$ ), highest educational attainment (p-value <  $2.2e^{-16}$ ), school attendance (p-value <  $2.2e^{-16}$ ) and the types of social grants received (p-value = 0.006) can be concluded to have a significant impact on the children's engagement in child labour activities, while the children's sex (p-value = 0.497) does not have a significant impact. Thus, all these impacting children's characteristics were considered in the fitted multinomial logistic regression model and the subsequent results shown in Table 2, with the unemployed category used as the reference category.

#### For the economically inactive children:

From Table 2, with a significant p – value of 0.004, the odds of being economically inactive in child labour activities for a child aged 8-9 years was 3.943 times higher compared to the odds for an unemployed child, while the odds for a child aged 15-17 years was 0.146 times lower (p – value < 0.001). With regards to the children's residential area and region, the odds of being economically inactive in child labour activities for a child residing in rural area was 0.578 times lower (p – value = 0.004) compared to the odds for an unemployed child, while the odds for a child in the Kavango East (p – value < 0.001), Kunene (p – value < 0.001), Otjozondjupa (p – value < 0.001), Zambezi (p – value = 0.001), Hardap (p – value = 0.003), Kavango West (p – value = 0.002), Omaheke (p – value = 0.004) and Khomas (p – value = 0.011) regions were between 0.084 to 0.199 times lower. At a significant p – value < 0.001, the odds of being economically inactive in child labour activities for a child who already attained a pre-primary education was 2.789 times higher, compared to the odds for an unemployed child, while the odds for a child (currently) attending school was 1.669 times higher (p – value < 0.001). Moreover, with a significant p – value < 0.001, the odds of being economically inactive in child labour activities for a child who was receiving special maintenance grant meant for disabled children was 2.948 times higher compared to the odds for an unemployed child who was receiving special maintenance grant meant for disabled children was 2.948 times higher compared to the odds for an unemployed child who was receiving special maintenance grant meant for disabled children was 2.948 times higher compared to the odds for an unemployed child who was receiving special maintenance grant meant for disabled children was 2.948 times higher compared to the odds for an unemployed child who was receiving special maintenance grant meant for disabled children was 2.948 times higher compared to the odds fo

#### For the employed children:

On the other hand, with a significant p – value of 0.002, the odds of being employed in child labour activities for a child aged 15-17 years was 0.401 times lower compared to the odds for an unemployed child, while the odds for a child in the Kavango East (p – value = 0.049) and Kunene (p – value = 0.049) regions were 0.185 and 0.189 times lower, respectively, as shown in Table 2. With regards to the children's educational attainment, the odds of being employed in child labour activities for a child who already attained a pre-primary education was 0.011 times lower (p – value < 0.001) compared to the odds for an unemployed child. At significant p – values < 0.001, the odds of being employed in child labour activities for a child who was receiving other types of social grants, special maintenance grants meant for disabled children and war veterans/ex-combatants grants were between 0.001 and 0.340 times lower compared to the odds for an unemployed child as shown in Table 2.

## 4 Discussion

In this paper, the multinomial logistic regression model was used to statistically examine the contributing factors of child labour in Namibia using data obtained from the 2018 NLFS. Majority of the children were economically inactive, residing in rural areas, had primary education attainment and were from the Kavango East, Ohangwena, Kavango West, Omusati and Oshikoto regions. In addition, majority of the children never received social grants.

These deductions are not surprising. As of 2013, primary education became free and compulsory in Namibia for children aged 14 years and below at all government schools, with most rural areas having only pre-primary and primary schools facilities. Also, given the high household poverty rates in these regions (Kavango East, Ohangwena, Kavango West, Omusati and Oshikoto) and some households still living far below the food poverty line, it is not surprising that there were a lot of children involved in occasional employment within these regions most often to provide food and basic essential needs for their respective households. In addition, to qualify and receive social grants for a child in Namibia, one or both biological parents of the child must have a valid Namibian identification card. However, some children were orphaned at infant, with some of them not ever knowing their biological parents, while some parents do not have a valid Namibian identification card due to various reasons such as lack of financial resources and necessary documents needed to get such identification.

