



Statistical Analysis of effects of female students' pregnancy in respect to the academic performances in Federal University, Lokoja, Kogi State

Ajare Emmanuel Oloruntoba¹, Olubunmi Temitope Olorunpomi², Ajare Aduragba Oluwasegun³, Ajare Oluwayemisi Esthe⁴, Hafsat Olaide Salah⁵

¹ School of Quantitative Sciences, College of Art and Sciences, University Utara Malaysia, Sintok, Malaysia

² Department of Mathematics and Statistics Federal University Lokoja, Nigeria

³ Department of Anatomy, University of Ilorin, Ilorin, Nigeria

⁴ Department of Adult Education, Ondo State University Akungba, Nigeria

⁵ Department of University of Library and information, University of Abuja, Nigeria

Abstract

This study was on perceived effects of female students pregnancy on the academic performances in Federal University, Lokoja, Kogi State, Nigeria. This study was conducted at the College of Health and Sciences, Federal University, Lokoja to determine the level of awareness of challenges of pregnancy on the academic performance of female students, types of academic challenges due to pregnancy and the effects of pregnancy on the academic performance of female students in Federal University, Lokoja. Three research questions were formulated to guide the work. Literature was reviewed based on the objectives. A descriptive survey design was used in which 62 respondents were selected using census survey. Questionnaire was used to collect data that was analyzed using frequency, percentages and charts. Pilot study was conducted and reliability coefficient of 0.8 was obtained. The study revealed that 50 female students (representing 80.6%) of the pregnant students are aware of the challenges of pregnancy on academic, the students experience challenges such as physical discomfort in 24(38.7%), reduced concentration span in 17(17.7%) and missing of lectures in 53 (85.5%). These affect their academics as they result in (30.6%) absenteeism, (27.4%) low academic performance, (24.2%) difficulty adjusting to motherhood as pregnant students and (17.7%) rewriting of courses. Conclusion was drawn based on the findings. Recommendations and suggestions for further studies were made.

Keywords: Pregnancy, academic, performances, forecast, control, trend change

Introduction

Pregnancy in university often leads to negative consequences for female students, including a higher risk of dropping out, reduced academic performance, and financial strain. Psychologically, students may face increased stress, anxiety, feelings of isolation, and potential stigma. Support systems and institutional policies are crucial, but many universities are ill-equipped to provide the necessary resources and understanding for pregnant and parenting students to succeed academically and personally. As career competition grows fiercer in the working world, the importance of students doing well in school has caught the attention of parents, legislators and government education departments alike. It has become imperative that areas of achievement and failure in student's academic career be evaluated to foster improvement and make full use of learning process.

Performance in school is evaluated in a number of ways such as written and oral tests, presentations, homework's and participating in class activities and discussions. Pregnancy is a condition when a child bearing mother is having a developing fetus or embryo inside her. Mfuh, Umma and Sunday (2013) described this as: "the most rewarding experience of a woman's life which can also be a tremendous challenge. This is a period a woman undergoes several hormonal changes accomplished by discomfort, distraction and physiological transformation which may interfere with her studies in conjunction with her responsibilities at home as a wife for the married. Recent research in South Africa discovered that more than thirty

percent (31.5%) of girl at age 18 have given birth at least once (Karra and lee, 2012). This statistics according to them shows that pregnancy especially that of the teenager is becoming more and more a barrier to females education.

In Nigerian universities, the increase rate of students involving in prenatal sex has predisposed the student to unwanted pregnancies either by their fiance or boy friend as is rampant in the various institutions Pandy, Makiwane, Ranched and Letsoalo (2009) opined that as young people spend longer periods in education, as part of the natural course of development, sexual experimentation and maturity is increasingly coinciding with them. More so, the number of years spent by the students in the institution seems to trigger the inability to control their urges for marriage until after graduating.

