

**EFFECTS OF HOME BACKGROUND FACTORS ON STUDENTS' ACADEMIC  
ACHIEVEMENT IN AGRICULTURAL SCIENCES IN KATSINA STATE,  
NIGERIA**

**HUSSEIN AHMED ABDULLAHI**

**A THESIS SUBMITTED IN FULFILLMENT OF THE REQUIREMENTS FOR  
THE DEGREE OF DOCTOR OF PHILOSOPHY OF SOKOINE UNIVERSITY OF  
AGRICULTURE. MOROGORO, TANZANIA.**

**2016**

## ABSTRACT

Educational goals and systems around the world differ in many respects. The concerns to meet with the national and Katsina State educational goals regarding the supply of human resources stem from the decreasing number of qualified candidates for admission into the field of agriculture in the higher institutions of learning. The overall objective of this study was to establish the effects of home background factors on students' academic achievement in agricultural sciences in Katsina State, Nigeria. The study was conducted in Katsina State, Nigeria using a cross-sectional research design. A multi-stage sampling technique was used to randomly select 300 respondents from six secondary schools. Both quantitative and qualitative data were collected using structured questionnaire, students' academic scores, focus group discussions and interviews with key informants. Descriptive statistics, cross-tabulations using Cramer's V, multiple and stepwise regressions were performed to achieve the stated specific objectives of the study. Content analysis was used to analyze the qualitative data. The study findings revealed that, overall students' academic achievement was generally good. Age of students was found statistically significant to influence academic achievement. The study results also showed that respondents had different perceptions of their family roles as sources of motivation to succeed in their academic pursuits. Yet, the study findings showed that socio-economic characteristics of parents correlate significantly to students' academic achievement. The study results further showed that there is significant difference in students' academic achievement among family structure composition. The study results on stepwise regression (at  $p < 0.05$ ) revealed that measures of parent visits to schools, provision of resource materials, provision of pocket money, parents' occupation, parents' education and family feeding as well as residential type positively accounted for more of the variation in students' academic achievement. Family type and age category of parents

inversely affect students' academic achievement in the study area. The null hypotheses tested were rejected. It is recommended that parents should feature prominently in future educational reforms. This is intended to increase more support to education.

## DECLARATION

I, Hussein Ahmed Abdullahi, do hereby declare to the Senate of Sokoine University of Agriculture that this dissertation is my own original work done within the period of registration and that it has neither been submitted nor been concurrently submitted in any other institution.

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Hussein Ahmed Abdullahi

(PhD Candidate)

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Date

The above declaration is confirmed by

---

Dr. G.K. Nzalayaimisi

(Supervisor)

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Date

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Prof. M.R.S. Mlozi

(Supervisor)

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Date

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## ACKNOWLEDGEMENTS

All praise is to God almighty. I am grateful to all my student respondents, parents, principals and research assistants, for their cooperation during data collection. I am also indebted to Tertiary Education Trust Fund (TETFUND) Abuja, Nigeria (TETFUND 2012 support) and my employers Ahmadu Bello University (ABU) Zaria, for their sponsorship and the study leave opportunity to accomplish my study.

My profound gratitude goes to my supervisors Dr Gabriel K. Nzalayaimisi and Professor Malongo R.S. Mlozi of the Department of Agricultural Extension and Community Development (DAECD), Sokoine University of Agriculture (SUA) Morogoro, Tanzania for their constructive criticisms, comments and fatherly guidance during supervision, for which I will forever remain grateful. Further, I would like to acknowledge the contributions of the academic staff members of the DAECD, SUA Morogoro Tanzania, particularly for their valuable comments at different forum. I would also like to acknowledge the contribution of the chairman college of agriculture postgraduate committee, SUA Professor D.N. Kimaro.

Special regard goes to my dear family Sabira Mohd D., Fadila Mohd L., Ahmed Hussein, Abdulmalik Hussein, Almustapha Hussein, Rukayya Hussein, Rabiatu Hussein and Fiddausi Mohd particularly standing for me while away most of the times. I am proud of you. My appreciation also goes to my extended family members, friends and relatives for supporting me with prayers. Furthermore, I am indebted to Professor Rabiun Nasir of Physics Department, ABU Zaria for his support at all times. Regards also goes to Dr M.A. Damisa, Dr I.M. Haruna, Lawal Abubakar, Joshua Fachano, Matins Nwanosike, Huzaifa

A. Karfi, Baba S. Wudil, M.A. Garko, Mjema Mweta and Girmachew Seraw for their encouragement. I sincerely appreciate you all.

**DEDICATION**

This research work is dedicated to my children.



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**LIST OF ABBREVIATIONS**

ABU	Ahmadu Bello University
ANOVA	Analysis of Variance
DAECD	Department of Agricultural Extension and Community Development
EBN	Education Bank of Nigeria
FME	Federal Ministry of Education
FGDs	Focus Group Discussions
GCC	Government Commercial College
GDSS	Government Day Secondary School
GGSSS	Government Girls Science Secondary School
GGTCC	Government Girls Technical and Commercial College
GSSS	Government Science Secondary School
GTC	Government Technical College
JSS	Junior Secondary School
KTSMOE	Katsina State Ministry of Education
MDGs	Millennium Development Goals
NBS	National Bureau of Statistics
NECO	National Examinations Council
NGOs	Non-Governmental Organizations
NPE	National Policy on Education
OECD	Organization for Economic Cooperation and Development
OEED	Office of Employment Equity and Diversity
PTA	Parent Teachers Association
SPSS	Statistical Package for Social Sciences
SSS	Senior Secondary School
SSCE	Senior Secondary Certificate Examination
STEB	Science and Technical Education Board

SUA	Sokoine University of Agriculture
SURE-P	Subsidy Reinvestment Programme
UBE	Universal Basic Education
UNESCO	United Nations Education, Scientific and Cultural Organization
UNICEF	United Nations Children Education Fund
UPE	Universal Primary Education
WAEC	West African Examinations Council

## **CHAPTER ONE**

### **1.0 INTRODUCTION**

#### **1.1 Background Information**

Education is the process which prepares an individual to develop and actualize his/her potentials and capacities to live a successful life. As a process, education begins right from birth and continues throughout one's life. Rahuman and Uddin (2009) stated that education is one of the basic needs and is fundamental for growth and development of both developed and developing countries. Development of any nation or community depends largely on the quality of education offered. Akanle (2007) stated that the basis for any development must commence with the development of human resources through education. Achieving a high level of educational attainment requires an understanding that education is a primary instrument for social, economic and political pursuits. United Nations Education Scientific and Cultural Organization (UNESCO) (2003) added that through education, all marginalized individuals can lift themselves out of all depressions to fully contribute to issues of national development.

The Nigerian government has realized the importance of education as vital and a means for human and national development. To realize the goal of education, the federal government of Nigeria formulated the National Policy on Education (NPE) which guaranteed the right of education for all citizens (Federal Ministry of Education (FME), 2006). For example, the objectives of secondary school education in the policy include preparation for vocational relevance, useful living and preparation for higher education (FME, 2006). Further, in the same document the objectives of agricultural education for the secondary schools were stated as to provide background for further studies and career choice in various agricultural disciplines, sciences, engineering and technology (FME,

2006). It is worth noting that agriculture is vital for economic development and food self sufficiency, poverty alleviation and environmental protection which requires a strong agricultural training. Sundstol (2004) in the same vein stressed that quality agricultural training, knowledge, and competence are required by considering the place of agriculture in the prosperity of the less developed economies like that of Nigeria. It is for this reason in Nigeria for instance, agricultural sciences has been important school subject for preparing individuals to take agriculture as a profession and to develop the manpower needs of the sector. Consequently, the future success of the agricultural sector will depend on the quality of education given to students and which lies on the abilities of students in their academic achievement and their successful completion of the secondary school education where agricultural training begins in Nigeria (Alaka, 2011; Alam and Farid, 2011).

The students' academic achievement comprised of a comprehensive continuous assessment of students (FME, 2006). It is used to determine the actual performances and traits validly and reliably measured through educational training (Kpolovie, 2002; Ololube, 2008). In Nigeria students' success at secondary school level depends on their academic achievement after taking the organized national examinations conducted by West African Examinations Council (WAEC) and National Examinations Council (NECO). For these reasons, the future success of the educational system is hinged on students' academic achievement at secondary schools level (Alam and Farid, 2011). This is particularly so because of the current processes of globalization and technological revolution and emphasis placed on the need for increased high literacy level which create greater demands for higher education provided in universities and colleges. Students in secondary schools are obviously the potential assets of these educational institutions. And only those with adequate academic skills and knowledge can score high enough to enter

these high institutions. According to Akomolafe (2011) quality education in higher institutions depends upon the potential academic skills and knowledge of secondary school students after their completion. Hence, stakeholders in education consider the students' academic achievement at this level an important goal to produce the best quality candidates for the higher institutions and national development. In view of these, the social, political, technological, and economic developments of Nigeria is indirectly linked and rely upon with the students' academic achievement at secondary school level, the foundation of which begins right from home.

It is however acknowledged that many factors affect students' performances in schools. Study findings show that home is the first place of contact and initial training centre for children (Ajila and Olutola, 2007). Similarly, Tella and Tella (2003) reported that students' home background greatly influences their schooling process. This is because parents play an invaluable role in laying foundation for their children's learning and discipline. Adesoji (2008) and Umanah and Wonu (2010) on the other hand observed that students' home background is a major predictor of their academic achievement whether positive or negative. Therefore, the students' home remain an important indicator for students' academic motives (Ajila and Olutola, 2007).

Ever since the introduction of Universal Primary Education (UPE) in 1977 by the federal government of Nigeria and Universal Basic Education (UBE) which was formally launched in 1999, secondary schools witnessed increase in students' enrollment due to Nigeria's rapid population growth (Salisu, 2001; Atadoga, 2007; Adamu, 2007; Dalhat, 2007). Further evidence showed that this increase in school enrollment figures has brought together children of different background which led to a wide range of parents' attitudes and their level of involvement in education of their children (FME, 2006). The Katsina

State Ministry of Education (KTSMOE) document shows that, the gains of massive investment made in the education sector by the government are evident in the school enrollment figures both at primary and secondary school levels (KTSMOE, 2013). This increase in students' number brings together students from different home background which creates different experiences among them. Cotton and Wikelund (2005) opined that parents' attitudes and involvement in education of their children affect their achievement levels. While, according to Adesoji (2008) and Aremu and Oluwale (2001) different approaches of parents to children's learning process has been the major source of the academic disparity experienced in schools. Office of Employment, Equity and Diversity (OEED)/UNESCO (2003) further added that students' social class were identified as the main reasons for these differences in attitudes and commitment of the parents to education which always affect the achievement scope of their children. To ensure that the results obtained in this study were due to home background factors, special schools in Katsina State controlled by Science and Technical Education Board (STEB) were chosen based on similarities in terms of students being boarders, provision of instructional materials, qualified teachers, access to practical agriculture experiences, and other infrastructure for learning.

Although, the school is responsible for the experiences that make up the individual's life during school period, Eweniyi (2005) observed that different students' home background factors play more prominent role in children's academic achievement in schools. OEED/UNESCO (2003) further stated that among such factors are parents' education and cultural traditions, family social relation and involvement in education. OEED/UNESCO (2003) again mentioned that instructional design, government political will and commitment cannot foreclose students' home background to produce a better learning and students' academic achievement. Moreover, the home compliments the government and

school efforts by providing favourable environment to students both at home and schools (McNeal, 2001). Generally, relationship between home variables and children's academic achievement can be attributed to differences in family statuses, variations in family economic resources, and quality of parent-child interactions (Libiensi and Gutierrez, 2008).

Earlier reports on students' home background show that various demographic, social, economic and educational factors of students' families have continued to be of great importance to researchers (Beaton and O'Dwyer, 2002; Kellaghan and Madaus, 2002; Kifer, 2002). For instance, Israel *et al.* (2001) found that parents' socio-economic status is correlated with children's educational achievement. While, Jensen and Seltzer (2000) stated that factors such as parents' role and social environment had significant influence on their children's academic achievements. Many theories affirmed that parents' motivation greatly influence the academic motives of their children (Lave and Wenger, 1991; Bandura, 1997; Lave and Wenger, 2005). However, students' home background factors are not fixed, and therefore change with time, hence, their effects on students' academic achievement cannot be undermined (Libiensi and Gutierrez, 2008). Further research would not only explore additional factors but could also provide existing situations of relationship between determinants of students' home background factors and their academic achievement (Campbell *et al.*, 2008; Malibiche, 2011).