From this study, it was revealed that children's residential area, region, age group, highest educational attainment, school attendance and the types of social grants received had a significant impact on the children's engagement in child labour activities, while the sex of the children did not. This study key findings are similar to the conclusions made in Okurut & Yinusa (2009), Kazmi (2015) and Ari (2016), however, contradicts Oheneba (2015) who concluded that the sex of a child was a significant contributor to child labour engagement, with the female children less likely to engage and rather attend school than their male counterparts. Kazmi (2015) and Ari (2016) concluded that the children's residential area was related to child labour engagement, with the probability of engagement increased in rural areas. Kazmi (2015) further concluded that the age of the child was related to child labour engagement, while Okurut & Yinusa (2009) concluded that the higher the education level of the child, the lower the probability of engagement in child labour activities.

Moreover, economically inactive children aged 8-9 years were more likely to engage in child labour activities, while those aged 15-17 years and those residing in rural areas were less likely to. This is not surprising as the older the children gets the more likely they are to seek full employment opportunities, rather than occasional ones, to provide food and basic essential needs for their respective households. This finding somewhat echoes the observations made by Kazmi (2015) and Ari (2016) that the children's age and residential area were associated with child labour engagement.

Compared to unemployed children, economically inactive and employed children in regions such as Kavango East and Kunene regions were less likely to engage in child labour activities. This may be due to the children in these regions already participating in some form of full work-related activities such as farm works (like tending to livestock, ploughing, etc.), domestic works (like cooking, cleaning, washing, etc.) and caregiving works (for children or elderly persons) with little or no pay.

Furthermore, economically inactive children who already attained a pre-primary education and were currently attending school were more likely to engage in child labour activities. Most often, due to the economic status of their parents/guardians who cannot afford the educational expense after their primary school education and with most rural areas/regions only having pre-primary and primary school facilities, most children will engage in various income earning activities so as to financially assist themselves with income to cater for their schooling fee and family upkeep. This finding is in line with findings reported by Kazmi (2015) where it was concluded that children in rural areas/regions prefer to combine schooling with various income earning activities to assist themselves and their families out of poverty.

Compared to the unemployed children, employed children who were receiving special maintenance grants meant for disabled children, war veterans/ex-combatants grants and other types of social grants were less likely to engage in child labour activities. This is very logical, given that these children were already getting some form of income from their employment in addition to the social grants they were receiving concurrently. However, economically inactive children who were receiving special maintenance grant meant for disabled children were more likely to engage in child labour activities. This is not startling as this type of (special) maintenance grant in Namibia is (most often) too little to fully cater for the actual needs of a specific child with disability in a household that is

already struggling to provide basic needs for all its members.

Although the 2018 NLFS was a household based survey which collected data on labour force information patterns of all persons aged 8 years and above living in households in the country, a couple of potential limitations could be perceived: (i) people who were homeless or those who usually resided in private households but were in hospital, prison and school hostels during the time of data collection of the 2018 NLFS were excluded as well as those in institutions such as correctional institutions/police cells, old age homes, army and police barracks/camp/ships in harbour, child care institutions/orphanages, hospital, hotels and church center/convent/monastery/religious retreats; and (ii) the NLFS surveys relied on memory recalling of the respondents, which could have led to the possibilities of systematic under-reporting of some work-related and family socio-economic characteristics.

# 5 Conclusion

When attempting to solve the issue of child labour, one should keep in mind the root causes behind it and recommend the best possible approaches to minimize or eliminate them. With the children's characteristics such as their residential area, region, age group, highest educational attainment, school attendance and the types of social grants received having a significant impact on the children's engagement in child labour activities, the best possible approaches can be achieved through: (i) the creation of decent employment and adequate number of productive and quality jobs for the children's caregivers/parents/guardians, thereby providing decent income to cover at least the basic needs of the children's households, (ii) the extension of rural communities (such as Kavango East and Kunene regions) accesses to compulsory social grants like child maintenance grants, schooling grants, old-age pensions, social assistance and public work programme, and (iii) the access increments of rural-based services such as basic health services and educational facilities from pre-primary to tertiary levels.

#### **Conflict of Interest**

Authors have no competing interests to declare.