As the pregnant student are also expected to meet a minimum rate of academic progress which means passing 50% of the credit units for the subjects enrolled over the duration of the course, this paper therefore, proposes to explore how pregnancy affects the academic progression of female students during degree period at federal university, Lokoja. US department of education (2013) reported that pregnancy is consistently the most common reason given by female student for dropping out of school. Data collected by the National centre for education statistics in (2004), showed that 27.8% of the female students in 2002 and subsequently dropped out due to pregnancy. Similarly, a 2006 report found that, of 467 survey respondents age 16 through 25 who dropped out of public high schools in 25 different locations across the country, 26% of young men

and young women combined, one—third of young women said that becoming a parent was a major factor in their decision to leave school to which they reported doing reasonably well in school before becoming pregnant. Being a student of a university requires high academic effort with utmost attention to meet with the high expectation of the student. This is time consuming and life exhausting in itself talk more combining it with the demand of pregnancy. The threat and trauma of stepping down starring the students on the face each session should be enough to scare every student away from any form of distraction to total devotion to academic work, yet the increase in pregnancy among the female students of FUL keeps booming. The above observations and considerations have given the researcher concern being a female student of the same institution; he deemed it worthy to investigate on the effect of pregnancy on the academic performance of the female students in FUL to fulfill the following objectives.

Material and Methods

Research design has been defined by Marshall and Rossman (2006) ^[19] as “a plan for undertaking a systematic exploration of the phenomenon of interest”. All the decision made by the researcher in planning the study constitutes the design of the research (Mamhute, 2011) ^[18]. For Chinweuba, Iheanacho and Agbapuonwu (2014) ^[7], it entails the steps used in generating data and converting such data into meaningful forms.

The researcher adopted descriptive survey method. This design was used because the study deals with analysis of information that will enable the researcher to describe the statistical analysis of pregnant female students during their degree period in Federal University, Lokoja, Kogi State.

Research Setting

This study was conducted at the College of Health and Sciences, Federal University, Lokoja. This campus is located at Adankolo, behind Kogi State Specialist Hospital, and main campus at felele Lokoja.

Target Population

The population of the study was the female students who were pregnant at the time of study or who have been pregnant within the course of their study as students in Federal University, Lokoja.

Sampling and Sampling Techniques

Chinweuba, Iheanacho and Agbapuonwu (2014) ^[7] affirmed that when the population size is small and accessible to the researcher, he may decide to use all members as subjects for that study. This they further explained is known as census survey.

The researcher therefore, used the total population of 12 female students who were pregnant at the time of their study as students. The researcher identified students who were visibly pregnant. For those students who have delivered and those whose pregnancy was not visible, the researcher asked the visibly pregnant students to identify them.

Instrument for Data Collection

The instrument the researcher used was questionnaire which was constructed by the researcher and structured so as to ascertain the statistical analysis of pregnant female students during their degree period at Federal University, Lokoja. This consists of total number of 16 items, which were made up of close ended questions.

The questionnaire consists of two (2) sections:

Section A tried to elicit information on the demographic data of the respondents

Section B elicited information on Challenges of pregnancy and Effects of pregnancy on academic performance of Female Students in Federal University, Lokoja.

Validity of Instrument

Validity of the instrument was ascertained by giving the instrument to expert who went through it and certified that it is suitable for the study.

Reliability of Instrument

The reliability of the instrument was tested using test-retest method. A pilot study was conducted among 10 students from mid-wifery class. These students did not participate in the actual study. This group of respondents has similar characteristics with the population of this study. The answers from the first test were collected and after ten days, the same instrument was re-administered to the same respondents. The instrument reliability co-efficient was calculated using Pearson’s product moment correlated coefficient. The reliability coefficient was 0.8 which was highly reliable. The test confirmed that the instrument was suitable for the study.

Method of Data Collection

A letter of approval was received from the school (Head of the Department). A letter of consent was also written to the respondents to obtain their consent after some explanations about the nature and purpose of the study. The researcher administered the questionnaires to the respondents in their various classes the first day. Second, third and fourth visits were made within the month for greater coverage of the study populations in each class. The researchers administered a total of 62 questionnaires to the pregnant students and those who have been pregnant during their course of study that were present in school as at that time of study. The questionnaires were administered directly and all the completed questionnaires were collected.

Method of Data Analysis and Results

The data obtained through the questionnaire were analyzed using SPSS statistical instruments in applying the Pearson correlation tools to analyze data and hypotheses. The frequency distribution of responses is based on the Rensis Likert’s Scale of; Strongly Agree (SA), Agree (A), Undecided (UD), Strongly Disagree (SD), and Disagree (D) and weighted; 5, 4, 3, 2 and 1 respectively.

Data were also collected and analyzed using descriptive statistics in form of frequency, percentage. Data were presented using tables, pie chart, bar charts and histogram.

1. Demographic Analysis

Table 1: Showing the demographic data of respondents

Age Range	Frequency	Percentage
18-25	19	30.6
26-33	35	56.5
34-41	8	12.9
42-49	-	-
Total	62	100
Marital Status		
Single	7	11.3
Married	55	88.7
Separated	-	-
Divorced	-	-
Total	62	100
Religion		
Christianity	62	100
Islam	-	-
Others	-	-
Total	62	100
Current level of Respondents		
200	11	17.7
300	5	8.1
400	12	19.4
500	34	54.8
Total	62	100

Result

Table I shows that 19 female students (representing 30.6%) of the respondents were between 18-25 years, 35 female students (representing 56.5%) of the respondents were between 26-33 years, 8 female students (representing 12.9%) of the respondents were between 34-41 years, while 0 (representing 0%) was between 42-49 years. 7 female

students (representing 11.3%) of the respondents were single, while 55 female students (representing 88.7%) of the respondents were married. All the female students 62 (100%) were Christians. 11 female students (representing 17.7%) of the respondents were in 200 level, 5 female students (representing 8.1%) of the respondents were in 300 level, 12 female students (representing 19.4%) of the respondents were in 400 level, while 34 female students (representing 54.8%) of the respondents were in 500 level.

Awareness of Challenges of Pregnancy and Effects of Pregnancy on Female Students Academics

Research Question One: What is the level of awareness of challenges of pregnancy on academic performance among the female students in FUL?

Table 2: Showing students affirmation that pregnancy has effect on female students academics.

Options	No. of Respondent	Percentage
Yes	50	80.6
No	12	19.4
Total	62	100

Result 1

From the above, 50 female students (representing 80.6%) of the respondents agreed that pregnancy has effect on their academics while 12 female students (representing 19.4%) do not agree that pregnancy has effect on their academic performance.

A pie chart is a type of graph representing data in a circular form, was used to compare the areas where female students experience effects of pregnancy on academics as indicated below:

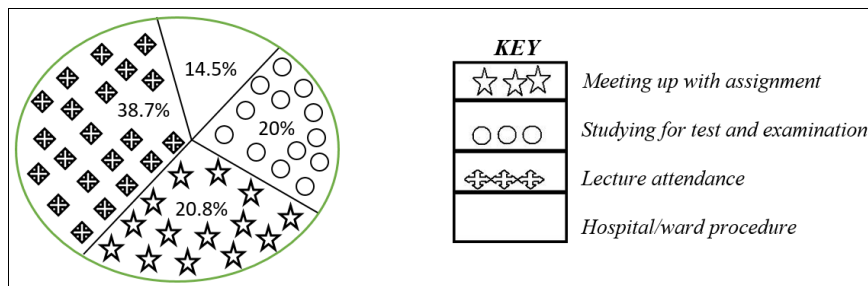


Fig 1: Showing areas where female students experience effects of pregnancy on academics

Result 2

The above figure shows that 24 female students (representing 38.7%) of the respondents experience the effects of pregnancy on the area of lecture attendance, 16 female students (representing 20.8%) of the respondents experience the effects of pregnancy on the area of hospital ward procedures, 13 female students (representing 20%) of the respondents experience the effects of pregnancy on meeting up with assignment, while 9 female students (representing 14.5%) of the respondents experience it in the area of studying for test or examination.

Table 3: Showing how often the female students meet up with class lectures before pregnancy

Options	No of Respondent	Percentage
Not Often	3	4.8
Quite often	17	27.4
Very often	42	67.7
Total	62	100

Result 3

From the above, 3 female students (representing 4.8%) of the respondents do not often meet up with class lectures before pregnancy, 17 female students (representing 27.4%) of the respondents were quite often in class while 42 female students (representing 67.7%) of the respondents meet up with their class very often.

Table 4: Showing how often the female students meet up with class lectures when pregnant

Options	No of Respondent	Percentage
Not Often	3	4.8
Quite often	17	27.4
Very often	42	67.7
Total	62	100

Result 4

The above shows that when pregnant, 31 female students (representing 50%) of the respondents do not often meet up

with their classes, 24 female students (representing 38.7%) of the respondents quite often meet up with their classes, while 7 female students (representing 11.3%) of the respondents meet up with their classes very often.