Study findings show that students' academic achievement can be predicted based on the home background variables that subsist in students' lives. Such studies point out that the effect of home factors on students' academic achievement may change as related to educational stage/level, social policies, and time (Organization for Economic Cooperation and Development, (OECD) 2005). Theories further affirmed the nature of these

interrelationships between family background characteristics and its influences. In the development of a model of human development, for instance, Hunt (2007) and Blevins (2009) propose that the effectiveness of a home background influence for academic success is determined to a large extent by a students' family background such as education and occupation. They view that parent-child interactions translate into a particular academic achievement level. In addition, they assert that academic success is achieved only if family background resources can be accessed to make the most of the association between family influences and students' academic outcomes. Kerr (2000) observed that it is the nature of a family that overwhelmingly affects their member's thoughts, feelings, and actions. Hence, relationships between family influences and students' academic achievement need to take into account the potentially restraining or increasing opportunities provided by children's family backgrounds. The implication of these theories to the current study lies on the fact that students' academic achievement is interceded by their upbringing which conceivably is influenced by their family backgrounds. It is against this background that in determining family variables that affect students' academic achievement at secondary school level in Katsina State, 24 indicator variables were selected as the home background variables in the educational studies as often cited in the conceptual and empirical literature who reported mixed supports and effects on students' academic achievement (Kose, 2007).

The home background factors envisaged to affect students' academic achievement in agricultural sciences in Katsina State, Nigeria are categorized as: socio-economic factors (parents' educational level, parents' occupation, family feeding, health care, perceived religious belief and family residence, which include; place of residence, area of residence, and residential type), family structure (family type, family size, dependency ratio, sibling order and age category of parents), predisposition of parents to education (provision of



resource materials, parent visit to school, provision of pocket money, cosmopolitanism and extra lesson and social amenities) and family roles (parental expectation, parental aspirations, family obligations, family pleasing and aversive influence). Thus, in Katsina State if parents' commitment and attitudes such as, cultural and norm practices, child rearing, their roles and involvement in education are positive, there will be a positive motivation for students to learn and well in schools. Hence, the theoretical position taken here is that educational practice should be studied and understood within its political, socio-economic and socio-cultural contexts and that research should include outside school perspectives like the home environment holding school factors as constant. This research examines students' academic achievement within learning contexts of selected special schools with common characteristics and the effects hypothesized to have been influenced from home by analyzing the empirical data on the nature of interactions among diverse children's parent characteristics.

## **1.2 Problem Statement**

Educational goals and systems around the world differ in many respects (Ludger and West, 2002). But the overall importance of education in general and agricultural sciences in particular to man cannot be over-emphasized. In most countries including Nigeria, with agriculture being a vital tool for economic development and food self sufficiency, poverty alleviation and environmental protection, requires a strong agricultural training from the background (which is the secondary school level) for the acquisition of effective and sustainable agricultural skills. Sundstol (2004) stressed that quality agricultural training, knowledge, and competence are required considering the place of agriculture in the prosperity of the national economy. In line with the above, in Nigeria for instance, agricultural sciences have been important school subject for preparing individuals to take agriculture as a profession and to develop the manpower needs of the sector.

Several factors have contributed to the concern regarding meeting the talent pool in the agricultural sector in many countries. Like many other countries, Nigeria and indeed Katsina State being an agrarian society, is increasingly becoming dependent on the ability to develop human resources through agricultural training capable of dealing with current economic, scientific, technological and environmental pressures (Ibrahim and Bin Jamil, 2012). The concerns to meet these national and Katsina State goals regarding the supply of human resources stem from the decreasing number of qualified candidates for admission into the field of agriculture and agriculture related fields in the Nigerian high institutions of learning (WAEC, 2012). Though students' academic achievements in the national examinations have improved in 2013 in the sciences, particularly agricultural sciences, the recent results released both by WAEC and NECO show that many candidates failed to meet the entry requirements for agricultural science courses (WAEC, 2014; NECO, 2014). This is particularly worrisome given the expansion in the number of Nigerian universities in recent times regarding the quality of academic potentials of our secondary school students who are the potential target of these institutions. This gap might be associated with different factors particularly hinged on students' motivating factors broadly conceived (Tella and Tella, 2003; Akomolafe, 2011; WAEC, 2014). To this end, the understanding of students' academic achievement without having an idea about factors underlying the trends in their academic performances wastes time and resources of schools, parents, and teachers.

While standards of attainment in academic subjects have remained a subject of concern and debate among stakeholders, literature on students' academic achievement showed that differences in age, sex, social status, such as family income, parents' education, self motivation, and the type of school one attends are important factors in students' learning (Akanle, 2007; Adesoji, 2008; Hedjazi and Omidi, 2008; Bratti and Staffolani, 2013;

Osonwa *et al.*, 2013). From these postulations, the major reason creating concern among stakeholders stem from the increasing gap in students social composition (Osonwa *et al.*, 2013). For instance, the expansion in students' enrollment in secondary schools in Katsina State may increase the different relationship between parents and students from the various socio-economic statuses. Thus, some of the students may have to contend with social and economic challenges as opposed to others (Bratti and Staffolani, 2008). Consequently, since the students come from a wide range of social backgrounds, these give them different life experiences, different educational opportunities, expectations, needs and varied academic potential which might have effect on their academic achievement (Telli *et al.*, 2009). Therefore, the need to uncover the effects of students' home background factors on their academic achievements in agricultural sciences should not be undermined.

In view of the above, parents' attitudes, traditions and involvement in education are among the important family factors that have implications on students' academic achievement (Osonwa *et al.*, 2013; Stull, 2013). For instance, students whose parents' attitude towards education is positive are assumed to achieve better in their examinations compared to students whose parents are pessimistic towards education. Besides, one of the major problems facing Nigerian youth today is unemployment, and this can be attributed to unfavorable disposition to agriculture as a career. Hence, attention should be focused on the development of agricultural knowledge and training to increase awareness particularly for youth who are to engage in farming and career agricultural officers for improved livelihoods. Otherwise the shortage of skilled manpower, short fall in agricultural production and unemployment will remain the greatest challenge. Still, there remain concerns to actualize these goals of education considering the earlier noted inconsistency in academic achievement of candidates at the organized national examinations in

agricultural sciences and related sciences (WAEC, 2012; NECO, 2012; WAEC, 2013; NECO, 2013; WAEC, 2014; NECO, 2014).

Similarly, the under representation of secondary school agricultural sciences in most of the researches conducted provide a basis for concern (Oribhabor and Okodugha, 2010). It is fundamental from the foregoing to argue that students' academic achievement in agricultural sciences is influenced by their home background factors. Unfortunately, there is no clear enough evidence of such information on secondary schools in Katsina State particularly when the current information on students' academic achievement is disaggregated into secondary schools, tertiary institutions and even among science subjects offered at secondary school level.

Unfortunately, the ability of the previous researches to describe the effects of home background factors on students' academic achievement did not uncover the complex nature of students in the boarding schools in Katsina State. More particularly, Osonwa *et al.* (2013) argue that effect of students' home background on their academic achievement depends on complex context and specific family socio-economic, cultural norms, values and location to location as they can also go with time, thus, it is difficult to generalize. After all, in recent years, there has been recognition of different kind of parental involvement in various schooling processes, perhaps, due to the rapid expansion of public and private secondary schools in the country which compliment government effort. Therefore, this study seeks to uncover the determinants of students' academic achievement in agricultural sciences in Katsina State and which has remained to be clarified. Hence, the aim is to establish information for better understanding and decision making for improving secondary school students' academic achievement not only in agricultural sciences but

also in other subject areas as well as other areas with similar conditions to that of Katsina State.

### **1.3 Justification of the Study**

Education for all as contained in the NPE depends on the conducive learning environment of the learner. This is because failure rate in education is costly to all stakeholders in education. It increases the cost of training students as well as reducing admission opportunities for secondary school graduates seeking higher education. There has been scanty information which explicitly documents the determinants of students' academic achievement in agricultural sciences (Oribhabor and Okodugha, 2010). The findings from this study provide existing positions of the current students' home background factors with the most important effect on their academic achievement in Katsina State. With this information, government and parents can know more of the existing factors which promote students' academic achievement and with particular regard to informing the development of policy intended to close disparity in students' academic achievement, taking into consideration the potential contribution of parents to education of their children for national development.

The study provides data that create a functional school services such as creating a functional recreational, library and guidance services that take care of the disparity emanating from the differences in home affinity which are currently lacking in secondary schools in Katsina state. This again informs policy makers on the need to upgrade and equip the existing facilities and development of new ones for efficient school and national guidance and career services. The implication of which will go a long way to make proper students' placement, develop clientele interaction and referral services aimed at improving students' academic achievement.

Similarly, the information from the study findings will awaken the consciousness of school administrators and agricultural science teachers to understand more the facts about students' background and upbringing. Thereby schools have first hand information that students will manifest different characters, behaviours, and opportunities, the knowledge of which will guide the school administrators and teachers to pay more attention to students' individual differences particularly for those who require special help to motivate them.

FME (2004), Parri (2006) and DoE (2008) reported that agricultural education has a long history in education including Nigeria. Agricultural education remains one of the most important subjects in secondary school programmes. Apart from classroom and laboratory instructions, agricultural sciences engage students in clubs as well as students-teachers interactions in and outside the school agricultural activities following the curriculum. Similarly, farm businesses dominated rural life and sustained rural communities as well as providing urban jobs. Currently technological evolution has been on the increase reflecting various agricultural occupations and professional careers. Thus, many industries now serve agriculture by producing, processing, marketing, and preparing food and fibre products for consumers (Parri, 2006; DoE, 2008). Consequently, the study findings from this study which has explored the potentials of students in agriculture can therefore serve as a means for promoting functional secondary school agriculture programme that will attract more teeming number of youth into agriculture and related businesses to reduce the current level of unemployment not only in Katsina State but Nigeria at large.

The study results from the research provide groundwork to assist international donor agencies, inter-governmental collaborative partners, Non-Governmental Organizations (NGOs) and private institutions involved in the funding of education not only in Katsina

state but Nigeria and elsewhere with similar conditions for more investment in education to produce quality human capital. Moreover, this will go a long way in enhancing the services of existing private partnership in education through, public enlightenment campaign, provision of infrastructure, scholarship, social stimuli, provision of educational materials, research and organized workshops and seminars. The study findings further contribute new knowledge to the existing theories of teaching and learning situations in education which could provide a framework for planning improvements at home level and in school systems.

#### **1.4 Objectives**

##### **1.4.1 Overall objective**

The overall objective of the study was to establish the effects of home background factors on students' academic achievement in Katsina State, Nigeria with a view to informing policies that will improve family welfare and students' academic achievement.

##### **1.4.2 Specific objectives**

The specific objectives of the study were to:

1. Assess the current students' academic achievement in the study area;
2. Examine the students' perceptions of family roles influencing their academic achievement;
3. Describe the family socio-economic factors associated with students' academic achievement;
4. Compare family structure composition and students' academic achievement;
5. Identify the effects of parent predisposition to education on students' academic achievement; and;

6. Assess the determinants of home background factors with strong effects on students' academic achievement.

### **1.5 Research Hypotheses**

The following null hypotheses (Ho) were tested in the study:

Ho<sub>1</sub> There is no significant influence of family roles on students' academic achievement.

Ho<sub>2</sub> Students' home background factors do not have significant effect on their academic achievement.

### **1.6 Theoretical Framework for the Study**

This research is grounded on the premise of social learning-cum-humanistic theories.

#### **1.6.1 Social Learning-cum-Humanistic Theory**

Miller and Dollard (1941) proposed the theory of social learning. According to these authors children learn through positive and negative reinforcement and act in certain ways in response to the reinforcement. Bandura and Walters (1963) later broadened the concept of social learning theory with the principles of observational learning and vicarious reinforcement. Bandura (1977) contributes by introducing the social learning theory in which the author opined that children learn more within a social and environmental context. Lave and Wenger (1991) and Lave and Wenger (2005) later proposed and developed an informal interactional learning through social interaction with the family to achieve quality education rather than by planned process of cognitive transmission alone. However, an important factor of Bandura's social learning theory is the emphasis on reciprocal determinism. This concept of reciprocal determinism emphasized that an individual's behaviour is influenced by the environment and people around him/her



(Bandura, 1996). The theory further proposed that modeling process of an individual's behaviour involves four major factors. These factors focused on attention, retention, reproduction and motivation. However the author emphasized that there must be an incentive or a motivating factor driving the individual's reproduction of the behaviour (academic achievement) during the interaction and said even if all other factors are present, the person will not engage in the behaviour without motivation.

Bandura (1997), Song and Hattie (2004) and Lave and Wenger (2005) build on the earlier postulation of Bandura (1996) by introducing family influence on motivating behavioral change (academic achievement). They stated that motivation for students from the home perspectives encourage and facilitate good learning environment and students' educational outcomes. Above all, the students' homes provide a network of physical, social and economic incentives which are all embedded in the principle of motivation which targets their learning. Song and Hattie (2004) opined that, students' families create different learning environment on the basis of their standing backgrounds and this creates academic disparities among students. This view is consistent with the social learning motivation theory of Schunk *et al.* (2008) who assert that parents can promote the academic achievement behaviour of their children through peculiar incentives and positive learning environment for which must not be ignored.

Rotter (1954) and Rutter (2002) earlier in their contribution to social learning perspective stressed the effect of behaviour pattern on the motivation of people (students) to engage in a specific behaviour (learning). People wish to avoid negative consequences by desiring positive results or effects. They expect a positive outcome from behaviour, and then he/she more likely engaged in that behaviour. Consequently, the attitude and involvement of parents in education of their children in this regard such as providing the basic educational and social needs of their children are more likely to motivate their children's learning

faculty. Skinner (1948) corroborates that “the bad do bad because the bad is rewarded. The good do good because the good is rewarded”. He emphasized that it is a matter of having good or bad luck with reinforcement from parents and the environment. Then it is expected that right influence leads to good behaviour (academic achievement) and vice versa.

Social learning theory further proclaimed that behaviour of students is influenced by their environment including home which directs their psychological tendency in continuous process (Vygotsky, 1978; Lave, 1988; Crosnoe *et al.*, 2002; Crosnoe *et al.*, 2004; Gardner, 2004). Lave (1988), Lave and Wenger (1991) and Wenger (2007) emphasized that these social interactions and collaborations are essential components of the situated learning where learners’ emotions are directed and reinforced to acquire and retain a behaviour (academic achievement) throughout the entire learning process and periods. Children being parts of this social process can therefore be shaped and motivated by their families, thereby giving meaning to their learning and consequently their academic motive for enhancing academic achievement level. Pryor and Rodgers (2001) stated that in every family there is an underlying infrastructure of individual relationships and other sub-system of relationships, comprising members of the family. Consequently, these relationships according to Schoppe *et al.* (2001) are related to the overarching qualities of each family as a whole, which has its own unique and stable interaction pattern. The wellbeing and educational potentials of the children are conceived as dependent upon the functioning of the characteristic elements of each of the entire family system to meet the desired needs of their family members who will later contribute to the development of the society (McKeown and Sweeny, 2001).

Rogers (1969), Maslow (1969) and Greening (2006) contributing to humanistic theory assert that everyone has the potential to achieve and make contribution to society if their needs are fulfilled. All the postulations on humanistic perspectives regard personal growth and fulfillment of which lies education in life as a basic human motive, in what (Maslow, 1969; Maslow, 2000) called self-actualization. All the theories further described different ways of how self-actualization can be achieved. Maslow (1969) for instance believe that fulfilling the needs of persons among which lies education and positive academic achievement in the correct order would make such individuals to become self-actualized and fully able persons. So only after the basic physiological needs such as food, shelter, warm/pleasing are met can individuals move on to the next stages such as the need to feel secured, to be loved, accepted and educated. Rogers (1969) felt that, in addition to Maslow's hierarchical needs, in order for a person to develop fully (positive academic achievement) they need to be in an environment which provides them with genuineness, acceptance and empathy of opportunities. To harvest human motivation such as creativity and human potentials in education, Clay (2002) stated that a hierarchy of individual's needs; human choices, capacity for self-direction, individual's feelings and understanding of his or her own development should be targeted.

Bugental (1964) and Greening (2006) summarized the above perspectives of humanistic theory by five core postulates:

- (a). Human beings, as human, supersede the sum of their parts. They cannot be reduced to components.
- (b). Human beings have their existence in a uniquely human context, as well as in a cosmic ecology.

(c). Human beings are aware and are aware of being aware i.e. they are conscious.

Human consciousness always includes an awareness of oneself in the context of other people.

(d). Human beings have some choice and, with that, responsibility follows.

(e). Human beings are intentional, aim at goals, are aware that they cause future events, and seek meaning, value, and creativity.

Humanistic perspective from these five postulations adopts a holistic approach to human existence and pays special attention to harvest (motivation) such phenomena as creativity and human potentials in education, which according to Clay (2002), are fundamental aspects of human and must therefore be targeted to influence learning outcomes in schools.

Both the social learning and humanistic perspectives are interrelated in all aspects. These theoretical concepts can be linked to Merton (1968) who proposed the self-fulfilling prophecy and in later stage the concept was applied in education (Rosenthal and Bandura, 1978; Miller, 2006) which forms the basic features of the social learning-cum-humanistic theory. The proposition was that when parents expected their children to do well they interacted with them in ways that led to their expectations being fulfilled. Since then research has consistently explored parents' characteristics, expectations, aspirations and involvement among other parental factors as significant for students' outcomes but which have later been largely ignored by many researchers. It is in view of this reason that with reference to this study for example, while some parents guide their children properly, they install self-expectations and high academic motives in them. Yet, others might lag behind in doing so which could negatively influence positive academic motivation and this

provides a theoretical evidence for empirical findings to be undertaken (Benner and Mistry, 2007).

On the basis of the social learning-cum-humanistic theoretical orientation, it is envisaged that students' self-determination could be based on the interactions with their parents. Part of these interactions is development of individual's strong belief in their ability to achieve a particular goal will more likely influence their desire to design steps towards achieving a given goal. This self-belief is a powerful motivator for students' understanding of their parents' roles and commitment regarding schooling (Tavani and Losh, 2003; Urdan and Schoenfelder, 2007; Rubie-Davies, 2007). It is therefore unclear which of the home background variables most determine students' academic achievement motives in a school and learning settings in Katsina State. This study is therefore grounded on the premise of social learning-cum-humanistic theory based on the assumption that students are predisposed to the social relation of schooling under the influence of their families alluding to economic, environmental and social interference of such interaction on their academic achievement. Hence, the theory or model of students' home background factors can be interpreted that families target their children's needs to influence their productive forces and capabilities for self-actualization/self-fulfillment (positive academic achievement in educational settings).

On the propositions of social learning-cum-humanistic theory, this study research explores the determinants of students' academic achievement on the basis of their family influence through interaction with; socio-economic factors, family residence inclusive, family structure, predisposition of parents to education, and students' perceptions of their family roles. According to Vygotsky (1978), Gardner (2004) and Schunk *et al.* (2008) children who grow and learn into the social, economic and intellectual life of their families enjoy

some level of motivation which influences their learning outcomes behaviour. These interactions which occur at home and school are in the form of maintaining warm and supportive family, showing interest in children's progress both at home and school, discussing the value of good education and possible career options, setting genuine and realistic expectations and aspirations, conducive home environment, financial incentives, affection, provision of resource materials, and making visits to schools in order to actualize self-fulfillment intended to achieve positive academic achievement. Therefore, the family as a human and social unit and its influence on the social interaction of children's learning is here referenced.

In conclusion, these theoretical orientations were conceived to relate the study of educational process with the Nigerian family socio-economic, political, and cultural environment as human contexts in order to achieve the goal of education. Hence, the approach was holistic both quantitative and qualitative to examine the students' home background factors as independent variables that affect their academic achievement. These orientations further involve analyzing the empirical data collected based on the nature of everyday interactions among the diverse children characteristics of their parents. Then the educational implications from the perspectives is intended to lend credence to realistic family education and welfare, quality teaching, improved school services, social and emotional competencies of students in order to provide a foundation for more humane public policies and good family culture in our society to promote academic excellence.

### **1.7 Conceptual Framework for the Study**

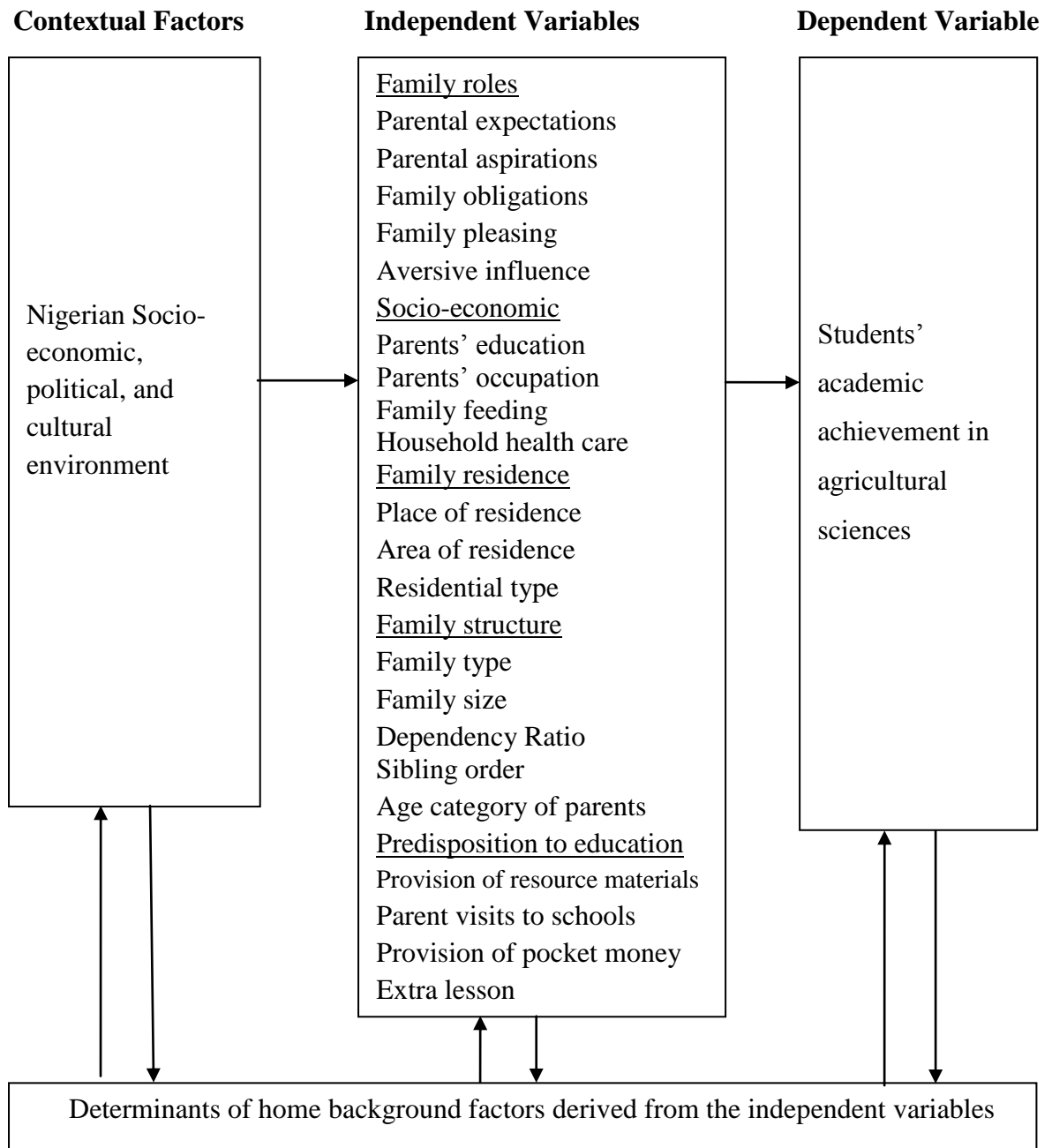
A conceptual framework or model is simply an attempt to classify the major elements of an entity or phenomenon with regards to their functions and inter-relationship in order to observe more closely causal relationship. Asika (2003) said that these relationships and

functions can be represented schematically or mathematically. To study the effect of students' home background factors on their academic achievement, variables associated with students' academic achievement were identified as independent variables at home level as shown in Fig. I. In relation to this model, literature was reviewed from a wide theoretical perspective on the basis of the elements at national and home levels as contained in the model with the purpose of examining their effects on students' academic achievement. This conceptual framework was first developed based on the contextual factors of the Nigerian society. The contextual factors were; the Nigerian socio-economic, political, and cultural environment factors. These factors as associated with the Nigerian families from which are derived the independent variables. The independent variables provide the framework for collecting and analyzing the data to establish the results that fulfilled the objectives of the study. It further allows for drawing implications on the effects of students' home background factors on their academic achievement for public policy and positive family culture to promote academic excellence not only in Katsina State but other areas with similar conditions.

The conceptual framework shown in Fig. 1 as grounded on the premise of the theoretical framework of this study (social learning-cum-humanistic theory) claim that there is a continuous recognition of the dynamics of the relationships between family factors and student's educational process and outcome (Crosnoe *et al.*, 2002; Crosnoe *et al.*, 2004). Conger and Dogan (2007) and Conger and Donnellan (2007) further emphasized that family background factors foster the educational development of children. For instance, this conceptual framework specifically proposes that students' home background factors affect their academic achievement both directly and indirectly through family investment on education and interpersonal relationships with the Nigeria's socio-economic, political, and cultural environment.

Reference to these theories, the model advanced that support for learners are essential since they are passive and responding to stimuli. Hence, if learners will repeat a desired behavior such as positive academic achievement, there is positive reinforcement which follows the behavior. Then negative reinforcement leads to negative academic achievement or will make learners cease from repeating a positive behavior or positive academic achievement (Crosnoe *et al.*, 2002; Crosnoe *et al.*, 2004; Bahlkani, 2009). This conceptual framework as further demonstrated in Fig. I proposed the independent variables such as parents' education, parents' occupation, family feeding, household health care, perceived religious involvement and place of residence, area of residence and residential type. Others are family type, family size, dependency ratio, sibling order, and age category of parents, provision of resource materials, parent visits to schools, provision of pocket money, Cosmopolitaness, extra lessons and social amenities. Other independent variables include family roles such as parental expectations; parental aspirations, family obligations, family pleasing, and aversive influence affect and determine students' academic achievement in agricultural sciences. In turn these factors are influenced by the Nigerian socio-economic, political, and cultural environment. This is however not to say that the cycle in Fig. I is a fixed stage as students' academic achievement is a continuous process as much as they remain students. Then the whole process will repeat as long as there is conducive environment for learning. Otherwise if the environment is not conducive, students will be put in a fix or stress and then there may be drop in academic achievement. This study examined whether home background factors have effect on students' academic achievement in agricultural sciences. Thus, the framework is specified as shown in Fig. 1.





**Figure 1: A research model of effects of home background factors on students' academic achievement in agricultural sciences.**

## **CHAPTER TWO**

### **2.0 LITERATURE REVIEW**

#### **2.1 Overview**

This Chapter reviewed literature from the findings of other studies in the subject matter in order to provide theoretical framework which guides the conceptualization of the study model on which analysis for the present study is based. The review orientation focuses on: (a) Trends in students' academic achievement, (b) Students' perceptions of family roles and academic achievement, (c) Parents' socio-economic factors associated with students' academic achievement, (d) Family residence and students' academic achievement, (e) Family structure and students' academic achievement, (f) Parental predisposition to education and students' academic achievement, (g) Determinants of home background factors on students' academic achievement, (h) Summary. The literature has reviewed a wider perspective of home background factors influencing students' academic achievement. The reflection drawn in this review provides the basis for assessing specifically factors regarding the study objectives. In the context of the present study the purpose of which was to assess the effects of home background factors on students' academic achievement in agricultural sciences in Katsina State, Nigeria as conceptualized in Fig. 1 and outlined in the theoretical orientation.

#### **2.2 Trends in Students' Academic Achievement**

The desire of every country to develop human capital is hinged on education. Globally, education is a useful instrument for political, social, economic, scientific and technological developments. Among the levels of education in Nigeria is secondary school education which is the pivot of the entire educational system. Student's performance at this level become a great concern to stakeholders in education and a subject of discussions and

debate among scholars (Alaka, 2011). Xinyi (2006) and Aremu and Oluwale (2001) while stressing the importance of secondary school students' performance were of the view that it almost appears that students' academic achievement at this level is the major criterion by which the effectiveness and success of any educational institution or system could be judged using some standard of excellence. It is noted that academic achievement is a key mechanism which define students' talents, abilities and competencies which are an important part of developing career aspirations right at secondary school level for which parents are assume to give their best (Lent *et al.*, 2000). Reports have it that some students find it difficult to accomplish these goals due to peculiar differences.

The recurrent performances of secondary school students in the Senior School Certificate Examination (SSCE) conducted by WAEC and NECO in Nigeria have not been an encouraging one over a period of time. For instance, in the year 2008 only few candidates that sat for senior secondary school examinations passed (Uwadiae, 2008). Similarly, the results released in 2009 and 2010 had indicated that merely more than half of the candidates who sat for the examinations failed (WAEC, 2012; NECO, 2012). Subsequent results though did show some improvement in candidates' performances including agricultural sciences but still much remain to be desired (WAEC, 2013; NECO, 2013). In recent results released by WAEC further show some marginal decline in students' performance (WAEC, 2014). He reported that only 31.28% of the students that sat for 2014 in WACE obtained five credits. Similarly, the performance of students from Katsina State in public examinations according to the State Governor in 2015 has placed the performance of students below 10% cent. He said, this include final secondary school examinations conducted by WAEC and NECO (Nigerian Tribune, 2015). These reports are worrisome because SSCE serves as an end of course evaluation for all secondary school graduates and the students are expected to be the potential university or college

students. This group of students can meaningfully contribute their quota for national development only by doing well in their academic achievement. Thus, whatever hinders good academic achievement should be investigated to achieve the gains of teaching and learning.

Differences in students' academic achievements have been reported by several authors. For instance, study findings by (Chambers and Schreiber, 2004; Woodfield and Earl-Novell, 2006; Sheard, 2009) show that female students outperform their male counterparts and show more commitment and control over challenges they faces during their study. These empirical facts reveal that male have not dominated their female counterparts in academic achievement in agricultural sciences. Other researches indicate that male perform better than female in certain settings (Haist *et al.*, 2000). Sirin (2005) mentioned that students' academic achievements vary due to peculiar differences. Young and Fisler (2000) found that male students score better than female students. However, they noted that male students generally come from households of parents with high socioeconomic status, high educational and income levels, while, female students were found to be more diverse and mostly come from low income class. This situation as described by (Tiwari and Bansal, 2004; Stull, 2013) who mentioned that a child with high academic achievement is well motivated by his/her family while low achievers are deprived of such motivation due to poor parenting might be the reason for this discrepancies in students performances.

Students have been severally distracted by the various spill-over effects of social and economic crises particularly in Nigeria with propensity on their performances (Osonwa *et al.*, 2013). These major crises affect students' attitudes to education there by creating unfavourable conditions to motivate their learning (Daily Trust 20 June, 2013; Osonwa *et*

*al.*, 2013). It is irritating therefore that poor academic achievement at secondary school level may result in higher proportion of school dropouts, behavioural problems and delinquency in the society (Stull, 2013). Thus, improving and closing achievement gaps is a goal of both national and state education policy as well as efforts from parents. Considering the literature inconsistency on students' academic achievement and the trends in the national examinations conducted for students at secondary school level in Nigeria, this study will contribute to the literature debate on students' academic achievement particular from the secondary school perspective. The current study therefore used primary data from students, principals and parents collected through examination records, questionnaires, interview and Focus Group Discussions (FGDs) methods. Thus, the study solicits existing data regarding the home background factors in improving students' academic achievement in secondary schools.

### **2.3 Students' Perceptions of Family Roles and Academic Achievement**

Education remains an indisputable means for individuals and national development. It is a vehicle that contributes significantly to all spheres of human endeavour and evidently, it has been used by people to promote their social, economic, and political status (Rahuman and Uddin, 2009). Njuguna (2011) viewed education as a tool for change and currently efforts are geared toward enhancing educational process to improve students' academic achievement through parental roles. The desire for parents to provide better educational opportunities to their children depends on their level of influence both at home and in schools. Particularly, children of secondary school age can recognize their parents' efforts and can cite their parental sacrifices as sources of motivation to succeed in their academic pursuits (Osonwa *et al.*, 2013).

The social learning-cum-humanistic theory gave insight on how people acquire and maintain certain behavioral patterns with implication for initiating educational intervention strategies (Bandura, 1997). Evaluating behavioral change largely depends on environmental factors, people and behavior. Environment (home/school) is a factor that can affect a person's behavior (academic achievement). Similarly, environment and situation (family roles) or state of the learner (age, sex) provides a framework for understanding behavior (Parraga, 1990). These situations influence person's perception of the needs, time, physical features and activity more particularly from the person's immediate environment (family) (Glanz *et al.*, 2002). The three factors environment (school), people (family roles, age, and gender) and behavior (academic achievement) are constantly influencing each other (Glanz *et al.*, 2002). Hence, to harvest human motivation such as creativity, human potentials and positive academic achievement, Clay (2002) stressed that a hierarchy of individual's needs; human choices, capacity for self-direction, individual's feelings and understanding of his or her own development should be targeted through effective and realistic family roles which motivate children's educational and academic motives.

Trusty (2002) and Casanova *et al.* (2007) found that high achieving children perceived their parents as having high expectations for them without distinct differences of their socio-economic backgrounds. Dieneye (2006) Urdan and Schoenfelder (2007) assert that, parents who hold high academic aspirations for their children influence their academic motivation which make them work hard in school activities. Study by Urdan and Schoenfelder (2007) show that children whose parents were more nurturing showed eagerness of success for examinations. While, Rubie-Davies (2007) indicates that parents' pleasing both at home and schools targets students' behaviour, motivation for academic success. However, showing aversive behaviour to children has negative consequences on

their behaviour and schooling process (Urdan and Schoenfelder, 2007). Zhan (2006) expressed that children set higher standards for their school activities and social functioning when they consider their parents care for them. Dubow *et al.* (2009) have reported that the nature and extent of parent's obligations in their children's education and learning is an important factor in explaining the differential patterns of students' behaviour towards school routine activities. This study therefore, sets forth to examine students' perceptions of the influence of family roles on their academic achievement in agricultural sciences with a view to contribute to the existing literature drawing experience from social learning-cum-humanistic perspectives.

#### **2.4 Parents' Socio-economic Factors and Students' Academic Achievement**

The social learning-cum-humanistic framework affirmed that parental influence is a major factor that is conceptually associated with the social and educational indicators of their children (Chen and Kaplan, 2001; Stull, 2013). According to the social learning-cum-humanistic perspective, the desire of children to imitate their parents and respond to parental stimuli is crucial to understanding the process by which social and economic indicators are transmitted across generations (Stull, 2013). Sirin (2005) mentioned that students' academic achievements may differ because of their peculiar differences. For example, it was hypothesized that parents with higher levels social status such as education have positive influence on the educational outcomes of their children because of the expectation that such parents will be seen as good role models by their children. However not all parents, even despites the good opportunities they have can support their children's cognitive and psychosocial development throughout their school years. Consequently, Tiwari and Bansal (2004) and Stull (2013) stressed that a child with high academic achievement is well motivated by his/her family while low achievers are deprived of such motivation due to poor parenting. Studies on students' family socio-

economic factors further show a great impact on preparedness and disposition to education by parents through social, educational and economic advantages were being the main source of educational imbalance among students (Considine and Zappala, 2002; Osonwa *et al.*, 2013). This is so on the premise that these parents make available sufficient psychological and emotional stimuli to their children by providing good educational and learning environment that produce confidence and the improvement of skills needed for success.

Related to parental socio-economic effects on children's schooling is the level of economic resources of the parents which often predict better schooling indicators of children (Ermisch and Francesconi, 2001; Massey *et al.*, 2007). For instance, Alderman *et al.* (2001) and Gordon *et al.* (2004) mentioned that children in families with more resources like incomes and assets are more likely to live in areas with better schools and parents who can afford to pay for supplemental tutoring and other auxiliary services. Parents with higher incomes have greater ability to mold the behavior of their children using pecuniary incentives compared with their less wealthy counterparts (Weinberg, 2001). Studies by Considine and Zappala (2002) and Eamon (2005) found that children from families with low income have low literacy level, low retention rate, problems in school behaviour and more difficulty in their studies and mostly display negative attitude towards studies. The total income of families, monthly or annually and their expenditures put a great effect on the learning and academic opportunities accessible to children and their chances of educational success. Parents who are in the high income class are found with good occupational status and often motivate their children's physical, psychosocial and health status to learn (Eamon, 2005). McCain and Mustard (2009) observe that creating healthy environment at childhood plays an important role in providing the basis



for a healthy life and a successful formal schooling. Therefore, children with supportive food, healthcare and care from home are assumed to succeed in schools.

Parental education and occupation not only influence parent-child interactions related to learning, but also affects parents' income and the need for motivating children's learning (Willms, 2000). Pedrosa *et al.* (2006) however report that students from deprived socio-economic and educational background may perform better than those from higher socio-economic status. It is obviously true that the criteria for categorizing socio-economic standard particularly educational and income levels of parents in different countries are different depending on the norms and values in those countries (Massey *et al.*, 2007). For instance, the criteria for low socio-economic status for developed countries will be different from the criteria of developing nations including Nigeria, reasons for which this study was partly premised. But, House (2002), Marjoribanks (2003), Oribhabor and Okodugha (2010) report that different family social statuses determine the type of support children will receive to meet up with their personal and educational needs. However, Rothstein (2004), Hill *et al.* (2004) and Ogunshola (2011) deny that socio-economic status of parents affect academic performance of their children, but rather make it possible for children from low background to compete well with their counterparts from high socio-economic background under the same academic environment. This however depends on the parental commitment to education (Jeynes, 2002; Lisa *et al.*, 2003). The literature survey on socio-economic differences in school academic achievement at different levels of education indicates mixed study results.

However, one common finding is that students with high socio-economic status outperform their low socio-economic counterparts. Given these perspectives and also considering the divergent views reported in the extant literature on the effects of socio-

economic factors of parents on student's academic achievement, this study was conceived to contribute to literature on socio-economic factors of parents in Katsina State, Nigeria particularly with emphasis on parents' level characteristics like education and occupation as well as other socio-economic indicators.

### **2.5 Family Residence and Students' Academic Achievement**

Research examining predictors of home environment on students' academic achievement has focused on basic distractions in the process of acquiring knowledge and skills by students. The nature of such distractions either in the rural or urban areas may differ to some extent. For instance, Leland and Harste (2005) posited that students who lived in the urban areas have varied social statuses and different upbringing and often experience more crimes in the neighborhoods and violence on the streets than their counterparts from suburban and rural areas who relatively live in a safe and pleasant environment. Mattingly and Stransky (2010) further reported that students from rural areas who merely have similar social statuses lack basic amenities and are bedeviled with family economic problems most of whom live below the United Nation's poverty line than their counterparts from the urban areas. In spite of all these overwhelming challenges in both urban and rural areas, there are still a significant number of students who overcome the obstacles and manage to succeed in their academic pursuits (Graham, 2012).

These study findings so far indicate variations in students' achievement due to geographical location, resources and availability of technology of the residential areas. Brown (2003) asserts that the low level performing students usually come from the rural areas that experience lack of conducive environment for learning. Although rural students typically achieve less than their counterparts from the urban areas, variations do exist between one area and the other (Graham, 2012). In Katsina State the gap in the variation

of students' academic achievement may depend on the existing differences in both the urban and rural areas. Brown (2003) mention that achievement gap between urban and rural areas did exist as a result of their peculiar differences. But while some students from rural areas had above average, others are just an average (Brown, 2003). It is important to keep in mind that both urban and rural students might differ from one another on the basis of the peculiarities in their residential settings. Students can generally do well in examination scores as well as or do better than one another depending on the level of influence of their geographical and demographic factors and the educational opportunities given by the environment (Loveless, 2003; Williams, 2003).

The Nigerian nationwide secondary schools' academic achievement levels vary from state to state and locations. For example, urban students perform significantly better in some settings while in another setting the rural students do perform well (Slavin, 2006; Abdullahi, 2011). Such differences are linked to variances in a wide range of factors within the students' localities (Lee and McIntire, 2000). However, the spread of internet access now a day, increased number of educated parents, emergence of more economic opportunities and better social services might be the reasons for such disparity in students' academic achievement (Graham, 2012). These developments seem to have created academic opportunities for students. Consequently, the equality in educational achievement became an issue of debate globally. This is because all countries are more or less alike in their educational policy aspirations to ensure equal opportunities for a qualitative education to all individuals. But differences in students' geographical representations remain an educational challenge to researchers. As a result of which became the key social factor that bring inequalities in the educational achievement among students (Graham, 2012). So far there is no opposing debate regarding the influence of family residence on students' academic achievement in secondary schools particularly

coming from the Nigerian context. Therefore, this study contributes to the literature debates on effects of family residence on students' academic achievement.

## **2.6 Family Structure and Students' Academic Achievement**

Previous studies report that growing up in various family structures have educational consequences (Schiller *et al.*, 2002; Sun, 2003; Hofferth, 2006). Literature shows that a child's emotional, psychological and educational wellbeing is influenced by the combine action of the family; parenting styles, structures type, socio-cultural status, and family size (Jeynes, 2002; Eamon, 2005). Studies comparing different family structures and students' achievement levels show that family structures have clear educational advantages over one another (Coleman *et al.*, 2000; Manning and Lamb, 2003). This is particularly associated with family structure, level of resources and its deprivation, which centered on parental investment in education, based on family size and welfare responsibilities. Frazer *et al.* (2004) and Hayes and Bronzaft (2006) found that family factors such as sibling order have relationship to academic achievement. Similarly, children from single parents usually develop less concentration and greater social and psychological problems in school (Eamon, 2005). Again, literature on children's family structures reveal that the age gaps between parents and the age at which a mother gives birth affects the children academic achievement either positive or negative (Laosa, 2005). Adewale (2002) point out that in rural communities there is large family size due to polygamy and uncontrolled birth which are associated with illiteracy and such families often are characterized by low nutritional status, health problems which in turn influence students' academic success and students' dropout from school.

However, one major limitation of most studies in this area classified children into either low, middle or high class statuses and not on the basis of their family structure

composition and without giving regard to dilution of family resources (Cavanagh and Huston, 2006). It is acknowledged that family changes at any given time such as remarriages, increase in family size, changes in family income, and divorce which affect family resources, devolution and children's educational engagement. In Nigeria, relatively little has been learned about whether the educational gaps on effect of family structure reported by previous studies overlap during the schooling of adolescent stage (secondary school age). Again, such phenomenon like increase in the number of dependents in a household and the number of dependents who are schooling introduce changes in family resources, rules, and parenting practices which might adversely affect children in school by adjusting to their new family environments and cope with such challenges (Sun and Li, 2008; Beck *et al.*, 2010).

To move beyond this static approach to study family structure, a growing body of recent studies have used a humanistic perspective to guide their research (Cavanagh and Huston, 2006; Abdullahi, 2011; Osonwa *et al.*, 2013). These approaches inspired the idea of families to offer their children a basic sense of needs, security, accountability, and stability (Cummings *et al.*, 2000; Cavanagh and Huston, 2006; Osonwo *et al.*, 2013). Negative family structural changes for instance, children's trust in security like dependency ratio imposes emotional stress on them which affect their performance in school (Amato, 2001; Demo, 2010). However, these studies measured family by the number of other changes like residential parent's union statuses and family responsibilities without given due regards to variables common with other cultural value (Cavanagh and Huston, 2006; Fomby and Cherlin, 2007; Osborne and McLanahan, 2007).

Similarly, almost all existing studies on family structure examined how dynamically measured family structure affects students' academic achievement in a static way.

Therefore, study to explore role of daily changing family structure and the socio-culture changes in explaining educational outcomes of the children is advocated as a continuous process (Sun and Li, 2008). These various approaches have therefore fallen short of a full test of the social learning-cum-humanistic theories, which argue that continuous family changes not only sustain social relations, but also escalate their effect on children's learning over time. The understanding of the confounding effects of family structure composition over time seeking to compare student's achievement across other family constructs using the social learning-cum-humanistic approaches will address these limitations of the previous research literature.

In conclusion, the literature so far studied show that family structure composition has shown a large impact on students' life experiences and schooling process as well as their academic achievement. Even in schools with high quality, family structure differences among students generate larger students' academic achievement disparities. However, one important position taken is that, while family structure and family inputs still vary among parents, their resilience in educating their children as required by NPE, differences in students' achievement can be reduce through this family background influence. Given these large degree and potential influential impacts of family structures, this research was set forth to contribute to literature on family structure composition among secondary school students.

### **2.7 Parental Predisposition to Education and Students' Academic Achievement**

Parental predisposition to education or involvement in education is unequivocally essential to students' academic achievement. Parental involvement in education has been seen as parents' interactions with schools and with their children to promote academic success (Hill *et al.*, 2004). Such interactions extend beyond the engagement with schools, to the

home life and the expectations of values for education that are communicated directly or indirectly to children (Hill *et al.*, 2004). Several studies indicate that there are positive academic outcomes as a result of parental involvement with benefits beginning in early childhood throughout adolescence and beyond. One of such studies by Hill and Craft (2003) show the most accurate predictors of a student's academic achievement in schools is the extent to which student's families are able to:

- (a) Create a home environment that encourages learning.
- (b) Express high (but realistic) expectations for their children's achievement and future careers.
- (c) Become involved in their children's education at school, home and in the community.

Consequently, Sheldon and Epstein (2002) and Cotton and Wikelund (2005) report that, parents and family members' involvement in their children's education not only lead to better attendance, daily performance on home/school works, faster speed of reporting difficulties and improved students' behavior but it increases better academic outcome. The level of students' motivation through parental predisposition to education in secondary schools may be conceive from the above postulation as either positively or negatively associated with their academic achievement (Hill *et al.*, 2004). Consequently, students' motivation in learning situation is directly or indirectly based on parents' involvement and roles they play in their education, a role which is culturally derived and depend upon the family system structure of the individuals (Rodriguez, 2002).

Parents' involvement is a valuable component of student's educational success at school (Henderson and Mapp, 2002; Patrikakou *et al.*, 2005; Henderson *et al.*, 2007). Hill and Craft (2003) found that parental involvement was associated with academic outcomes because it increased academic skills, social emotional competencies of students. Similarly,

parental involvement is differentially associated with achievement based on whether parents have high or low social status (Fan and Chen, 2003; Hill *et al.*, 2004; Hill and Tyson, 2007). According to Hill and Tyson (2007) the strongest positive influence of parents' involvement is academic socialization in which parents define the value of education to their children and linking school work to students' interests or goals at home. Interestingly, for secondary school students, parental assistance is positively associated with their achievement (Henderson *et al.*, 2007). Therefore, parents at this level using competent approach can make a huge difference in the academic achievement of their children (Padgett *et al.*, 2006). Some researchers have identified theories which play significant roles in parent involvement in education (Epeisten, 2002; Fan and Chen, 2003; Seginer, 2006; Hill and Chao, 2009). These authors support that demographic factors of parents promote their involvement in education which improve their children's potentials. This provides evidence that, parents' involvement in education affects the overwhelming academic achievement of their children (Fan and Chen, 2003).

Hochschild (2003) and Eamon (2005) stated that low level home commitment prevents children access to resources, motivation, and incentives. Barry (2006) found that increased family activities such as, parents attending to school activities, spending time with the child, going on vocations and fun activities can increase test scores. Parents can therefore target the cognitive and behaviour of their children through family involvement in order to motivate their learning (Wolters, 2004). Cotton and Wikelund (2005) observe that children do well in examinations when parents intensively involved in their education. Hill *et al.* (2004) affirm that it is the parents' interest in education which makes them actively involved in matters affecting their children's education. Further study findings show that students value their education when their parents show interest in their education (Domina and Knipprath, 2005). Sheldon (2003) however show that minimal resources of parents are



one of the limiting factors why they are less involved in their children's education. Therefore, the general believe is that a parent's enthusiasm about education is, in most instances the underlying factor that contributes the child's academic success.

The foregoing theories have guided a number of research and conceptualized that parents' involvement in education includes communication between families and schools, parental participation in education at school, parental commitment at home such as providing educational experiences, support in child's learning materials and extra lessons (Epstein, 2002). Whereas some of these theories were based on elementary school contexts, additional research to support appropriate types of involvement for secondary school need to be examine (Hill and Tyson, 2007). Other theories on parents' involvement advocate value for education and linking school work to parents' interests or goals (Hill and Tyson, 2007) and structural involvement, which includes providing students with space, guided time, decision, materials and expectations for achievement that are essentially important for their achievement (Chao, 2000).

In line with this study, it was noted that several studies do not apply a multifaceted typology of parental predisposition or involvement in education of children they rather describe it as a one dimensional construct (McCarron and Inkelas, 2006; Oyserman *et al.*, 2007) or as a context in which it takes place either at home or in school alone (Jeynes, 2003; Giallo *et al.*, 2010). This study rather view parental involvement in education as a family role in which it brings into both home and school situations and experiences. Although parents engaged in their children's schooling in one form or another, their involvement is basically being limited to home activities by some researchers (Nyarko, 2011). However, the new era in Katsina State where more parents attend PTA meetings, school visits and recreational events are emerging efforts which can bring differential

learning opportunities among students. More so empirical studies have reported parental involvement in their children's education varies with socio-demographic factors and economic circumstances of parents (Schimpl-Neimanns, 2000; Georgiou, 2007; Schmitt and Kleine, 2010).

Thus, the social learning-cum-humanistic theory adopted in this study provides insight on students' motivation to support their learning outcomes. Similarly, the types of parents' involvement to motivate secondary school students in Katsina State are not sufficiently accounted for in the extant theories and literature, thus, one can say that parental involvement does not decline during this period of schooling (Hill and Taylor, 2004; Hill and Tyson, 2007). This provides literature research gap in education particularly in the study area to examine parents' predisposition to education that motivate academic achievement of their children.

### **2.8 Determinants of Home Background Factors on Students' Academic Achievement**

The importance of education for national development has placed secondary schools at the centre of the efforts of governments to increase the rate of literacy level in Nigeria. Students' success at this level depends on their academic achievement after taking the organized national examinations conducted by WAEC and NECO. Intelligence is not the only determinant of the academic performance of students. Academic performance of a student has been associated with many components of learning environment (Ogunshola, 2011). It is worth noting that students' academic achievement is affected by numerous factors including sex, age, students schooling, father/guardian social economic status, residential area of students, and school factors. Many studies about the factors contributing to students' academic achievement at different study levels were conducted. The most common study findings are the statistically significant effects of family background

variables (Hanushek, 2003; Bratti and Staffolani, 2013). While, Considine and Zappala (2002) noticed that parent's social status positively affects the student test score in examination. Other studies have found parent's educational background, family income, self motivation of students, age of student and school, as important factors that have effect on student's academic achievement in different setting (Osonwa *et al.*, 2013). However, these studies failed to provide answers to which of these family variables have the most determining effect on students' academic achievement.

One of the major educational challenges in developing countries and in Nigeria is how to provide equitable educational opportunities to all social groups or classes. However, still in Nigeria, as it is usually the case with most other African and developing countries that the larger a family is, the smaller is its income which is characterized by poverty and less chances of children being properly educated (World Bank, 2014). The fear of large family members in a household particularly in northern Nigeria is worrisome because children can be raised by parents without knowing the significant implication of doing so to education of the children. In addition, things go the same way because of limited access to education of the parents which limit their support to education not talk of the high number of out of school children who are raised in such families. Most of these issues call for a real investment in education from both the government and parents and the private sector (Abdullahi, 2011). Doing so could then lead to increase in human capital as people could be able to work and improve their skills. From that, more human capital would mean more income and ultimately less poverty which in turn increase more support to children's education (World Bank, 2014).

In line with the above, in its effort to close the economic and educational gap among people, a poverty economic stimuli package, Subsidy Reinvestment Programme (SURE-P)

was design by the federal government of Nigeria in 2011 to redress the imbalance between social class to improve their livelihoods and increasing parental participation and support for education. In Katsina State, the programme was launched in all the 34 local government areas where parents' were supported with financial assistance. Even though, it was politically motivated and the funds were not enough to cover all households, yet a number of the household beneficiaries have been economically empowered at various levels.

Another important stride was the introduction of mass literacy programme to educate illiterate parents' to enlist their support for education of their children knowing fully the value of education. The programme provides a platform for parents to study up to university education. However, in spite of the efforts by all tiers of governments to address the rising illiteracy level, there has not been much progressive increase in the literary level, especially among adults. According to the National Bureau of Statistics (NBS) (2013), adult illiteracy rate in Nigeria stands at 56.9%. The implication of this is that about 70% of Nigerians can be illiterate. Considering the fact that globally the illiteracy rate is approximately 20%, the Nigerian situation is rather disturbing. The States mostly affected are in the northern part of the country which recorded the lowest literacy level among parents in the country (NBS, 2013). Umanah and Wonu (2010) stated that educational level of parents is an important motivator of children's academic pursuits. The current trend, if not quickly halted, could obstruct the attainment of the Millennium Development Goals (MDG's) of providing education for all children. These issues are part of the social and economic determinants for influencing the kind of supports parents give to their children's education. This study is set forth to ascertain if these policy pronouncements have translated into public awareness on needful parental support to education toward improved academic achievement of students in accordance with the national policy on

education for ensuring that all children are fully supported in their pursuit to education with pool of opportunities.

At present, there is no clear conclusion in the literature debate on the determinants of home background variables with most important effect on students' academic achievement. The study results from the existing literature vary depending on the method used and the dataset employed. With better quality data and more up-to-date methodology, effects of home background factors are found to be significant in most studies. Although some previous analyses did not reach the same conclusion, one point clear is that everyone agrees regarding the effectiveness of home variables that they make a difference if parents are effectively committed to their children's education and have good economic fortunes as against lesser attitude and disadvantaged circumstances. The study therefore used stepwise regression model to establish the effects of home background factors with strong effects on students' academic achievement with a view to contribute to the current literature debate on home background factors.

## **2.9 Summary**

Theories affirmed the nature of interrelationships between home background characteristics and its influences on students' academic achievement. The aim of this research was to explore the effects of home background factors on students' academic achievement. The interactions of these independent variables determine students' academic achievement in schools. However, it is likely students will have self-determination based on the interactions with their parents. Parents can make their children have a strong belief in their ability to achieve a particular goal and which will motivate them to design steps towards achieving the goal. This can be realized if parents play their roles of making their children understand themselves and belief in the family norms and

values. The self-belief in children according to Tavani and Losh (2003) is a powerful motivator for students' understanding of their parents' expectations and do the needful regarding their schooling. Urdan and Schoenfelder (2007) assert that parents who could provide their children with nurturing support were having an important influence on their children. According to Rubie-Davies (2007) these parent factors influence the attitudes of children to school which motivate them to learn and attain a high academic success. Sirin (2005) earlier posits that educational relationships are contingent upon a number of factors but it appears as if home background factors are the most important determinants among other factors. Woolfolk (2007), for instance, provides theoretical and empirical insight into the determinants of academic achievement. The model claims that, parent's influence increased over time and even stronger than the effect of any other variable. Therefore, if the academic achievement of secondary school students is to be predicted using their background characteristics, how much variability can be explained by these characteristics? This provides research literature gap in education particularly in Katsina State on effects of home background factors on students' academic achievement in agricultural sciences.

## **CHAPTER THREE**

### **3.0 RESEARCH METHODOLOGY**

#### **3.1 Overview**

This Chapter presents the methodologies used in the study. The chapter is divided into the following sub-headings; (a) description of the study area, (b) research design, (c) population of the study, (d) sampling procedure and sample size, (e) validity and reliability of instrument, (f) data collection, (g) data analysis, (h) operational definitions and measurement of variables.

#### **3.2 Description of the Study Area**

Katsina State is found in the North-western States of Nigeria. The State was carved out from Kaduna State on 27 September, 1987. It is bounded by Niger Republic in the north, by Jigawa and Kano States in the east, by Kaduna States in the south and Zamfara State in the west. The State is made up of two emirates of Katsina and Daura which feature prominently in the establishment of the seven Hausa Kingdoms. Katsina State lies in the Latitude 13 North and Longitude 7.41' East. The major occupation of the people in the area is farming while the elites majorly engaged in civil service. The major crops cultivated by farmers includes groundnuts, cowpea, cotton, millet, maize, guinea corn, rice, vegetables and keeping of livestock like poultry, cattle, sheep and goats. Katsina State consists largely of scrub vegetation with some wooded savanna in the south. There are 34 local government areas in Katsina State. The indigenes of the study are Hausa and Fulani (Nkromah, 2007). According to the 2006 national population census, Katsina State has population size of 5 792 578 people.



Figure 2: Map of Katsina State, Nigeria showing the study area



Katsina State is known as one of the leading states in northern Nigeria both in formal and informal education. However number of people particularly those living in rural areas had no formal education because of the attitudes towards western education and the quest for Quran education (KTSMOE, 2010). In recent time literacy rate and education has improved in Katsina State. It is because education remains the number one development priority of the administrations of Katsina State. It is also the sincere belief of the government that there is no substitute to quality education. The primary and secondary school education has been free of tuition since the inception of the current democratic administration of Katsina State. More so, a special programme on secondary schools expansion, rehabilitation and upgrade programme was initiated to compliment issues of educational infrastructure. However, purchase of science equipment, provision of classroom accommodation, recruitment of qualified teachers, provision of practical fields and laboratories amongst other efforts by STEB were issues that made schools under the board unique in Katsina State.

The gains of the massive investments made in the education sector are evident in the school enrolment figures which continuously jumped in every successive session (KTSMOE, 2013). It could be observed that the education sector witnessed a total overhaul within the last few years with target specific projects aimed at advancing the quality and outcomes of students' education in the State (KTSMOE, 2013). With this giant stride of the government much has not been established on students' motivation from the home front considering its important position in laying the foundation and sustenance of students' learning environment.

Right from inception in its giant stride in the education sector, Katsina State government established STEB in 1989 with seven institutions to promote the study of science and technology. Later additional nine secondary schools were absorbed from the ministry of education giving the total number of secondary schools under STEB to sixteen. Out of

these secondary schools, eleven were science secondary schools and five of them were technical schools. The schools are distinguished from other secondary schools in Katsina State by their outstanding performances in WAEC and NECO examinations since inception. This reason might not be unconnected to their common characteristics in terms of better school equipments and facilities, student-teacher ratio, students being in the boarding, access to practical orientation as well as centralized admission and promotion exercises.

### **3.3 Research Design**

The study was an ex post facto research but adopted a cross sectional survey design. Changes in the family everyday life and state of economy of the people as well as daily family relationship justify the choice of the design. Creasey (2006) and Miller (2006) recommended the use of cross-sectional survey research because of its high degree of accuracy and precision in social science research. The intent of a cross-sectional survey for this study was to allow the researcher to efficiently describe the influence of home over time on students' academic achievement.

Several factors were taken into account for using cross-sectional design for this study. These include; developing hypothesis, deciding how to test the hypothesis, collecting data, and evaluating the hypothesis. Questions were immediately set regarding how the research was to be conducted and what pitfalls must be avoided in order to make sure the results of the study were interpretable. Further, the design was relevant to this study because of its usefulness in identifying associations. The design allows for replication to measure changes in a given population. Again, the design has a social interaction approach rather than multiple groups. These were reasons for the suitability and relevance of cross sectional design for this study.

### **3.4 Population of the Study**

The study population involved all students from secondary schools under STEB. The choice of students in schools under STEB was justified by the fact that they have common characteristics and take agricultural sciences as compulsory subject. Students are kept as boarders with standardized record keeping and having an institutionalized central class promotion exercise. The schools are having more qualified teachers and provision of adequate instructional materials provided by the board compared to other schools in Katsina State. All the schools are distributed in the three senatorial zones of Katsina State (north, central and south) as follows; Government Science Secondary School (GSSS) Dutsin-ma, GSSS Kaita, GSSS Batagarawa, Government Girls Science Secondary School (GGSSS) Ajiwa, Government Girls Technical and Commercial College (GGTCC) Charanchi, in Katsina central senatorial zone; GSSS Bindawa, GGSSS Mani, GGSSS Sandamu, Government Technical College (GTC) Mashi, GTC, Ingawa and Government Commercial College (GCC) Maiadua in Katsina north senatorial zone while GSSS Kankara, GSSS Faskari, GSSS Musawa and GGSSS Daudawa, and GTC Funtua are located in Katsina south senatorial zone (Fig. 2). Parents were involved in FGDs and school principals as key informants to support the data collected from the student respondents.

### **3.5 Sampling Procedure and Sample Size**

#### **3.5.1 Sampling of student respondents**

Sampling procedure for the study involved multistage sampling technique. It mainly involved selection of study area, study respondents and allows the use of sampling in phases (Magnani, 1997; Bailey, 1998; Babbie, 2004; Kothari, 2006; Kothari and Garg, 2014). The technique was done in three stages.

*Stage 1:* First sampling stage involved categorization of STEB secondary schools into the three senatorial zones and random sampling was used to select two secondary schools from a list of the secondary schools. Overall, six sampled schools were selected and are the representative of all the 16 schools. The following secondary schools were selected as indicated in Fig. 2; GSSS Dutsin-ma and GSSS Batagarawa from Katsina central senatorial zone; GSSS Bindawa and GGSSS Sandamu from Katsina north senatorial zone, while GSSS Kankara and GGSSS Daudawa from Katsina south senatorial zone respectively.

*Stage 2:* Within each school, one year group was randomly chosen with a guarantee of covering all kind of students. All the students in the selected year groups were involved in a random sampling procedure to select the student respondents. The distributions of the population and the sample in each school are quite similar because of the central admission policy of the board. Consequently, each of the secondary school has a total of six year groups namely Junior Secondary School (JSS) JSS1, JSS2, JSS3, Senior Secondary School (SSS) SSS1, SSS2 and SSS3. However, only groups having three years consecutive results were involved for consistency and reliability of students' performances in the study. Hence JSS3, SS1, SS2 and SS3 were considered in each of the schools during selection.

*Stage 3:* Third sampling stage involved selection of study respondents. A sample of 50 students was randomly selected from among all students in each of the six year groups selected from the schools. The reason for this was that the distributions of the population and the sample in each school are quite similar because of the central admission policy of the board. However, to get the sample size using random sampling technique, a year group list from students' record office comprising names of all students from the classes that

made up the year group was used as a sampling frame. Sampling interval was obtained by dividing the total number of students in JSS3 up to SSS3 by the number of classes from each school which gave (Schools A 48.65, B 48.54, C 47.93, D 49.21, E 48.26, and F 48.17 respectively) students per year group as the required sample size (n). Thus, considering the sample sizes (n) closer to each other, an average of 50 students was proportionately taken from each of the six secondary schools following the recommendation of Squeglia (2008). Then every N<sup>th</sup> student in the list was selected using a Microsoft excel in each year group, making a total sample size of 300 student respondents (200 male and 100 female) from the four male and two female secondary schools.

To validate and ensure the reliability of the sample size (n), a sample size formula as applied by Squeglia (2008) was used as follows:  $n = (Z_{\alpha/2} \sigma / e_m)^2$ , where: the confidence interval was assumed ( $p \leq 0.05$ ), ( $\sigma = 0.05$ ) and ( $Z_{\alpha/2} = 1.96$ ). The standard deviation was estimated at 10,  $e_m$  is the marginal error units on the scale of measurement (taken as  $\pm 2.5\%$ ). The required sample size was 47.87. In view of this, considering that in taking a sample size, the researcher should look into the available funds and time for the research, the decision to use an estimated 50 respondents being the average required sample sizes (n) for each school as representation was justified as used by (Nyarko, 2011; Kothari and Garg, 2014). According to Hair *et al.* (2006) a sample size range of 200-500 is enough for social survey studies and for rigorous statistical analysis. For this reasons, the 300 student respondents were served with a structured questionnaire as instrument for generating primary data. The questionnaire was pre-tested prior to actual data collection to establish the validity and reliability of the instrument (Kothari, 2006). The reliability coefficient was established through a Cronbach alpha test as discussed in section 3.6.

### **3.5.2 Sampling of Key Informants and Focus Group Discussion Participants**

A total of six principals (4 male and 2 female) from the six selected secondary schools were purposively selected as key informants in the study. The key informants were essentially considered knowledgeable persons who can be in the position to provide information on the subject matter of this research. While, a total of 10 parents (7 male and 3 female) from each senatorial zone, were selected using peer esteem snowball technique thus, making a total of 30 participants. The use of 10 participants in each zone follows the recommendation of Barbour (2011) who mentioned that with more than 10 persons in FGDs, some participants just keep silent, while too few participants some topics are not effectively discussed. However, the choice of peer esteem snowballing for selecting FGDs participants was informed by the facts that it reduces selection bias and therefore can be used to report estimate of the sample size viz a viz the population. The selected parents for the FGDs were in the age range between 38 to 65 years.

### **3.6 Validity and Reliability of Instrument**

Validity of instrument refers to the extent to which an empirical instrument adequately indicates the real meaning of the concept under consideration. In other word, it is the match between the conceptual definition and the operational definition of concepts. Complete validation is never fully attained and therefore should be viewed as a never ending process. Validity evidence is empirical evidence and theoretical rationales that support the inferences made from the validated instrument or measures (Johnson and Christensen, 2007). Validity evidence can be obtained through different methods. The validity test in this study was thoroughly examined by the two supervisors who are experienced researchers through face validity.