#### Funding

This research study did not receive any specific grant from funding agencies in the public, commercial, or non-profit organization sectors.

# References

- Ari, E., 2016. Using multinomial logistic regression to examine the relationship between children's work status and demographic characteristics. Research Journal of Politics, Economics and Management, 4(1), 77–93.
- Bureau of International Labour Affairs, 2015. Zimbabwe minimal advancement: findings on the worst forms of child labour. Washington DC, United States.
- ILO, 2004. Child Labour: A textbook for university students. ILO Office, Geneva.
- ILO, 2017. Global estimates of child labour: Results and trends, 2012-2016. ILO Office, Geneva.
- Kazmi, S.M.A., 2015. How does socio-economic factors force children into child labour? A case study of Sahiwal district, Punjab, Pakistan (*Working Paper # 150*). Sustainable Development Policy Institute. Pakistan.
- Milewska, A.J., Jankowska, D., Więsak, T., Acacio, B., Milewski, R., 2017. The application of multinomial logistic regression models for the assessment of parameters of Oocytes and Embryos quality in predicting pregnancy and miscarriage. Studies in logic, Grammar and Rhetoric, 51(1), 7–18.

Ministry of Labour, Industrial Relations and Employment Creation, 2010. Namibia Child Activity Survey. Windhoek, Namibia.

Namibia Statistics Agency, 2019. Namibia Labour Force Survey: 2018. Windhoek, Namibia.

- Oheneba, T.E., 2015. Statistical analysis of socio-economic determinants on child labour and schooling in Ghana. University of Ghana. Ghana.
- Okurut, F.N., Yinusa, D.O., 2009. Determinants of child labour and schooling in Botswana: Evidence from 2005/2006 Labour Force Survey. University of Botswana. Botswana.
- Oyedele, O.F., Ntusi, N.S., 2021. A multinomial modelling of the factors that impact viral load levels in adults on antiretroviral therapy in Namibia: A case study of Nankudu Health District. International Science and Technology Journal of Namibia, 14, 73–82.
- R Core Team, 2020. R: A Language and Environment for Statistical Computing. The R Foundation for Statistical Computing, Vienna, Austria. Available at http://www.R-project.org/.

Republic of Namibia, 1990. The Constitution of the Republic of Namibia, Article 15: Children's Rights. Namibia.

Republic of Namibia, 2007. Namibia's Labour Act 11, Chapter 2: Fundamental rights and protections: Prohibition and restriction of child labour. Namibia.

Statistics South Africa, 2017. Survey of activities of young people: 2015. Pretoria, South Africa.

Sparks, C., 2019. DEM 7283 - Example 2- Logit and Probit Models. University of Texas at San Antonio. https://rstudio-pubs-static.s3.amazonaws.com/464256642978a14c13452390318bf547d3b77e.html# logit-and-probit-models, Accessed date: 30 March 2020.

Understanding Children's Work Project, 2018. Understanding child labour and youth employment in Malawi. ILO, Geneva.

	Unemployed Economica		Employed						
Characteristics	Count	inactive	Count	Tatal	P-value				
	(%)	Count (%)	(%)						
Age group									
Age group	F	2024	1	2040					
8 - 9	(0.056)	(22.016)		(22,092)					
	(0.050)	(22.910)		(22.965)	$< 2.2e^{-16*}$				
10 - 14	(0.518)	(51 318)	(0.372)	(52 208)					
15 17	200	1940	62	2202					
15 - 17	(2 253)	(21.857)	(0.699)	(24,808)					
Total	251	8529	96	8876					
Total	(2.828)	(96.091)	(1.082)	(100)					
Area	( )								
Urban	89	3508	18	3615					
Orban	(1.003)	(39.522)	(0.203)	(40.728)	$1.20e^{-05*}$				
Rural	162	5021	78	5261	1.200				
Kurui	(1.825)	(56.568)	(0.879)	(59.272)					
Total	251	8529	96	8876	-				
Total	(2.828)	(96.091)	(1.082)	(100)					
Highest education attainment									
Pre-Primary	0	90	0	90					
	(0.000)	(1.014)	(0.000)	(1.014)					
Primary	141	6739	51	6931					
	(1.589)	(75.924)	(0.575)	(78.087)	$< 2.2e^{-16*}$				
Junior Secondary	68	1111	19	1198					
	(0.766)	(12.517)	(0.214)	(13.497)					
Senior Secondary	4	46	1	51					
	(0.045)	(0.518)	(0.011)	(0.575)					
lechnical/Vocational	0	6 (2.22.1)	4 (0 000)	3					
Certificate/Diploma	(0.000)	(0.034)	(0.000)	(0.034)					
None	38	540	25	603					
	(0.428)	(0.084)	(0.282)	(0.794)					
Total	(2.929)	0529	90	(100)					
Pagian	(2.020)	(90.091)	(1.062)	(100)					
	7	408	1	416					
Erongo	(0 070)	(4 507)		(4 687)					
	14	413	(0.011)	430	-				
Hardap	(0 158)	(4 653)	(0.034)	(4 845)					
Karaa	4	354	3	361	$< 2.2e^{-16*}$				
r aras	(0.045)	(3.988)	(0.034)	(4.067)					
Kayango East	52	1095	8	1155					
	(0.586)	(12.337)	(0.090)	(13.013)					
Kavango West	30	875	20	925	1				
	(0.338)	(9.858)	(0.225)	(10.421)					
Khomas	13	552	5	570	1				
	(0.146)	(6.219)	(0.056)	(6.422)					
Kunene	40	386	10	436	1				
	(0.451)	(4.349)	(0.113)	(4.912)					
Ohangwena	12	1053	8	1073					
	(0.135)	(11.863)	(0.090)	(12.089)					

 Table 1: Distribution of children's characteristics and their labour force status

|--|

Omaheke	16	253	4	273	]
	(0.180)	(2.850)	(0.045)	(3.076)	
Omusati	8	905	10	923	
	(0.090)	(10.196)	(0.113)	(10.399)	
Oshana	4	574	4	582	
	(0.045)	(6.467)	(0.045)	(6.557)	
Oshikoto	10	813	6	829	
	(0.113)	(9.160)	(0.068)	(9.340)	
Otiozondiuna	24	402	7	433	-
Otjozonajupa	(0.270)	(4.529)	(0.079)	(4.878)	
Zambezi	17	446	7	470	-
Zumbezi	(0.192)	(5.025)	(0.079)	(5.295)	
Total	251	8529	96	8876	-
lotal	(2.828)	(96.091)	(1.082)	(100)	
School Attendance					
Attending school	94	8110	32	8236	
Attending school	(1.059)	(91.370)	(0.361)	(92,790)	
Quit ask asl	119	192	39	350	$< 2.2e^{-16*}$
Quit school	(1 341)	(2 163)	(0.439)	(3.943)	
NI I I	38	227	25	290	
Never attended	(0.428)	(2 557)	(0.282)	(3 267)	
<b>T</b>	251	8520	0.202)	8876	-
lotal	(2,828)	(06.001)	(1.082)	(100)	
Say	(2.020)	(90.091)	(1.002)	(100)	
	100	4227	12	4509	
Female	(1, 442)	4337	43	4500	
	(1.442)	(48.802)	(0.484)	(50.789)	0.497
Male	(1,206)	4192	55	4300	
	(1.380)	(47.228)	(0.597)	(49.211)	-
Total	251	8529	90	8870	
	(2.828)	(96.091)	(1.082)	(100)	
Social grants	05	1570	10	1.000	1
Child maintenance grants	25	1572	12	1609	
	(0.282)	(17.711)	(0.135)	(18.128)	-
Foster care grant	6	348	4	358	
	(0.068)	(3.921)	(0.045)	(4.033)	-
Government Institution	3	41	0	44	0.006*
Pension Fund	(0.034)	(0.462)	(0.000)	(0.496)	_
None	213	6223	80	6516	
	(2.400)	(70.110)	(0.901)	(73.411)	
Others	4	223	0	227	
	(0.045)	(2.512)	(0.000)	(2.557)	
Special maintenance grant	0	96	0	96	
for disabled children	(0.000)	(1.082)	(0.000)	(1.082)	
War veterans/Ex-	0	15	0	15	]
combatants grants	(0.000)	(0.169)	(0.000)	(0.169)	
Workmen's compensation/	0	11	0	11	1
Unemployment insurance	(0.000)	(0.124)	(0.000)	(0.124)	
Total	251	8529	96	8876	1
	(2.828)	(96.091)	(1.082)	(100)	

\* Significant at a 5% level of significance

	Economically inactive			Employed				
	Adjusted	Odd		Adjusted	Odd			
Characteristic	estimate	ratio	P-value	estimate	ratio	P-value		
(Intercept)	1 164	3 203	0.881	-6 976	0.001	0.951		
Age group								
15-17	-1 922	0 146	< 0.001*	-0.914	0 401	0.002*		
8-9	1 372	0.146	0.004*	-1 321	0.267	0.239		
10-14 (ref)	1.572	0.110	0.001	1.521	0.201	0.235		
Area								
Bural	_0 549	0 578	0.004*	0 500	1 648	0 161		
Urban (ref)	0.515	0.570	0.001	0.500	1.010	0.101		
Highest educational attainment								
Junior Secondary	-4 540	0.011	0.007	1 770	5 873	0 080		
None	1 118	3 058	0.507	-6.428	0.002	0.909		
Pre-Primary	1.110	2 780	< 0.001*	-4.467	0.002	< 0.001*		
Primary	_4 430	0.012	0.001*	1 540	4 666	0.001*		
Senior Secondary	-5.022	0.012	0.905	1.800	6.050	0.990		
Technical /Vocational	-5.022	0.007	0.091	1.000	0.050	0.909		
Certificate / Diploma (ref)								
Region								
Frongo	-1 315	0.269	0.057	-1 525	0.218	0 249		
Hardan	-1 910	0.205	0.003*	-1 323	0.210	0.189		
Kayango Fast	-2 482	0.110	< 0.000	-1 688	0.200	0.105		
Kavango West	_1.885	0.001	0.001*	-0.407	0.105	0.633		
Khomas	-1.614	0.192	0.002	-0.451	0.000	0.634		
Kunene	-2.160	0.135	< 0.011	-1.664	0.007	0.004		
Obangwena	-2.100	0.113	0.001*	-0.328	0.109	0.049		
Omaheke	-0.402	0.017	0.430	-1.260	0.720	0.123		
Omusati	-1.051	0.100	0.004	0.230	1 269	0.109		
Oshana	-0.259	0.112	0.700	0.235	1.209	0.730		
Oshikoto	-0.050	0.510	0.300	0.000	0.503	0.540		
Otiozondiuna	-0.031	0.322	< 0.01*	-0.323	0.393	0.505		
Zambezi	-2.102	0.122	0.001*	-1.202	0.277	0.155		
Karas (rof)	-2.001	0.127	0.001	-0.042	0.431	0.554		
School attendance								
Attending school	0.512	1 660	< 0.001*	0.281	0.755	0 361		
Never attended	16 872	< 0.001	0.385	-0.201	2.540	0.301		
	-10.072	< 0.001	0.305	0.930	2.549	0.095		
Social grants								
Child maintenance grants	6.029	0.002	0.046	0.765	2 1 4 0	0.019		
Easter care grant	-0.020	0.002	0.940	0.705	2.149	0.910		
Covernment Institution	-0.235	0.002	0.944	0.762	2.100	0.915		
Pension Fund	-7.011	0.001	0.938	-5.100	0.006	0.980		
None	-6 344	0.002	0 944	0 748	2 112	0.921		
Others	-6 448	0.002	0.943	-12 330	< 0.001	< 0.001*		
Special maintenance grant	0. 110	0.002	0.545	12.009	< 0.001	< 0.001↑		
for disabled children	1.081	2.948	< 0.001*	-4.970	0.007	< 0.001*		
War veterans/Fx-						<u> </u>		
combatants grants	0.777	2.174	0.406	-1.079	0.340	< 0.001*		
Workmen's compensation/								
Unemployment insurance (ref)								

Table 2:	Output	from	the	fitted	multinomial	logistic	model
----------	--------	------	-----	--------	-------------	----------	-------

\* Significant at a 5% level of significance

(ref) = reference category