Table 5: Showing pregnant female students affirmation of missing lectures because of antenatal visits or other pregnancy demand.

Options	No of Respondent	Percentage
Yes	53	85.5
No	9	14.5
Total	62	100

Result 5

The above table shows that 53 female students (representing 85.5%) of the respondents miss lectures sometimes for antenatal visit or other pregnancy demand, while 9 female students (representing 14.5%) of the respondents do not.

Research question Two: What are the types of academic challenges faced due to pregnancy by the female students in FUL?

Table 6: Showing female students affirmation of facing academic challenges during pregnancy

Options	No of Respondents	Percentage
Yes	51	82.3%
No	11	17.7%
Total	62	100

Result 6

From the above, 51 female students (representing 82.3%) of the respondents agreed to face academic challenges during pregnancy as students, while 11 female students (representing 17.7%) do not agree to face academic challenges during pregnancy as students. A histogram is a bar graph, used in this project to show the various types of academic challenges faced by pregnant female students while schooling. These challenges include: physical discomfort, missing lectures, reduced concentration span, lack of support and social challenges.

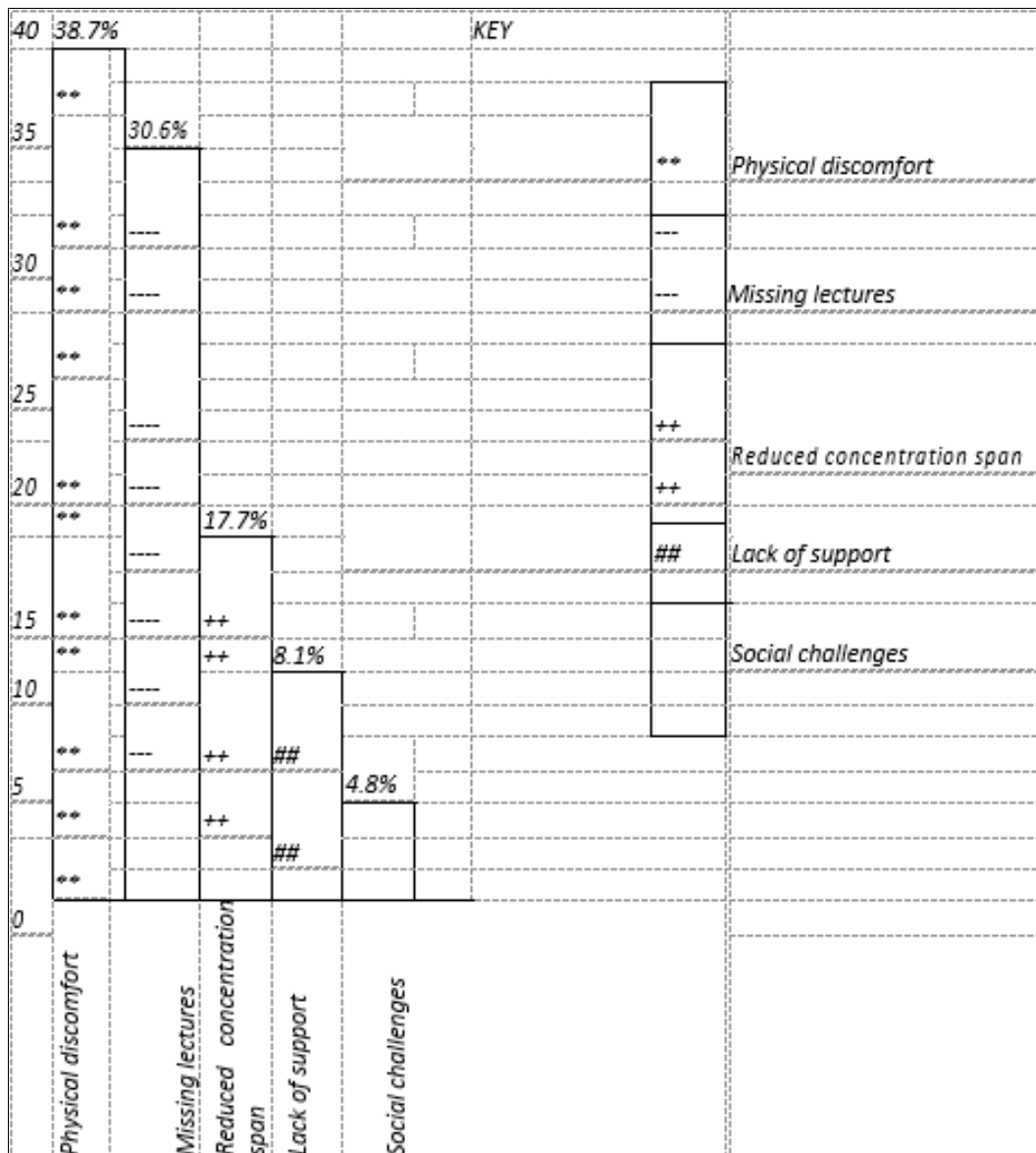


Fig 2: Showing the challenges female students face while pregnant

Result 7

The figure above shows that 24 female students (representing 38.7%) of the respondents had physical

discomfort as a challenge while pregnant, 19 female students (representing 30.6%) of the respondents missed lectures while pregnant, 11 female students (representing

17.7%) of the respondents had reduced concentration span while pregnant, 5 female students (representing 8.1%) of the respondents lacked support during pregnancy, while 3 female students (representing 4.8%) of the respondents had social challenges during pregnancy.

Research Question Three: What are the effects of pregnancy on the academic performance of female students in FUL?

Table 7: Showing female students' affirmation that missing lectures affect their academic performance.

Options	No of Respondents	Percentage
Yes	51	82.3%
No	11	17.7%

Result 8

From the table above, 51 female students (representing 82.3%) of the respondents agreed that missing lectures affects their performance academically, while 11 female students (representing 17.7%) of the respondents do not

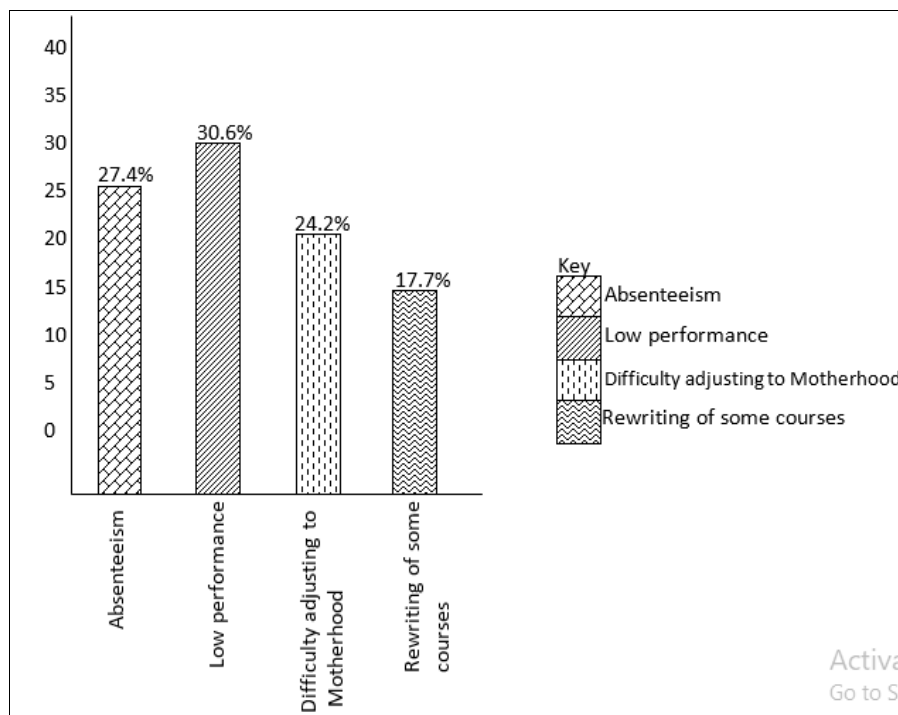


Fig 3: Showing the perceived effects of pregnancy on the academic performance of female students in FUL

Result 10

The figure above shows that 19 female students (representing 30.6%) of the respondents experience low performance, 15 female students (representing 24.2%) of the respondents experience difficulty adjusting to motherhood as a pregnant student while 11 female students (representing 17.7%) of the respondents experience rewriting of some courses due to the fact they were pregnant.

Table 9: Showing rewrites of assignment or examination as a result of pregnancy.

Options	No of Respondent	Percentage
Yes	30	48.4%
No	32	51.6%
Total	62	100

agree that missing lectures affects their performance academically.

Table 8: Showing pregnant female students affirmation that pregnancy affects their studying pattern.

Options	No of Respondent	Percentage
Yes	48	77.4%
No	14	22.6%
Total	62	100

Result 9

The above table shows 48 female students (representing 77.4%) of the respondents agreed that pregnancy affects their studying pattern while 14 female students (representing 22.6%) do not agree that pregnancy affects their studying pattern.

A bar chart, which is a graphical representation was used to display and compare the perceived effects of pregnancy on the academic performance of pregnant female students through rectangular bars, where the length or height of each bar is proportional to the frequency or value of the corresponding category.

Result 11

From the above table, 30 female students (representing 48.4%) of the respondents had to rewrite an assignment or examination as a result of pregnancy while 32 female students (representing 51.6%) do not.

Table 10: Showing the frequency of female students who would take the chance of another pregnancy while in school.

Options	No of Respondent	Percentage
Yes	24	38.7%
No	38	61.3%
Total	62	100

Result 12

From the table above, 24 female students (representing 38.7%) of the respondents indicated to take another chance

of pregnancy in school, while 38 female students (representing 61.3%) of the respondents do not.

4.2 Test of Hypotheses

Hypothesis I

H₀: Pregnancy while schooling has no effect on female students' academic performance at FUL.

H₁: Pregnancy while schooling has effect on female students' academic performance at FUL.

Hypothesis II

H₀: There are no academic challenges faced by female students at FUL due to pregnancy.

H₁: There are academic challenges faced by female students at FUL due to pregnancy.

Result

The Beta (B) value for the unstandardized coefficients of female students' academic performance (AP) is calculated as 11.889, the standard error is 1.280. The Beta value for the standardized coefficients of female students' academic performance (AP) is 0.768. It is significant at t-value (9.288) or p-value (0.000).

Decision: Accept H₀ if t-value is greater than 1.96 or less than p value at 0.05 otherwise, reject H₀ since the significant value is less than p value at 0.05, we therefore reject the null hypothesis and conclude that Pregnancy has effects on the academic performance of female students in FUL

Ajare Emmanuel. The forecast of Pregnancy rate can likewise be acquired per year per forecast. This forecast is very good for policy making and economic development. (ajareoloruntoba@gmail.com and ajare_emmanuel@ahsgs.uum.edu.my).

Conclusion

Based on the result of this study, the researcher asserted that majority of the pregnant female students in Federal University Lokoja are aware of challenges of pregnancy on academics, the students experience challenges such as; physical discomfort, reduced concentration span and missing some lectures which result in low performance, absenteeism, difficulty adjusting to motherhood as a pregnant student and rewriting of some courses (carry over).

Recommendation

Upon analysis of the data and the resulting evidence obtained from the research, the following recommendations were provided:

1. Psychological help should be provided to female students in secondary schools to help them deal with pressures of peers and societal stigmatization.
2. School-based daycare facilities should be provided for soon to be/already teenage mothers.
3. Voluntary Organizations in Nigeria should develop new approaches and programs to educate young people on sex. The voluntary agencies will send their agents to schools and worship center to meet with the teenagers and educate them on changes in their body, use of contraceptives and problems of teenage pregnancy.
4. The society should pick up young school dropouts and encourage them to start their academic pursuit again or

teach them skills to lift them from their dependent status and make them useful.

5. Parents should train their children to fear God in all their dealings with their co-students.
6. Deliberate effort should be made towards counseling and reorientation of teenagers who are victims of unwanted pregnancy to properly re-adjust themselves.
7. Teenagers should be counseled on why they should not allow their friends lifestyle to affect their own attitude towards sexual intercourse.

Future Research

This study is narrowed one of the smallest country in the world known as Singapore. The study is based on only Singapore GDP but in the near future it can be expanded to other stable countries such as Germany and Canada.

Limitation of the Study

This is to obtain deeper meaning of the study, future study can capture the entire Nigerian Universities. Also time series component values related to real world application which are very useful for the next several forecasting stages such as in selecting the appropriate forecasting techniques and also in justification of the forecast values accuracy if modification is needed due to cyclical reason if it is expected to happen in the near future. Other complex simulation conditions can be considered in evaluating BFTSC and GFTSC robustness.

Weakness and Future Research

The issue of how large is large and maximum sample size to be accepted for the study, larger sample size is good for future study. More automated and innovated time series components identifications is a welcome development. Model that can predict pregnancy, epidemic like flood, fire outbreak, earthquake etc should be encouraged. A special technique that can forecast irregular time series component automatically is a good and welcome innovation in forecasting field.

Authors Contributions

All authors, co authors contributed immensely in conducting the study. Analyzing, producing the results and writing the paper. Also on the contents and structuring, flow of the paper and type setting and Proof reading.

Ethics

This is the original manuscript prepared by three authors; there will be no expectation of any ethical problems after the publication. The three authors have read and approved the manuscript.

Acknowledgment

The authors thank the College of Health and Sciences, Federal University, Lokoja, Likewise Universiti Utara Malaysia and National University Singapore for making library resources materials available for this study.

References

1. Bezuidenhort FJ. Teenage pregnancy. Pretoria: Van Schaik, 2006.
2. Bhana D, Morrefl R, Shefer T, Ngabaza S. South Africa teachers responses to teenage pregnancy and teenage

- mothers in school. *Culture, Health and Sexuality*, 2010;12(8):8.
3. Bruggerman PM. *Andragogy and aural rehabilitation*. New York: pergamm, 2005.
 4. Canterbury Christ Church University. *Pregnancy and your studies*, 2010. From <http://www.canterbury.ac.uk> (Retrieved May 7 2010).
 5. Changach JK. *Impact of teenage pregnancy on the education of the girl-child a case study*. *International journal of social science tomorrow*, 2012.
 6. Chigona A, Chetty R. *Girls education in South Africa: special consideration to teen mothers as learners*. *Journal of Education for International Development*, 2007.
 7. Chinweuba A, Iheanacho P, Agbapuonwu N. *Research & statistics in nursing and related professions: Beginners' guide (2nd ed)*. Enugu: EL'DEMAK Press, 2014.
 8. Duncan A. *Teenage parents and their educational attainment*, 2011. Available on <http://txcc.seedl.org/resources>.
 9. Effie DS. *The impact of pregnancy and child care responsibilities on academic performance among school going mothers*, 2011. Retrieved from <http://handle.net>
 10. Grant M, Hallman K. *Pregnancy- related school dropout and school performance in Kwazulu-Natal studies in family planning 39cs*, 2006.
 11. *Hearing Testimony*. NYC DOE *Failing pregnant, parenting students*, 2010. From www.nyclu.org/content/Inye-doe-failing-pregnant-parentin-students (retrieved on August 6, 2010).
 12. Hybels S, Weaver II RL. *Communicating effectively*. London: McGraw Hill, 2004.
 13. Kambanji R. *Girls maternity leave: pros and cons*. *The Sunday mail indepth*. Harare Government printer, August 22-28 2012, P.2, 2010.
 14. Kanku T, Mash R. *Attitudes, perception and understanding among teenagers regarding teenage pregnancy, sexuality and contraception in Taung*. *South Africa family practice*, 2010.
 15. Kerra M, Lee M. *Human capital consequence of teenage bearing in South Africa*. *Population Research bureau*, 2012. www.prb.org
 16. Kramer KL, Lancaster JB. *Teen motherhood in cross-cultural perspective*. *Annals of Human Biology*, 2010.
 17. Lynch KD. *Gender roles and the American academe: A case study of graduate student mothers: Gender and Education*, 2008.
 18. Mamhute R. *The educational challenger of pregnant and nursing adult learner: a case study of morgenter teacher collage*. Stellenbosch: Stellenbosch University, 2011. (Med. Dissertation)
 19. Marshall C, Rossman GB. *Designing qualitative research*. London: sage, 2006.
 20. Marteleto L, Lam D, Ranchod V. *Sexual behaviour, pregnancy and schooling among young people in South Africa*. *Journal of family planning*, 2008.