Reliability of measures on the other hand, refers to the consistency of the measurement. It implies that if the variation among repeated measurements using the same measurement method and on the same subject is low, then the degree of reliability is high, and vice versa. Internal consistency estimates reliability by grouping questions in a questionnaire that measure the same concept. One frequent way of computing the estimates is by correlating values among the questions on the instruments using Cronbach's Alpha, which was originally derived by Kuder and Richardson (1937) for dichotomously scored data (0 or 1) and later generalized by Cronbach (1951) to account for any scoring method. In essence, Cronbach's alpha splits all the questions measuring the same instrument in every possible way and computes correlation values for all of them.

The pre-testing was done at Government Day Secondary School (GDSS), Kankia where 20 students were randomly selected and interviewed. The pre-testing of the questionnaire was done in December 2013 and was necessary to check validity, reliability and practicability of the instrument (Kothari, 2006). The result of the Cronbach alpha test indicated that the standardized item coefficient alpha was 0.78. According to Nunally (1978) an alpha scale of a reliability test should be greater than 0.70 for such items to be used as a scale, while Ekeh (2003) stated an alpha scale coefficient of 0.65 as reliable. Hence, the scale of 0.78 used in this study was considered reliable.

### **3.7 Data Collection**

Data was collected through primary and secondary sources. Both quantitative and qualitative data types were collected in the study. Quantitative data were gathered from students and examination offices. Qualitative data was gathered from parents and school principals. The data collection was conducted with the help of STEB Executive Secretary who granted the approval for the survey and informed all the school principals. An

interactive session was organized for the principals with the assistance of STEB Director Schools to introduce this research study and its significance as well as to seek for their cooperation. While Katsina State Parent Teachers Association (PTA) chairman introduced the researcher to all the zonal and branch coordinators of PTA for easier contact and selection of parents. The following data collection techniques were used for collecting information from the respondents.

### **3.7.1 Questionnaire**

The instrument for collecting the primary data was a structured questionnaire written in English language and designed to address the general and the specific objectives of the study. The survey was conducted in the months of January to April, 2014. During the survey, the questionnaire was administered to the respondents by the researcher and each zonal research team as research assistants. The questionnaire covered aspects of students' home background characteristics using the constructs of the independent variables as indicated in the conceptual framework (Fig. 1) as sub-sections of the instrument thus, were: socio-economic factors, family residence, family structure, and predisposition of parents to education indices as well as perceived family roles. Open and close-ended questions were used in the questionnaire. In the open-ended questions, respondents were supposed to give their own views/list while in the close-ended questions they were supposed to choose from among the given alternatives as shown in Appendix 1. All the 300 copies of the questionnaire distributed to the respondents were duly completed and returned, constituting a return rate of 100 %.

### **3.7.2 School Records**

Another source of data collected was from the school records in each of the six secondary schools which include students' academic records provided by the examination officers



and students' personal records from the record offices. The students' academic records comprised both combination of standardized continuous assessments and terminal examinations compiled for the past three years. The assessments were computed into average scores (0-100) for each respondent. The average scores stand as proxy for the academic achievement of the respondents. While, the student's personal records included their age, sex and parents' biodata as provided during students' registration.

### **3.7.3 Key informant and focus group discussion interview schedules**

Key informants' interview with school principals was conducted by the researcher using interview schedule. The key informant interview schedule was framed to make contact with all the six principals. Principals' cell phone numbers were collected for the researcher to contact. List of questions were compiled and asked to the key informants in English Language as shown in Appendix 3. The key informant interview was to build, clarify and complement information generated and the general assessment of students' and parents' conducts, and academic achievement based on the specific objectives of the study. The interview was conducted individually with the school principals in their respective offices. This again provides the opportunity for the researcher to access some classical information regarding students' academic and behavioural records.

On the other hand, a direct FGDs with 10 parents was conducted in each of the senatorial zone at Katsina, Daura and Funtua towns with the help of the research assistants. A secondary school in each zone was chosen as venue for the group sessions. A total of six sessions (two in each zone) were conducted during weekends using the local language of the area (Hausa Language) at different times which were later translated into English Language for interpretation. All parents who participated in the FGDs were contacted for consensus arrangement for the dates and times of the discussions. Their interest was

however enlisted through the Katsina State branch of PTA and the local branches. A list of questions prepared by the researcher (Appendix 2) was discussed during each session to generate information on parents' general views on family conducts and responsibilities to education of children and the quest for education. In this case, the researcher had to become part of the situation during all the sessions to familiarize with the participants with a view to harvest information needed to fulfill the goal of the study. The reason was, experience has shown that some respondents may avoid discussing openly in an interview (Bailey, 1998).

#### **3.7.4 Specification of primary data by study objectives**

Specifications of the study objectives as illustrated in Fig. 1 are stated and describe as follows:

##### **3.7.4.1 Specific objective 1**

The standardize examination scores collected from the examination office from each of the six schools for all the students was computed into average scores with normal distribution that fall within the range of 0-100 and analyzed into means, standard deviations, and percentages to describe the academic achievement of the students. The students' achievement was recorded on an interval scale from excellent grade to failed grade. The scores were also analyzed using Cramer's V to establish associations between age, sex, schools, and students' academic achievement. Also a t-test and Analysis of variance (ANOVA) were conducted to determine differences between sex and between schools respectively.

##### **3.7.4.2 Specific objective 2**

This section as contained in the questionnaire comprised of the indices developed to seek the perceptions of students on family roles which influence their academic achievement.

The independent variables were; parental expectations, parental aspirations, family obligations, family pleasing and aversive influence. The variables' responses were weighted in an ordinal scale between high, moderate and low. The data was analyzed using frequencies, percentages and multiple regressions to determine the perceived influence of family roles on students' academic achievement. Qualitative data was collected through key informants' interview and FGDs with interview schedules and interpreted using content analysis to clarify and support the students' responses.

#### **3.7.4.3 Specific objective 3**

An index was developed for the quantitative data collected on socio-economic factors. The independent variables were; parent education, parents' occupation, family feeding, family health care, and family residence indices. The variables' responses were weighted between continuous, nominal and ordinal scales data to categorize the factors. Data were collected from structured questionnaire and were confirmed from school records containing the personal information of parents and students. The data was analyzed into frequencies, percentages and cross tabulation to identify the socio-economic factors associated with students' academic achievement. Cramer's V was used to establish associations between independent variables and students' academic achievement as the dependent variable. Pearson correlation was performed to establish relationship between male and female parents' characteristics and other family level factors. Qualitative data was collected through key informants' interview and FGDs with interviews schedule and interpreted using content analysis to support students' responses.

#### **3.7.4.4 Specific objective 4**

Variable indices were created to compare the students' family structure factors and their academic achievement. Data were collected from structured questionnaire. All the

responses were weighted on either continuous, nominal or ordinal scales data. Descriptive statistics in the form of frequencies, percentages and means were used to describe students' family structure composition and academic achievement. While, t-test statistic was performed to make comparison between male and female students' academic achievement based on their response to family structure with the standardized scores of students as the dependent variable. Content analysis was also used to describe findings from the key informants and the FGDs.

#### **3.7.4.5 Specific objective 5**

The students' responses were collected on parent predisposition to education with an indices; provision of resource materials, parent visits to school, provision of pocket money, extra lesson, cosmopolitaness and social amenities. The variables were weighted between continuous, nominal and ordinal scale data. The data were analyzing using descriptive frequencies and percentages to identify the level of parent predisposition to education. Descriptive statistics in the form frequencies and percentages were performed to describe parents' involvement in education of their children. Multiple regression analysis was further employed to establish the contribution of each variable in the model. The qualitative data from key informants and FGDs was content analyzed.

#### **3.7.4.6 Specific objective 6**

The quantitative data collected from the home background variable indices such as; socio-economic factors index, family structure index, parental predisposition index and family residence index were put into the scale of continuous, nominal and ordinal data types. The data was categorized into students' sex and analyzed using discriminant function analysis to identify the effect of the family factors between male and female students on their academic achievement. To determine how much of the variance could be examined from

the home background factors related to students' academic achievement, stepwise regression was used to select the home background factors as independent variables with strong effect and the students' scores used as the dependent variable.

### **3.7.5 Secondary data**

The secondary data were collected through review of documents obtained at STEB examination office, school record office, WAEC office, NECO office, libraries, textbooks, print journal articles and web-articles using researchers' diary.

### **3.7.6 The research team**

A research team for the study consisted of six form masters and the six examination officers who are custodian of the schools examination and other records. In addition, two research assistants were recruited from ABU, Zaria for research protocols, data collection and coding. The two assistants were all conversant in educational statistics and with experience in data collection. A team was constituted for each senatorial zone and a leader was picked among the research assistants to organize the research team, venue and communicate my message to the research team during the survey. Each zonal research team had a membership of four persons excluding the two recruited research assistants from ABU, Zaria.

Two weeks before the commencement of the survey, five hour training was carried out for all members of the research team at Katsina multipurpose centre. During the session, the training discussed the research goal, data collection requirement and the responsibility of the research team. The detailed process on how to carry out the research was fully understood during the training like how to deliver, deliberate and collect back the questionnaires, as well as how to collect and compile students' scores. Another important

issue was logistics such as grouping parents into the senatorial zones, transportation arrangement and emergency contact were also put in place. Again, all the questions were reviewed with the research assistants, so that they could assist the researcher to answer potential questions raised by the respondents. Issues of research ethics and conduct were emphasized during the session, such as arriving at schools and venues for the FGDs on time, respecting school arrangements to avoid any possible conflict, and patiently explaining the requirement of this data collection when there is any misunderstanding.

### **3.8 Data Analysis**

Quantitative data collected was coded in the Microsoft Excel spreadsheet and analyzed using Statistical Package for Social Sciences (SPSS) version 20. The tools of analyses employed in order to achieve the stated objectives of the study were; the use of descriptive statistics, Cramer's V, t-test, ANOVA, Pearson correlation, discriminant function analysis, multiple regressions and stepwise regression analyses. The qualitative data collected from the key informant interview and FGDs was organized and interpreted through a content analysis mainly by clustering the information into sub-themes. Thus, were specified as follows:

#### **3.8.1 Descriptive analysis**

This analysis was performed in the form of mean, standard deviation, frequencies and percentages to summarize and tabulate data on students' academic achievement, socio-economic factors, family structure, parent predisposition to education and students' perceptions of their family roles. While cross tabulations was used to establish associations between students' academic achievement and the socio-economic factors of students' families.

### **3.8.2 Cramer's V analysis**

The goal of using Cramer's V scores was to examine associations between students' age, sex and schools with students' academic achievement. Associations were also established between family socio-economic factors and students' academic achievement. During Cramer's V analysis, independent variables were compared with students' standardized academic scores. At the end of the process relationships between the independent variables and the dependent variable were established as discussed in sub-sections 4.1.2 and 4.3.2 respectively. The choice of Cramer's V score was informed by its strong measure of association with nominal variables than other correlation measures like chi-square. The measure also establishes the kind of relationship between the variables when there is any.

### **3.8.3 T-test statistic and ANOVA analyses**

T-test and ANOVA were performed to compare students' academic achievement between sex and between schools as well family structure composition respectively to investigate whether there were significant differences. Students' mean achievement scores based on sex, schools and family structure constructs were used during the analysis with the students' academic scores as the dependent variable. T-test statistics was essentially used to determine if the two sets of the data between students' sex and their academic achievement and family structure composition were significantly different from each other. The t-test looks at the t-statistic, t-distribution and degrees of freedom to determine the p value (probability) which was used to determine the means difference between the subjects. While to compare between mean scores of schools, ANOVA was performed. The study results on t-test were presented in sub-sections 4.1.1 and 4.4.2, while ANOVA was shown in Table 1 respectively.

### **3.8.4 Pearson correlation analysis**

Pearson correlation coefficient is a measure of the strength of a linear relationship between two variables and is denoted by  $r$ . Basically, a Pearson correlation attempts to draw a line of best fit through the data of two variables, and the Pearson correlation coefficient,  $r$ , indicates how far away all these data points are to this line of best fit. The stronger the relationship of the two variables, the closer the Pearson correlation coefficient,  $r$ , will be to either +1 or -1 depending on whether the relationship is positive or negative, respectively. Pearson correlation in this study was performed to establish relationship between parents' gender characteristics and students' academic achievement presented in sub-section 4.3.3. During analysis male and female parents' characteristics as well as other dichotomous family level factors were used as the independent variables to establish the relationship.

### **3.8.5 Discriminant function analysis**

The main purpose of using discriminant function analysis was to predict group membership of male and female students' sex. It was also performed to give insight into the predictive effects of home background factors discriminately between male and female students' academic achievement. Thus, the analysis was done to determine whether or not family factors discriminate between male and female students with interpretation as good, not at all, or somewhere in between. All the set of home background factors were included in the model during analysis to observe which of the variable discriminate students' sex. The study results were established as presented in sub-section 4.6.1.

### **3.8.6 Multiple regressions**

Multiple regressions was used to analyze the full sample data generated from the students on family roles and parent predisposition to education and used for the identification of



significant influence of the predictor variables on the response variable. The model was specified as follows:

$$Y = a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + \dots + b_nx_n + e$$

Where:

Y = response variable/students' academic achievement

a = constant

$b_1$ - $b_n$  = regression coefficients

$x_1$ - $x_n$  = independent or predictor variables

e = error term

At the end of the analysis when variables for the family roles were entered into the regression model, all the five independent variables were found statistically significant to have influenced students' academic achievement as presented in sub-section 4.2.2. Similarly, when the variables for the parent predisposition to education were regressed, only variables cosmopolitanness and social amenities were not statistically significant as discussed under sub-section 4.5.2.

### **3.8.7 Stepwise Regression**

Further, to determine the strongest home background factors that affect students' academic achievement, stepwise regression was used as well as to test the study hypothesis. The predictor variables were entered into the stepwise regression in a single step and then the insignificant variables were removed one by one depending on their magnitude of significance. This continued until when no more variables could be removed. At this stage all variables that remained indicated strong significant effect on students' academic achievement. The analysis was completed whereby nine variables remained significantly important as shown in Table 13. The regression model is specified as:

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_p x_p + E$$

Where:

$y$  = is the dependent (outcome) variable,

$\beta_0$  is the intercept,

$\beta_i$  is the  $i$ th regression coefficient,

$x_i$  is the  $i$ th independent variable,

$p$  is the number of independent variables ( $x_1 + \dots + x_{19}$ ), and

$E$  is the error with mean zero.

The analysis taken as:

$$Saa = a + b_0 + b_1 x_1(pe) + b_2 x_2(po) + b_3 x_3(ff) + b_4 x_4(hc) + \dots + b_{19} x_{19}(rt) + e$$

Where:

$Y$  = response variable/students' academic achievement (Saa)

$a$  = constant

$b_0$  = regression coefficients

$x_1$  = Parents' educational level (pe)

$x_2$  = Parents' occupation (po)

$x_3$  = Family feeding (ff)

$x_4$  = Family health care (hc)

$x_5$  = Perceived religious involvement (ri)

$x_6$  = Family type (ft)

$x_7$  = Family size (fs)

$x_8$  = Dependency ratio (dr)

$x_9$  = Siblings order (so)

$x_{10}$  = Age category of parents (ac)

$x_{11}$  = Provision of resource materials (rm)

$x_{12}$  = Parent visits to schools (vs)

$x_{13}$  = Provision of pocket money (pm)

$x_{14}$  = Cosmopolitaness (cs)

$x_{15}$  = Extra lessons (el)

$x_{16}$  = Social amenities (sa)

$x_{17}$  = Place of residence (pr)

$x_{18}$  = Area of residence (ar)

$x_{19}$  = Residential type (rt)

e = error term

After stepwise regression was performed, the statistically significant variables were the strong factors with determining effect on students' academic achievement. The regression results were used to test hypothesis (2).

### **3.9 Operational Definitions and Measurement of Variables**

In the development of the study variables, most of them follow previous studies as discussed in the conceptual framework, theoretical orientations and literature sections of this study. Thus, the variables were operationalized and measured as dependent and independent variables in the following ways.

#### **3.9.1 Dependent variable**

- **Academic achievement**

This referred to students' actual performances that were reliably measured from tests, practical and examinations. Academic achievement in this study was measured by the standardized average scores of the respondents in agricultural sciences computed during the survey. The average scores comprised both combination of standardized continuous assessments and terminal examinations compiled for the past three years with normal distribution that fall within the range of 0-100.

#### **3.9.2 Independent variables**

##### **3.9.2.1 Socio-economic factors**

These were economic and social factors of the parents that had potential effect on students' academic achievement. The socio-economic content factor was determined in the study by the constructs defined in the conceptual model and operationalized below. It is

assumed that parents with better socio-economic status will provide their children better educational opportunities.

**Parents' educational level:** This was defined as the parents' level of acquisition of knowledge through formal means. It is expected that students with parents having high level of education will have high chances of better academic scores. Education was measured as a continuous variable in the number of years of schooling by parents.

**Parents' occupation:** This described the kind of job a parent majorly earns a living. Parents with high income earnings are expected to give more support to children's education and family welfare. Occupation was measured by a score of 1 = for parent farmer, 2 = if craftwork/artisan, 3 = if commercial trading, 4 = if civil servant and 5 = if technocrat.

**Family feeding:** This was the state of food security in terms of availability in the respondents' family. It was assumed that students who are well fed will concentrate more on their school academic activities and score higher than students who are malnourished. It was measured by 5 = always, 4 = usually, 3 = sometimes, 2 = rarely and 1 = almost never.

**Household health care:** This described the state of promoting normal well-being of the respondents' family. It is expected that students who received better health care have more intellectual alertness to achieve better results in schools. It was measured by 5 = always, 4 = usually, 3 = sometimes, 2 = rarely and 1 = almost never.

**Perceived religious involvement:** This was referred to the kind of religious engagement of the respondents with their parents. It is assumed that students who have good family

religious upbringing will have better academic scores. It was measured by 5 = regularly, 4 = usually regularly, 3 = sometimes regularly, 2 = rarely and 1 = never regularly.

### **3.9.2.2 Family residence**

This described the fact of living in a given place as reported by the respondents. To construct more credible measurement and to avoid variability in the empirical data, the variables in family residence in the questionnaires during preliminary analysis were reduced to family residence index under socio-economic variable indices except which during discriminant function and stepwise analyses were separately entered into the analyses for exclusion or inclusion as potential factors in the models. The constructs were:

**Place of residence:** This described the respondents' settlement patterns. It is assumed that students from urban areas will have more social amenities and exposer which influence their learning behaviour. It was measured by 1 = if the respondent lives in the urban settlement, 2 = if the respondent lives in the semi-urban settlement, and 3 = if the respondent lives in the rural settlement.

**Area of residence:** This described where the respondents' family house is located within place of residence. Students who live in less congested areas have less environmental influence and thereby having less unscheduled activities. It was measured by 1 = if the respondent lives in government reserve area, 2 = if the respondent lives in low-cost houses and 3 = if the respondent lives in ghetto quarters.

**Residential type:** This described the nature of the respondents' family buildings or residence. Good and planned houses are associated with high economic status and provide enough space for reading, children's room and play areas. It is expected that students in kind of environment will better educational opportunities. It was measured by 1 = if the residence is build with bricks, 2 = if the residence is build with concrete blocks, 3 = if the

residence is made with mud and 4 = if made with corroborated iron, and 5 = if made from wood.

### **3.9.2.3 Family structure**

This factor was defined by the nature of the respondents' households in which they belong. The constructs that explained family structure in the study were defined as follows:

**Family type:** This was described in the study as respondents' family status in terms of being either monogamous or polygamous family type. The assumption is that students in monogamous families will be given more attention from their homes, hence will perform better than their counterparts. It was measured by 1 = if the respondent is from a monogamous family and 2 = if the respondent is from a polygamous family.

**Family size:** This was the total number of dependents under one household. The student's academic development is assumed to be affected by the number of dependents in given families which influence either directly or indirectly through the kind of relationship with family members. It was measured by the number of dependents in the respondents' households during the period of the study. In ordering the scale of family size, the 2006 Nigerian population census was considered where the average family size in Nigeria was six persons per household.

**Dependency ratio:** In this study it describes the proportion of individuals that belong to the respondents' households who attend a formal schooling as at the time during the survey. It is predicted that students who have less number of family siblings who attend formal schooling concurrently have better chances of achieving better results. It was measured by the total number of family members who attend formal schooling at the time of the study. In ordering the scale of dependency ratio, the 2006 Nigerian population

census was considered where the average family size in Nigeria was six persons per household.

**Siblings order:** This described the birth sequence of the respondents in their families. This model claims that with short birth intervals between children can be related to lower academic achievement than sufficiently or normal intervals. It was measured by the number of birth order interval of the respondent in the family.

**Age category of parents:** It defined the age gap between the respondents' parents (father and mother). It is assumed that parents with large age gaps will be less active compared to small age gap parents. Thus, students with more active age parents will be given more attention which increases their academic chances. It was measured by the differences in the number of years between the two parents.

#### **3.9.2.4 Predisposition of parents to education**

These were favourable attitudes of parents in the study toward the schooling process of the respondents. It involves parental active role in creating a caring educational environment for children. This factor was determined by the constructs as defined in the conceptual model of the study. Parent predisposition to education was operationalized and measured below.

**Provision of resource materials:** It described the availability of learning materials at the disposal of the respondents provided by the home. It is expected that students who are provided with essential learning material will have high test scores. It was measured as continuous variable by the total number of learning materials provided to the respondents by their parents.

**Parent visits to schools:** This was defined as the number of visits to the respondent's school by their parents during the period of the study. This study assumes that parents' visit to school motivate students' learning since parents will discuss the importance of education and know more of their children's problems during visits. It was measured by the frequency of visits by parents.

**Provision of pocket money:** This was described as the amount of cash given to the respondents by their parents while in school to meet their needs. Parents who use their income to financially sustain the academic, personal and social life of their children influence their emotional balance in the classroom, which causes high concentration and good perception ability in academic activities. It was measured by the total amount of money (in Nigerian Naira) given to the respondents during the period of the study.

**Extra lessons:** This described the lessons respondents received outside the school scheduled instructions and organized by parents. Students with more opportunity to extracurricular learning activities will have better academic scores. It was measured by the frequency of lessons a respondent received during the period of the study; thus; 4 = if very often, 3 = if sometimes, 2 = if almost never and 1 = if never.

**Cosmopolitaness:** It described the knowledge acquire with exposure of the respondents through travels and visits to places like museum, children's park, tourism, games reserves among others with parents during vocation. Education can be enhanced by parents with visits to interesting places. With more exposure it is hypothesized that children make the understanding of their world and develops their curiosity to learning. It was measured by the frequency of travels places outside the respondents' family environment.



**Social amenities:** This described the kind of home social facilities for the respondents' household members use. It is expected that students who make better use of social amenities provided at home have more chances for high academic achievement. It was measured as continuous variable by the number of available facilities for use in the respondent's household.

### 3.9.2.5 Family roles

These are respondents' perceived parts played by their parents in a given social context as patterns of behaviour which influence students' academic achievement in schools. The variables studied under family roles were:

**Parental expectations:** These were determined as the respondents' perceptions on the conviction parent holds in his or her future level of achievement as motivating factor in their studies. Parents with high expectations in their children's education are expected to give their best to motivate them. It was measured by the index; 3 = high, 2 = moderate and 1 = low. The index was taken by summing up the corresponding scores for each respondent. Thus, the five statements under the index in the questionnaire were taken as:  $5 \times 3 = 15$ ,  $5 \times 2 = 10$  and  $5 \times 1 = 5$ . The score of any respondent will fall between 5 and 15. If the score is above 10 it shows high expectation, score of 10 represents medium expectation and score below 10 shows low expectation.

**Parental aspirations:** These were determined as the respondents' perceptions of their parents' level of optimism in the likely future achievement and which motivate them. Parents who hold high aspiration discuss more educational and career opportunities with their children which motivate test scores. It was measured by the index; 3 = high, 2 =

moderate and 1 = low. The index was taken by summing up the corresponding scores for each respondent. Thus, the five statements under the index in the questionnaire were taken as:  $5 \times 3 = 15$ ,  $5 \times 2 = 10$  and  $5 \times 1 = 5$ . The score of any respondent will fall between 5 and 15. If the score is above 10 it shows high aspiration, score of 10 represents medium aspiration and score below 10 shows low aspiration.

**Family obligations:** These are the respondents' perceptions of their parents' moral duties as obliged to motivate their academic motives. Parent who live up to their responsibilities, are expected that their children reciprocate it with hard work in school. It was measured by the index; 3 = high, 2 = moderate and 1 = low. The index was taken by summing up the corresponding scores for each respondent. Thus, the five statements under the index in the questionnaire were taken as:  $5 \times 3 = 15$ ,  $5 \times 2 = 10$  and  $5 \times 1 = 5$ . The score of any respondent will fall between 5 and 15. If the score is above 10 it shows high obligation, score of 10 represents medium obligation and score below 10 shows low obligation.

**Family pleasing:** These were respondents' perceptions of their parents' attractive or satisfying behaviours which motivate their studies. It is expected that happy students perform better in examinations than distressed students. It was measured by the index; 3 = high, 2 = moderate and 1 = low. The index was taken by summing up the corresponding scores for each respondent. Thus, the five statements under the index in the questionnaire were taken as:  $5 \times 3 = 15$ ,  $5 \times 2 = 10$  and  $5 \times 1 = 5$ . The score of any respondent will fall between 5 and 15. If the score is above 10 it shows high family pleasing, score of 10 represents medium family pleasing and score below 10 shows low family pleasing.

**Aversive influence**

These were the respondents' perceptions of evidence of home maltreatment behaviour which are associated with emotional and behavioral problems and could lead to less academic concentration and achievement. Students with less aversive treatment will score higher marks in their examinations. It was measured by the index; 3 = high, 2 = moderate and 1 = low. The index was taken by summing up the corresponding scores for each respondent. