International Journals of Advanced Research in Computer Science and Software Engineering
ISSN: 2277-128X (Volume-8, Issue-4)

Research Article | **April 2018**

Statistical Analysis and Evaluation of Crime committed by Inmates in Benin Prison in Edo State using Time Series Model

Ogbeide, E. Michael
Department of Mathematics and Statistics
Nigeria
ogbeideoutreach@yahoo.com

Sarah, O. Elakhe
Department of Mathematics and Statistics
Nigeria
elakhess@gmail.com

Abstract- Crimes exist in every society. This paper presents the statistical analysis of crime committed Inmates in Benin City Prison in Edo State with a suitable model using a time series approach. The paper examines the extent of crime committed in the prison for a period of seven years between 1999 to 2005. The study showedsss that age has no influence on the type of crime committed and that religion has no influence on the crime rate. The presentation gives future forecast in the population of prisoners in the prison with available crime rate data.

Keywords- Crime Committed, Prison, Time Series Model and population

I. INTRODUCTION

The Researchers and Planners are most interested in using time series as an aid to business forecasting of calculating, particularly in the area of sales so that at an appropriate time budget, prison and crime committed, allocation may be made for capital investment in machines, materials, labour and advertising for the year(s) ahead. The analysis of time series can be applied to many fields. Society have recorded of history of prison and the crime committed, the history of recoded in economy is often in the form of time series. Economic behaviour is quantified in such time series as the consumer's price index, unemployment, gross national product, population and production. Time series is a time dependent set of observed data collected, gathered or assembled at a specific regular interval or time. The time intervals can be in seconds, minutes, hours, days, weeks, months, quarters, bi-annual years, decades etc. But the variable to be measured is always a function of time. Time series analysis plays an important role in our day-to-day activities. This is so because it can be used in research and development of business firm for planning further needs.

In other words, through the use of time series analysis a firm will be able to improve on its production rate and prison and crime committed can also be analyze by time series. It will also enable the company, prison, crime committed of a country to know how the next stages of sales, population of prison, crime committed and country are likely to be and changes that are to be made. Hence this paper use time series analysis to forecast the future trend of prison and crime committed in Edo State using the Sapele road, Benin Prison yard as case study. The limitation of this study is government and Prisons authorities stand on access to Prisons data in the present times, partly due to security reasons; hence we used available collected data.

II. MATERIALS AND METHOD

The method of data collection employed in this study was the use of secondary data by collecting a documentary of record population for period of 6 years range from 1999 to 2005 in Benin prison. Time series model was used to estimate the total prison population at a given period. In this paper, the data obtained were analysed using time series analysis. Suitable time series models were fit to the data using minitab statistical software. Several models were tested and the best possible model (one which yielded the minimum mean squared deviation) was used. This gave a better and more accurate predictions to the given data points, hence more reliable forecasts were made for the years under consideration. The models obtained from the data using minitab statistical package were explicitly stated in the Tables.

III. DATA PRESENTATION

The study made use of secondary data collected from Sapele road, Benin Prison, the said data was analyzed using chi-square method approach to know the population of inmate and crime committed for future use. The various data collected are presented in the Table 3.1 to Table 3.26 as shown below:

Table 3.1: Prison Admission by Types of Inmate (Awaiting Trials and Convicts)

	Awaiting Trial						CONVICTS							
			Short term		Long term		Condemned		Lifers		Detainees			
Jan-Dec	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1999	1364	155	120	17	130	3	-	-	-	-	-	-	1614	175
2000	1015	127	200	16	174	10	-	-	-	-	-	-	1389	153
2001	938	102	200	6	91	5	-	-	-	-	-	-	1229	113
2002	980	110	163	7	40	3	-	-	-	-	-	-	1183	120
2003	1107	83	114	8	60	3	9	-	6	-	1	-	1327	94
2004	925	73	92	8	140	11	10	-	6	-	1	-	1174	92
2005	929	94	40	2	76	3	12	-	6	-	1	-	1064	99
			b/w 9 Months - 1	2 and above										
Total	7258	744	959	64	711	38	31	0	18	0	3	0	8980	846

Source: Computed from Field Survey from Sapele road,Benin City Prison yard 2006.

Table 3.2a: Admission by Classification of Offences In Prison

	Assault		Arson		Affray		Murder		Stealing		Robbery		Armed Robbery	
Jan-Dec	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1999	301	55	17	-	12	-	8	-	566	92	200	-	274	-
2000	211	45	5	-	7	-	6	-	389	76	233	-	253	-
2001	179	26	10	-	3	-	6	-	406	64	213	-	211	-
2002	120	30	7	-	8	-	6	-	361	52	189	-	206	-
2003	201	24	12	-	6	-	4	-	334	40	199	-	209	2
2004	163	25	10	-	7	-	4	-	290	38	201	-	216	2
2005	97	31	16	-	13	-	7	-	270	42	241	-	164	1
Total	1272	236	77	-	56	-	41	-	2616	404	1472	-	1533	5

Table 3.2b: Admission by Classification of Offences In Prison

	Sex offence		Ind. H offence		Ind. H pedalin		Ind. Cultivation		Traffic offence		Human traffic		Unlaw poss.	
Jan-Dec	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1999	31	-	31	16	64	4	91	2	3	-	-	-	-	-
2000	20	-	75	13	81	7	69	2	-	-	-	-	-	-
2001	37	-	41	10	60	-	53	-	-	-	-	-	-	-
2002	40	-	47	7	54	9	49	2	7	-	-	-	4	-
2003	64	-	101	6	97	3	54	4	2	-	-	1	3	1
2004	50	-	97	8	83	10	40	1	3	-	-	1	-	1
2005	61	-	63	7	70	3	47	6	2	-	-	1	4	1
Total	303	-	455	67	509	36	403	17	17	-	-	3	1	3

Table 3.3a:Prison Admissions by Classification of Ages

	Under 15Years		16-20 yrs		21-25 yrs		26-30 yrs		31-35 yrs		36-40 yrs		41-45 yrs	
Jan-Dec	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1999	-	-	74	5	420	20	611	35	165	16	220	32	106	20
2000	-	-	100	3	432	12	404	16	170	7	211	12	24	2
2001	-	-	43	-	220	13	318	41	174	36	122	10	179	12
2002	-	-	32	1	143	16	436	20	201	47	181	10	144	16
2003	-	-	93	3	420	7	401	12	146	30	200	21	20	17
2004	-	-	90	1	120	6	262	26	235	20	292	19	140	18

2005	**-**	**-**	**72**	**2**	**161**	**9**	**211**	**17**	**241**	**27**	**122**	**31**	**116**	**12**
Total	**-**	**-**	**504**	**15**	**1916**	**83**	**2643**	**167**	**1332**	**183**	**1348**	**135**	**729**	**97**

Source: Computed from Field Survey in Sapele road, Benin City Prison yard 2006.

Table 3.4 Prison admission with classification by Religion

	Christian		**Islam**		**Tradition**		**Athrist**		**Other**		**Total**	
Jan-Dec	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**
1999	**1256**	**109**	**306**	**6**	**12**	**-**	**17**	**-**	**23**	**60**	**1614**	**175**
2000	**1340**	**144**	**40**	**4**	**7**	**1**	**-**	**-**	**2**	**4**	**1389**	**153**
2001	**1007**	**110**	**97**	**3**	**16**	**-**	**12**	**-**	**97**	**-**	**1229**	**113**
2002	**987**	**101**	**197**	**1**	**2**	**3**	**-**	**5**	**-**	**10**	**1183**	**120**
2003	**929**	**93**	**329**	**1**	**31**	**-**	**14**	**-**	**24**	**-**	**1327**	**94**
2004	**977**	**91**	**190**	**1**	**5**	**-**	**-**	**-**	**2**	**-**	**1174**	**92**
Total	**7532**	**746**	**1187**	**17**	**73**	**4**	**43**	**5**	**148**	**74**	**8980**	**846**

Source: Computed from Field Survey in Sapele road,Benin City Prison yard 2006.

Admission by classification of offences in prison and analyses Projections

Table 3.5 Prison admission by Assult and Projection

Assault					
	Male $\hat{Y}_t = 304 - 0.81x + 1.905x^2$			***Female*** $\hat{Y}_t = 5.1777(1.05737)^x$	
Years(t)	***X***	***Yt***	***Predicted***	***Yt***	***Predicted***
1999	***1***	***301***	***305.095***	***55***	***58.34324***
2000	***2***	***311***	***310***	***65***	***61.6904***
2001	***3***	***329***	***318.715***	***66***	***65.22957***
2002	***4***	***330***	***331.24***	***70***	***68.9718***
2003	***5***	***341***	***347.575***	***74***	***72.92871***
2004	***6***	***363***	***367.72***	***75***	***77.11263***
2005	***7***	***397***	***391.675***	***81***	***81.53658***
2006	***8***	***-***	***419.44***	***-***	***86.21433***
2007	***9***	***-***	***451.015***	***-***	***91.16045***
2008	***10***	***-***	***486.4***	***-***	***96.39032***
2009	***11***	***-***	***525.595***	***-***	***101.9202***
2010	***12***	***-***	***568.6***	***-***	***107.7674***
2011	***13***	***-***	***615.415***	***-***	***113.95***
2012	***14***	***-***	***666.04***	***-***	***120.4873***
2013	***15***	***-***	***720.475***	***-***	***127.3997***
2014	***16***	***-***	***778.72***	***-***	***134.7086***
2015	***17***	***-***	***840.775***	***-***	***142.4368***
2016	***18***	***-***	***906.64***	***-***	***150.6084***
2017	***19***	***-***	***976.315***	***-***	***159.2488***
2018	***20***	***-***	***1049.8***	***-***	***168.385***
2019	***21***	***-***	***1127.095***	***-***	***178.0452***
2020	***22***	***-***	***1208.2***	***-***	***188.2597***
2021	***23***	***-***	***1293.115***	***-***	***199.0601***
2022	***24***	***-***	***1381.84***	***-***	***210.4802***
2023	***25***	***-***	***1474.375***	***-***	***222.5554***
2024	***26***	***-***	***1570.72***	***-***	***235.3234***
2025	***27***	***-***	***1670.875***	***-***	***248.8239***

Table 3.6 Prison admission by Arson and Projection

Arson					
	Male $\hat{Y}_t = 19.86 - 6.44x + 0.845x^2$			Female	
Years(t)	X	Yt	Predicted	Yt	Predicted
1999	1	17	14.265	-	-
2000	2	5	10.36	-	-
2001	3	10	8.145	-	-
2002	4	7	7.62	-	-
2003	5	12	8.785	-	-
2004	6	10	11.64	-	-
2005	7	16	16.185	-	-
2006	8	-	18.314	-	-
2007	9	-	25.606	-	-
2008	10	-	34.47	-	-
2009	11	-	44.906	-	-
2010	12	-	56.914	-	-
2011	13	-	70.494	-	-
2012	14	-	85.646	-	-
2013	15	-	102.37	-	-
2014	16	-	120.666	-	-
2015	17	-	140.534	-	-
2016	18	-	161.974	-	-
2017	19	-	184.986	-	-
2018	20	-	209.57	-	-
2019	21	-	235.726	-	-
2020	22	-	263.454	-	-
2021	23	-	292.754	-	-
2022	24	-	323.626	-	-
2023	25	-	356.07	-	-
2024	26	-	390.086	-	-
2025	27	-	425.674	-	-

Table 3.7 Prison admission by Affray and Projection

Affray					
	Male $\hat{Y}_t = 16.57 - 6.07x + 0.786x^2$			Female	
Years(t)	X	Yt	Predicted	Yt	Predicted
1999	1	12	11.286	-	-
2000	2	7	7.574	-	-
2001	3	3	5.434	-	-
2002	4	8	4.866	-	-
2003	5	6	5.87	-	-
2004	6	7	8.446	-	-
2005	7	13	12.594	-	-
2006	8	-	18.314	-	-
2007	9	-	25.606	-	-
2008	10	-	34.47	-	-
2009	11	-	44.906	-	-

2010	**12**	**-**	**56.914**	**-**	**-**
2011	**13**	**-**	**70.494**	**-**	**-**
2012	**14**	**-**	**85.646**	**-**	**-**
2013	**15**	**-**	**102.37**	**-**	**-**
2014	**16**	**-**	**120.666**	**-**	**-**
2015	**17**	**-**	**140.534**	**-**	**-**
2016	**18**	**-**	**161.974**	**-**	**-**
2017	**19**	**-**	**184.986**	**-**	**-**
2018	**20**	**-**	**209.57**	**-**	**-**
2019	**21**	**-**	**235.726**	**-**	**-**
2020	**22**	**-**	**263.454**	**-**	**-**
2021	**23**	**-**	**292.754**	**-**	**-**
2022	**24**	**-**	**323.626**	**-**	**-**
2023	**25**	**-**	**356.07**	**-**	**-**
2024	**26**	**-**	**390.086**	**-**	**-**
2025	**27**	**-**	**425.674**	**-**	**-**

Table 3.8 Prison admission by Murder and Projection

Murder					
	Male $\hat{Y}_t = 10.14 - 2.321x + 0.25x^2$			**Female**	
Years(t)	**X**	**Yt**	**Predicted**	**Yt**	**Predicted**
1999	**1**	**8**	**8.069**	**-**	**-**
2000	**2**	**6**	**6.498**	**-**	**-**
2001	**3**	**6**	**5.427**	**-**	**-**
2002	**4**	**6**	**4.856**	**-**	**-**
2003	**5**	**4**	**4.785**	**-**	**-**
2004	**6**	**4**	**5.214**	**-**	**-**
2005	**7**	**7**	**6.143**	**-**	**-**
2006	**8**	**-**	**7.572**	**-**	**-**
2007	**9**	**-**	**9.501**	**-**	**-**
2008	**10**	**-**	**11.93**	**-**	**-**
2009	**11**	**-**	**14.859**	**-**	**-**
2010	**12**	**-**	**18.288**	**-**	**-**
2011	**13**	**-**	**22.217**	**-**	**-**
2012	**14**	**-**	**26.646**	**-**	**-**
2013	**15**	**-**	**31.575**	**-**	**-**
2014	**16**	**-**	**37.004**	**-**	**-**
2015	**17**	**-**	**42.933**	**-**	**-**
2016	**18**	**-**	**49.362**	**-**	**-**
2017	**19**	**-**	**56.291**	**-**	**-**
2018	**20**	**-**	**63.72**	**-**	**-**
2019	**21**	**-**	**71.649**	**-**	**-**
2020	**22**	**-**	**80.078**	**-**	**-**
2021	**23**	**-**	**89.007**	**-**	**-**
2022	**24**	**-**	**98.436**	**-**	**-**
2023	**25**	**-**	**108.365**	**-**	**-**
2024	**26**	**-**	**118.794**	**-**	**-**
2025	**27**	**-**	**129.723**	**-**	**-**

Table 3.9 Prison admission by Stealing and Projection

Stealing					
	Male $\hat{Y}_t = 428 + 44.5x - 1.626x^2$			Female $\hat{Y}_t = 114.86 - 23.21x + 1.786x^2$	
Years(t)	X	Yt	Predicted	Yt	Predicted
1999	-3	466	470.88	92	93.436
2000	-2	509	510.52	76	75.584
2001	-1	566	546.92	64	61.304
2002	0	569	580.08	52	50.596
2003	1	614	610	40	43.46
2004	2	620	636.68	38	39.896
2005	3	670	660.12	42	39.904
2006	4	-	680.32	-	43.484
2007	5	-	697.28	-	50.636
2008	6	-	711	-	61.36
2009	7	-	721.48	-	75.656
2010	8	-	728.72	-	93.524
2011	9	-	732.72	-	114.964
2012	10	-	733.48	-	139.976
2013	11	-	731	-	168.56
2014	12	-	725.28	-	200.716
2015	13	-	716.32	-	236.444
2016	14	-	704.12	-	275.744
2017	15	-	688.68	-	318.616
2018	16	-	670	-	365.06
2019	17	-	648.08	-	415.076
2020	18	-	622.92	-	468.664
2021	19	-	594.52	-	525.824
2022	20	-	562.88	-	586.556
2023	21	-	528	-	650.86
2024	22	-	489.88	-	718.736
2025	23	-	448.52	-	790.184

Table 3.10 Prison admission by Robbery and Projection

Robbery					
	Male $\hat{Y}_t = 210.1215(1.007024)^x$			Female	
Years(t)	X	Yt	Predicted	Yt	Predicted
1999	-3	200	205.7553	-	-
2000	-2	233	207.2005	-	-
2001	-1	213	208.6559	-	-
2002	0	189	210.1215	-	-
2003	1	199	211.5974	-	-
2004	2	201	213.0837	-	-
2005	3	241	214.5804	-	-
2006	4	-	216.0876	-	-
2007	5	-	217.6054	-	-
2008	6	-	219.1338	-	-

2009	**7**	**-**	**220.673**	**-**	**-**
2010	**8**	**-**	**222.223**	**-**	**-**
2011	**9**	**-**	**223.7839**	**-**	**-**
2012	**10**	**-**	**225.3558**	**-**	**-**
2013	**11**	**-**	**226.9387**	**-**	**-**
2014	**12**	**-**	**228.5327**	**-**	**-**
2015	**13**	**-**	**230.1379**	**-**	**-**
2016	**14**	**-**	**231.7544**	**-**	**-**
2017	**15**	**-**	**233.3822**	**-**	**-**
2018	**16**	**-**	**235.0215**	**-**	**-**
2019	**17**	**-**	**236.6723**	**-**	**-**
2020	**18**	**-**	**238.3347**	**-**	**-**
2021	**19**	**-**	**240.0087**	**-**	**-**
2022	**20**	**-**	**241.6945**	**-**	**-**
2023	**21**	**-**	**243.3922**	**-**	**-**
2024	**22**	**-**	**245.1018**	**-**	**-**
2025	**23**	**-**	**246.8234**	**-**	**-**

Table 3.11 Prison admission by Armed Robbery and Projection

Armed Robbery					
	Male $\hat{Y}_t = 303.0739(1.042075)^x$			**Female** $\hat{Y}_t = 0.71 + 0.417x - 0.0119x^2$	
Years(t)	**X**	**Yt**	**Predicted**	**Yt**	**Predicted**
1999	**-3**	**274**	**267.825**	**0**	**0.00**
2000	**-2**	**280**	**279.0939**	**0**	**0.0764**
2001	**-1**	**291**	**290.8369**	**0**	**0.4339**
2002	**0**	**296**	**303.0739**	**0**	**0.7676**
2003	**1**	**309**	**315.8259**	**2**	**1.0775**
2004	**2**	**316**	**329.1144**	**2**	**1.3636**
2005	**3**	**364**	**342.962**	**1**	**1.6259**
2006	**4**	**-**	**357.3923**	**-**	**1.8644**
2007	**5**	**-**	**372.4297**	**-**	**2.0791**
2008	**6**	**-**	**388.0998**	**-**	**2.27**
2009	**7**	**-**	**404.4293**	**-**	**2.4371**
2010	**8**	**-**	**421.4458**	**-**	**2.5804**
2011	**9**	**-**	**439.1783**	**-**	**2.6999**
2012	**10**	**-**	**457.6569**	**-**	**2.7956**
2013	**11**	**-**	**476.913**	**-**	**2.8675**
2014	**12**	**-**	**496.9794**	**-**	**2.9156**
2015	**13**	**-**	**517.89**	**-**	**2.9399**
2016	**14**	**-**	**539.6804**	**-**	**2.9404**
2017	**15**	**-**	**562.3877**	**-**	**2.9171**
2018	**16**	**-**	**586.0503**	**-**	**2.87**
2019	**17**	**-**	**610.7086**	**-**	**2.7991**
2020	**18**	**-**	**636.4045**	**-**	**2.7044**
2021	**19**	**-**	**663.1814**	**-**	**2.5859**
2022	**20**	**-**	**691.0851**	**-**	**2.4436**
2023	**21**	**-**	**720.1627**	**-**	**2.2775**
2024	**22**	**-**	**750.4639**	**-**	**2.0876**
2025	**23**	**-**	**782.0399**	**-**	**1.8739**

Table 3.12 Prison admission by Sex offence and Projection

Sex offence					
	Male $\hat{Y}_t = 18.00 + 6.32x$			Female	
Years(t)	X	Yt	Predicted	Yt	Predicted
1999	-3	31	24.32	-	-
2000	-2	20	30.64	-	-
2001	-1	37	36.96	-	-
2002	0	40	43.28	-	-
2003	1	64	49.6	-	-
2004	2	50	55.92	-	-
2005	3	61	62.24	-	-
2006	4	-	68.56	-	-
2007	5	-	74.88	-	-
2008	6	-	81.2	-	-
2009	7	-	87.52	-	-
2010	8	-	93.84	-	-
2011	9	-	100.16	-	-
2012	10	-	106.48	-	-
2013	11	-	112.8	-	-
2014	12	-	119.12	-	-
2015	13	-	125.44	-	-
2016	14	-	131.76	-	-
2017	15	-	138.08	-	-
2018	16	-	144.4	-	-
2019	17	-	150.72	-	-
2020	18	-	157.04	-	-
2021	19	-	163.36	-	-
2022	20	-	169.68	-	-
2023	21	-	176	-	-
2024	22	-	182.32	-	-
2025	23	-	188.64	-	-

Table 3.13 Prison admission by Indian hemp and Projection

Indian hemp offence					
	Male $\hat{Y}_t = 36.4 + 7.14x$			Female	
Years(t)	X	Yt	Predicted	Yt	Predicted
1999	-3	31	43.54	16	16.285
2000	-2	75	50.68	13	12.498
2001	-1	41	57.82	10	9.639
2002	0	47	64.96	7	7.708
2003	1	101	72.1	6	6.705
2004	2	97	79.24	8	6.63
2005	3	63	86.38	7	7.483
2006	4	-	93.52	-	9.264
2007	5	-	100.66	-	11.973
2008	6	-	107.8	-	15.61
2009	7	-	114.94	-	20.175

2010	**8**	**-**	**122.08**	**-**	**25.668**
2011	**9**	**-**	**129.22**	**-**	**32.089**
2012	**10**	**-**	**136.36**	**-**	**39.438**
2013	**11**	**-**	**143.5**	**-**	**47.715**
2014	**12**	**-**	**150.64**	**-**	**56.92**
2015	**13**	**-**	**157.78**	**-**	**67.053**
2016	**14**	**-**	**164.92**	**-**	**78.114**
2017	**15**	**-**	**172.06**	**-**	**90.103**
2018	**16**	**-**	**179.2**	**-**	**103.02**
2019	**17**	**-**	**186.34**	**-**	**116.865**
2020	**18**	**-**	**193.48**	**-**	**131.638**
2021	**19**	**-**	**200.62**	**-**	**147.339**
2022	**20**	**-**	**207.76**	**-**	**163.968**
2023	**21**	**-**	**214.9**	**-**	**181.525**
2024	**22**	**-**	**222.04**	**-**	**200.01**
2025	**23**	**-**	**229.18**	**-**	**219.423**

Table 3.14 Prison admission by Indian helm pedalin and Projection

Indian helm pedalin					
	Male $\hat{Y}_t = 71.40635(1.028909)^x$			**Female** $\hat{Y}_t = 4.29 + 0.214x$	
Years(t)	**X**	**Yt**	**Predicted**	**Yt**	**Predicted**
1999	**-3**	**64**	**65.55492**	**4**	**4.504**
2000	**-2**	**81**	**67.45008**	**7**	**4.718**
2001	**-1**	**60**	**69.40003**	**0**	**4.932**
2002	**0**	**54**	**71.40635**	**9**	**5.146**
2003	**1**	**97**	**73.47067**	**3**	**5.36**
2004	**2**	**83**	**75.59467**	**10**	**5.574**
2005	**3**	**70**	**77.78007**	**3**	**5.788**
2006	**4**	**-**	**80.02866**	**-**	**6.002**
2007	**5**	**-**	**82.34224**	**-**	**6.216**
2008	**6**	**-**	**84.72272**	**-**	**6.43**
2009	**7**	**-**	**87.17201**	**-**	**6.644**
2010	**8**	**-**	**89.69211**	**-**	**6.858**
2011	**9**	**-**	**92.28506**	**-**	**7.072**
2012	**10**	**-**	**94.95297**	**-**	**7.286**
2013	**11**	**-**	**97.69801**	**-**	**7.5**
2014	**12**	**-**	**100.5224**	**-**	**7.714**
2015	**13**	**-**	**103.4285**	**-**	**7.928**
2016	**14**	**-**	**106.4185**	**-**	**8.142**
2017	**15**	**-**	**109.495**	**-**	**8.356**
2018	**16**	**-**	**112.6605**	**-**	**8.57**
2019	**17**	**-**	**115.9174**	**-**	**8.784**
2020	**18**	**-**	**119.2686**	**-**	**8.998**
2021	**19**	**-**	**122.7165**	**-**	**9.212**
2022	**20**	**-**	**126.2642**	**-**	**9.426**
2023	**21**	**-**	**129.9145**	**-**	**9.64**
2024	**22**	**-**	**133.6702**	**-**	**4.504**
2025	**23**	**-**	**137.5345**	**-**	**4.718**

Table 3.15 Prison admission by Indian helm cultivation and Projection

Indian hemp cultivation					
	Male $\hat{Y}_t = 109.29 - 23.23x + 2.06x^2$			Female $\hat{Y}_t = 3.29 - 1.4x + 0.238x^2$	
Years(t)	X	Yt	Predicted	Yt	Predicted
1999	1	91	88.12	2	2.128
2000	2	69	71.07	2	1.442
2001	3	53	58.14	0	1.232
2002	4	49	49.33	2	1.498
2003	5	54	44.64	4	2.24
2004	6	40	44.07	1	3.458
2005	7	47	47.62	6	5.152
2006	8	-	55.29	-	7.322
2007	9	-	67.08	-	9.968
2008	10	-	82.99	-	13.09
2009	11	-	103.02	-	16.688
2010	12	-	127.17	-	20.762
2011	13	-	155.44	-	25.312
2012	14	-	187.83	-	30.338
2013	15	-	224.34	-	35.84
2014	16	-	264.97	-	41.818
2015	17	-	309.72	-	48.272
2016	18	-	358.59	-	55.202
2017	19	-	411.58	-	62.608
2018	20	-	468.69	-	70.49
2019	21	-	529.92	-	78.848
2020	22	-	595.27	-	87.682
2021	23	-	664.74	-	96.992
2022	24	-	738.33	-	106.778
2023	25	-	816.04	-	117.04
2024	26	-	897.87	-	127.778
2025	27	-	983.82	-	138.992

Table 3.16 Prison admission by Traffic Offence and Projection

Traffic Offence					
	Male $\hat{Y}_t = 2.203217(1.061608)^x$			Female	
Years(t)	X	Yt	Predicted	Yt	Predicted
1999	-3	3	1.841469	-	-
2000	-2	0	1.954919	-	-
2001	-1	0	2.075358	-	-
2002	0	7	2.203217	-	-
2003	1	2	2.338953	-	-
2004	2	3	2.483051	-	-
2005	3	2	2.636028	-	-
2006	4	-	2.798428	-	-
2007	5	-	2.970834	-	-
2008	6	-	3.153862	-	-
2009	7	-	3.348165	-	-
2010	8	-	3.55444	-	-

2011	**9**	**-**	**3.773422**	**-**	**-**
2012	**10**	**-**	**4.005896**	**-**	**-**
2013	**11**	**-**	**4.252691**	**-**	**-**
2014	**12**	**-**	**4.514692**	**-**	**-**
2015	**13**	**-**	**4.792834**	**-**	**-**
2016	**14**	**-**	**5.088111**	**-**	**-**
2017	**15**	**-**	**5.40158**	**-**	**-**
2018	**16**	**-**	**5.734361**	**-**	**-**
2019	**17**	**-**	**6.087645**	**-**	**-**
2020	**18**	**-**	**6.462693**	**-**	**-**
2021	**19**	**-**	**6.860848**	**-**	**-**
2022	**20**	**-**	**7.283532**	**-**	**-**
2023	**21**	**-**	**7.732257**	**-**	**-**
2024	**22**	**-**	**8.208627**	**-**	**-**
2025	**23**	**-**	**8.714345**	**-**	**-**

Table 3.17 Prison admission by Human Trafficking and Projection

Human Trafficking					
	Male			**Female** $\hat{Y}_t = 1.00(1.00)^x$	
Years(t)	**X**	**Yt**	**Predicted**	**Yt**	**Predicted**
1999	**-3**	**-**	**-**	**0**	**1**
2000	**-2**	**-**	**-**	**0**	**1**
2001	**-1**	**-**	**-**	**0**	**1**
2002	**0**	**-**	**-**	**0**	**1**
2003	**1**	**-**	**-**	**1**	**1**
2004	**2**	**-**	**-**	**1**	**1**
2005	**3**	**-**	**-**	**1**	**1**
2006	**4**	**-**	**-**	**-**	**1**
2007	**5**	**-**	**-**	**-**	**1**
2008	**6**	**-**	**-**	**-**	**1**
2009	**7**	**-**	**-**	**-**	**1**
2010	**8**	**-**	**-**	**-**	**1**
2011	**9**	**-**	**-**	**-**	**1**
2012	**10**	**-**	**-**	**-**	**1**
2013	**11**	**-**	**-**	**-**	**1**
2014	**12**	**-**	**-**	**-**	**1**
2015	**13**	**-**	**-**	**-**	**1**
2016	**14**	**-**	**-**	**-**	**1**
2017	**15**	**-**	**-**	**-**	**1**
2018	**16**	**-**	**-**	**-**	**1**
2019	**17**	**-**	**-**	**-**	**1**
2020	**18**	**-**	**-**	**-**	**1**
2021	**19**	**-**	**-**	**-**	**1**
2022	**20**	**-**	**-**	**-**	**1**
2023	**21**	**-**	**-**	**-**	**1**
2024	**22**	**-**	**-**	**-**	**1**
2025	**23**	**-**	**-**	**-**	**1**

Table 3.18 Prison admission by Unlawful possession and Projection

Unlawful possession					
	Male $\hat{Y}_t = 1.73851(1.206553)^x$			Female $\hat{Y}_t = 1.00(1.00)^x$	
Years(t)	X	Yt	Predicted	Yt	Predicted
1999	-3	0	0.989778	0	1
2000	-2	0	1.19422	0	1
2001	-1	0	1.44089	0	1
2002	0	4	1.738511	0	1
2003	1	3	2.097605	1	1
2004	2	0	2.530872	1	1
2005	3	4	3.053632	1	1
2006	4	-	3.68437	-	1
2007	5	-	4.445388	-	1
2008	6	-	5.363597	-	1
2009	7	-	6.471465	-	1
2010	8	-	7.808167	-	1
2011	9	-	9.420969	-	1
2012	10	-	11.3669	-	1
2013	11	-	13.71477	-	1
2014	12	-	16.5476	-	1
2015	13	-	19.96556	-	1
2016	14	-	24.08951	-	1
2017	15	-	29.06527	-	1
2018	16	-	35.0688	-	1
2019	17	-	42.31237	-	1
2020	18	-	51.05212	-	1
2021	19	-	61.5971	-	1
2022	20	-	74.32018	-	1
2023	21	-	89.67125	-	1
2024	22	-	108.1931	-	1
2025	23	-	130.5408	-	1

Prison Admission by Classification of Ages

Table 3.19 Prison admission by 16-20 years and Projection

16-20 years					
	Male $\hat{Y}_t = 67.11877\,(1.017235)^x$			Female $\hat{Y}_t = 1.901855\,(0.871613)^x$	
Years(t)	X	Yt	Predicted	Yt	Predicted
1999	-3	74	63.76458	5	2.872149
2000	-2	100	64.8636	3	2.503401
2001	-1	43	65.98155	0	2.181996
2002	0	32	67.11877	1	1.901855
2003	1	93	68.2756	3	1.657681
2004	2	90	69.45236	1	1.444856
2005	3	72	70.6494	2	1.259355
2006	4	-	71.86708	-	1.09767
2007	5	-	73.10574	-	0.956743
2008	6	-	74.36575	-	0.833909
2009	7	-	75.64748	-	0.726846

2010	**8**	**-**	**76.9513**	**-**	**0.633528**
2011	**9**	**-**	**78.27759**	**-**	**0.552191**
2012	**10**	**-**	**79.62674**	**-**	**0.481297**
2013	**11**	**-**	**80.99915**	**-**	**0.419504**
2014	**12**	**-**	**82.39521**	**-**	**0.365645**
2015	**13**	**-**	**83.81533**	**-**	**0.318701**
2016	**14**	**-**	**85.25992**	**-**	**0.277784**
2017	**15**	**-**	**86.72942**	**-**	**0.24212**
2018	**16**	**-**	**88.22424**	**-**	**0.211035**
2019	**17**	**-**	**89.74483**	**-**	**0.183941**
2020	**18**	**-**	**91.29162**	**-**	**0.160325**
2021	**19**	**-**	**92.86507**	**-**	**0.139741**
2022	**20**	**-**	**94.46565**	**-**	**0.1218**
2023	**21**	**-**	**96.09381**	**-**	**0.106163**
2024	**22**	**-**	**97.75003**	**-**	**0.092533**
2025	**23**	**-**	**99.4348**	**-**	**0.080653**

Table 3.20 Prison admission by 21-25 years and Projection

21-25 years					
	Male $\hat{Y}_t = 240.3373(0.842707)^x$			**Female** $\hat{Y}_t = 10.94952(0.854556)^x$	
Years(t)	**X**	**Yt**	**Predicted**	**Yt**	**Predicted**
1999	**-3**	**420**	**401.5972**	**20**	**17.54583**
2000	**-2**	**432**	**338.4289**	**12**	**14.99389**
2001	**-1**	**220**	**285.1966**	**13**	**12.81312**
2002	**0**	**143**	**240.3373**	**16**	**10.94952**
2003	**1**	**420**	**202.534**	**7**	**9.356979**
2004	**2**	**120**	**170.6769**	**6**	**7.99606**
2005	**3**	**161**	**143.8307**	**9**	**6.83308**
2006	**4**	**-**	**121.2072**	**-**	**5.839248**
2007	**5**	**-**	**102.1422**	**-**	**4.989964**
2008	**6**	**-**	**86.07602**	**-**	**4.264202**
2009	**7**	**-**	**72.5369**	**-**	**3.643999**
2010	**8**	**-**	**61.12739**	**-**	**3.114001**
2011	**9**	**-**	**51.51251**	**-**	**2.661087**
2012	**10**	**-**	**43.40997**	**-**	**2.274048**
2013	**11**	**-**	**36.58191**	**-**	**1.943301**
2014	**12**	**-**	**30.82785**	**-**	**1.660659**
2015	**13**	**-**	**25.97886**	**-**	**1.419126**
2016	**14**	**-**	**21.89258**	**-**	**1.212722**
2017	**15**	**-**	**18.44904**	**-**	**1.036339**
2018	**16**	**-**	**15.54714**	**-**	**0.885609**
2019	**17**	**-**	**13.10169**	**-**	**0.756803**
2020	**18**	**-**	**11.04089**	**-**	**0.64673**
2021	**19**	**-**	**9.304243**	**-**	**0.552667**
2022	**20**	**-**	**7.840755**	**-**	**0.472285**
2023	**21**	**-**	**6.607462**	**-**	**0.403594**
2024	**22**	**-**	**5.568158**	**-**	**0.344893**
2025	**23**	**-**	**4.692328**	**-**	**0.294731**

Table 3.21 Prison admission by 26-30 years and Projection

26-30 years					
	Male $\hat{Y}_t = 358.3397(0.872346)^x$			Female $\hat{Y}_t = 21.9252(0.91707)^x$	
Years(t)	X	Yt	Predicted	Yt	Predicted
1999	-3	611	539.7953	35	28.4275
2000	-2	404	470.8881	16	26.06996
2001	-1	318	410.7772	41	23.90793
2002	0	436	358.3397	20	21.9252
2003	1	401	312.5961	12	20.10691
2004	2	262	272.6918	26	18.43941
2005	3	211	237.8815	17	16.9102
2006	4	-	207.5149	-	15.5078
2007	5	-	181.0247	-	14.22172
2008	6	-	157.9161	-	13.04228
2009	7	-	137.7575	-	11.96066
2010	8	-	120.1721	-	10.96875
2011	9	-	104.8316	-	10.05909
2012	10	-	91.44941	-	9.224871
2013	11	-	79.7755	-	8.459837
2014	12	-	69.59181	-	7.758248
2015	13	-	60.70811	-	7.114843
2016	14	-	52.95846	-	6.524797
2017	15	-	46.19808	-	5.983684
2018	16	-	40.30069	-	5.487447
2019	17	-	35.15614	-	5.032364
2020	18	-	30.6683	-	4.615021
2021	19	-	26.75336	-	4.232289
2022	20	-	23.33818	-	3.881298
2023	21	-	20.35896	-	3.559416
2024	22	-	17.76005	-	3.264227
2025	23	-	15.4929	-	2.993519

Table 3.22 Prison admission by 21-35 years and Projection

31-35 years					
	Male $\hat{Y}_t = 187.3833(1.059135)^x$			Female $\hat{Y}_t = 22.66234(1.132625)^x$	
Years(t)	X	Yt	Predicted	Yt	Predicted
1999	-3	165	157.7163	16	15.59718
2000	-2	170	167.0429	7	17.66576
2001	-1	174	176.921	36	20.00869
2002	0	201	187.3833	47	22.66234
2003	1	146	198.4643	30	25.66794
2004	2	235	210.2005	20	29.07215
2005	3	241	222.6308	27	32.92785
2006	4	-	235.7961	-	37.29492
2007	5	-	249.74	-	42.24116
2008	6	-	264.5085	-	47.8434
2009	7	-	280.1503	-	54.18864

2010	**8**	**-**	**296.717**	**-**	**61.37542**
2011	**9**	**-**	**314.2635**	**-**	**69.51535**
2012	**10**	**-**	**332.8476**	**-**	**78.73483**
2013	**11**	**-**	**352.5306**	**-**	**89.17706**
2014	**12**	**-**	**373.3777**	**-**	**101.0042**
2015	**13**	**-**	**395.4575**	**-**	**114.3999**
2016	**14**	**-**	**418.843**	**-**	**129.5722**
2017	**15**	**-**	**443.6114**	**-**	**146.7567**
2018	**16**	**-**	**469.8445**	**-**	**166.2204**
2019	**17**	**-**	**497.6289**	**-**	**188.2654**
2020	**18**	**-**	**527.0564**	**-**	**213.2341**
2021	**19**	**-**	**558.224**	**-**	**241.5143**
2022	**20**	**-**	**591.2348**	**-**	**273.5452**
2023	**21**	**-**	**626.1977**	**-**	**309.8242**
2024	**22**	**-**	**663.2281**	**-**	**350.9146**
2025	**23**	**-**	**702.4483**	**-**	**397.4548**

Table 3.23 Prison admission by 36-40 years and Projection

36-40 years					
	Male $\hat{Y}_t = 184.5936(0.977935)^x$			**Female** $\hat{Y}_t = 17.35896(1.057513)^x$	
Years(t)	**X**	**Yt**	**Predicted**	**Yt**	**Predicted**
1999	**-3**	**220**	**197.3724**	**32**	**14.67799**
2000	**-2**	**211**	**193.0174**	**12**	**15.52217**
2001	**-1**	**122**	**188.7585**	**10**	**16.41489**
2002	**0**	**181**	**184.5936**	**10**	**17.35896**
2003	**1**	**200**	**180.5206**	**21**	**18.35732**
2004	**2**	**292**	**176.5374**	**19**	**19.41311**
2005	**3**	**122**	**172.6422**	**31**	**20.52961**
2006	**4**	**-**	**168.8328**	**-**	**21.71033**
2007	**5**	**-**	**165.1076**	**-**	**22.95895**
2008	**6**	**-**	**161.4645**	**-**	**24.27939**
2009	**7**	**-**	**157.9018**	**-**	**25.67577**
2010	**8**	**-**	**154.4178**	**-**	**27.15246**
2011	**9**	**-**	**151.0106**	**-**	**28.71408**
2012	**10**	**-**	**147.6786**	**-**	**30.36551**
2013	**11**	**-**	**144.4201**	**-**	**32.11192**
2014	**12**	**-**	**141.2335**	**-**	**33.95877**
2015	**13**	**-**	**138.1172**	**-**	**35.91183**
2016	**14**	**-**	**135.0697**	**-**	**37.97723**
2017	**15**	**-**	**132.0894**	**-**	**40.16141**
2018	**16**	**-**	**129.1749**	**-**	**42.47121**
2019	**17**	**-**	**126.3246**	**-**	**44.91385**
2020	**18**	**-**	**123.5373**	**-**	**47.49698**
2021	**19**	**-**	**120.8115**	**-**	**50.22867**
2022	**20**	**-**	**118.1458**	**-**	**53.11747**
2023	**21**	**-**	**115.5389**	**-**	**56.17241**
2024	**22**	**-**	**112.9896**	**-**	**59.40305**
2025	**23**	**-**	**110.4965**	**-**	**62.81949**

Table 3.24 Prison admission by 41-45 years and Projection

41-45 years					
	Male $\hat{Y}_t = 80.177\,(1.90405)^x$			Female $\hat{Y}_t = 11.59\,(1.121484)^x$	
Years(t)	X	Yt	Predicted	Yt	Predicted
1999	-3	106	67.50271	20	8.221369
2000	-2	24	71.4876	2	9.220134
2001	-1	179	75.70774	12	10.34023
2002	0	144	80.177	16	11.59641
2003	1	20	84.9101	17	13.00518
2004	2	140	89.9226	18	14.58511
2005	3	116	95.23101	12	16.35696
2006	4	-	100.8528	-	18.34407
2007	5	-	106.8064	-	20.57258
2008	6	-	113.1116	-	23.07182
2009	7	-	119.7889	-	25.87468
2010	8	-	126.8604	-	29.01804
2011	9	-	134.3494	-	32.54327
2012	10	-	142.2804	-	36.49676
2013	11	-	150.6797	-	40.93053
2014	12	-	159.5748	-	45.90294
2015	13	-	168.995	-	51.47941
2016	14	-	178.9712	-	57.73333
2017	15	-	189.5365	-	64.74701
2018	16	-	200.7254	-	72.61274
2019	17	-	212.5748	-	81.43402
2020	18	-	225.1238	-	91.32696
2021	19	-	238.4136	-	102.4217
2022	20	-	252.4878	-	114.8643
2023	21	-	267.393	-	128.8185
2024	22	-	283.178	-	144.4679
2025	23	-	299.8949	-	162.0184

Table 3.25 Prison admission by 46-50 years and Projection

46-50 years					
	Male $\hat{Y}_t = 46.57903\,(1.228613)^x$			Female $\hat{Y}_t = 2.782082\ (0.695065)^x$	
Years(t)	X	Yt	Predicted	Yt	Predicted
1999	-3	10	25.11571	43	8.285014
2000	-2	43	30.85748	1	5.758625
2001	-1	164	37.91189	1	4.00262
2002	0	40	46.57903	10	2.782082
2003	1	40	57.22758	3	1.933729
2004	2	31	70.31053	1	1.344068
2005	3	136	86.3844	1	0.934215
2006	4	-	106.133	-	0.64934
2007	5	-	130.3963	-	0.451334
2008	6	-	160.2066	-	0.313706
2009	7	-	196.8318	-	0.218046

2010	**8**	**-**	**241.83**	**-**	**0.151556**
2011	**9**	**-**	**297.1154**	**-**	**0.105342**
2012	**10**	**-**	**365.0398**	**-**	**0.073219**
2013	**11**	**-**	**448.4925**	**-**	**0.050892**
2014	**12**	**-**	**551.0235**	**-**	**0.035373**
2015	**13**	**-**	**676.9945**	**-**	**0.024587**
2016	**14**	**-**	**831.7639**	**-**	**0.017089**
2017	**15**	**-**	**1021.916**	**-**	**0.011878**
2018	**16**	**-**	**1255.539**	**-**	**0.008256**
2019	**17**	**-**	**1542.57**	**-**	**0.005739**
2020	**18**	**-**	**1895.222**	**-**	**0.003989**
2021	**19**	**-**	**2328.493**	**-**	**0.002772**
2022	**20**	**-**	**2860.816**	**-**	**0.001927**
2023	**21**	**-**	**3514.835**	**-**	**0.001339**
2024	**22**	**-**	**4318.37**	**-**	**0.000931**
2025	**23**	**-**	**5305.605**	**-**	**0.000647**

Table 3.26 Prison admission by 51 years and above and Projection

51 years above					
	Male $\hat{Y}_t = 6.06653(0.927491)^x$			**Female** $\hat{Y}_t = 1.219014(0.861973)^x$	
Years(t)	**X**	**Yt**	**Predicted**	**Yt**	**Predicted**
1999	**-3**	**8**	**7.603451**	**4**	**1.90339**
2000	**-2**	**5**	**7.052134**	**0**	**1.640671**
2001	**-1**	**9**	**6.540793**	**0**	**1.414214**
2002	**0**	**6**	**6.066529**	**0**	**1.219014**
2003	**1**	**7**	**5.626653**	**1**	**1.050757**
2004	**2**	**4**	**5.218671**	**1**	**0.905724**
2005	**3**	**5**	**4.840272**	**0**	**0.780709**
2006	**4**	**-**	**4.48931**	**-**	**0.67295**
2007	**5**	**-**	**4.163796**	**-**	**0.580065**
2008	**6**	**-**	**3.861885**	**-**	**0.5**
2009	**7**	**-**	**3.581864**	**-**	**0.430986**
2010	**8**	**-**	**3.322148**	**-**	**0.371499**
2011	**9**	**-**	**3.081263**	**-**	**0.320222**
2012	**10**	**-**	**2.857845**	**-**	**0.276022**
2013	**11**	**-**	**2.650626**	**-**	**0.237924**
2014	**12**	**-**	**2.458433**	**-**	**0.205084**
2015	**13**	**-**	**2.280175**	**-**	**0.176777**
2016	**14**	**-**	**2.114843**	**-**	**0.152377**
2017	**15**	**-**	**1.961498**	**-**	**0.131345**
2018	**16**	**-**	**1.819272**	**-**	**0.113215**
2019	**17**	**-**	**1.687359**	**-**	**0.097589**
2020	**18**	**-**	**1.565011**	**-**	**0.084119**
2021	**19**	**-**	**1.451534**	**-**	**0.072508**
2022	**20**	**-**	**1.346285**	**-**	**0.0625**
2023	**21**	**-**	**1.248668**	**-**	**0.053873**
2024	**22**	**-**	**1.158129**	**-**	**0.046437**
2025	**23**	**-**	**1.074154**	**-**	**0.040028**

It can be observed from the various projection Tables, there would an increase in the various crime in the society, if nothing is done to check the trend.

IV. CONCLUSION

This study present estimates of the prison inmate and crime committed including total Prison Population point at a period of time using the Time Series Model approach analysis that is define in the paper. This is seen in the various presented Tables. In the projection, 1999-2005 data were use in forecasting values for number of persons committed to prison and prison inmates population to the year 2025. Our findings showed clearly that the future prison population and crime committed can be predicted by knowing the past behaviour of its prison population and crime committed. To reduce crime incidence, proper management decision based on the known the population of the inmate and crime committed is required. The projection based on this data showed that there will high increase in male and female population across all the age structures.

Consequently upon this, the study and analysis of this available data will enable the Benin, Sapele road prison administration to know what the future population will look like as regards to population inmates, capacity and crime committed to be able to make adequate provision for their need.

V. RECOMMENDATIONS

During the field survey to Benin, Sapele road prison, we noticed that the prison is under staffed and the necessary facilities to carry out their daily duties effectively are lacking in some cases, hence they finds it difficult to cope with the pressure of work, with these, there is urgent need for improvement by employing more staffs to help in limiting some lapses and provision of equipments such as; Patrol-van, Internet facilities, Computer in storing information and data, above all Inter-con phones.

In order to increase the efficiency of the Nigerian security agents, the following steps should be taken:

i. The Nigerian security agent should be re-oriented professionally.
ii. The Nigerian security agent should be decentralized. There is too much control of resources at the center without adequate system of distribution. This is why no matter the amount of money spent on the acquisition of resources to improve their performance; it will not yield enough positive results. Every security agent division should be well equipped to be able to carry out its function effectively.

Incentives and benefits should be given to staff; organization should as well take proper and adequate care of every staff in re-enforcing them in carrying out their proper duties for future purpose. Finally, crime prevention strategies should be adopted. This should include crime prevention enlightenment campaign and quick administration of justice system in order to decongest the prison population. Government and Prisons authorities should publish Prisons and crime data in the present times to serve as deterrent to people to avoid criminal activities.

REFERRENCES

[1] Box, G.E.P., Jenkin, G. M., Reinsel, G. C. and Ljung, G. M. (2015): Time series analysis; Forcasting and control. 5th edition, Wiley, New York.
[2] Blumstein A. and Moitra S. (1979) : “an analysis of the time series of the Imprisonment rate in the State of the United State: A further test of the stability of punishment hypothesis. Journal of criminal law and criminology, Northwest University school of law. Vol.70. No.3.
[3] Box, G. E. P. and Jenkins G. M.(1976): Time series analysis, forecasting and control, San Francisco, Holden day.
[4] Cochran W.G.(1963): Sampling Techniques. 2nd Edition, John Wiley and Sons Inc. New York.
[5] Ebetemhen S.C. (2001): Introduction to Statistics II. 1st Edition, Mindex Press Benin City.
[6] Ebetemhen, S.C. (2001): Research methodology in Social and Applied Sciences.1st Edition, Mindex Press, Benin City.
[7] Ibukunola A.O., Jatto, M. and Amaihian, O. M. (2006): “Prison and Crime Committed in Nigeria”. An undergraduate Project submitted to the Department of Mathematics, Ambrose Alli University, Ekpoma, Unpublished.

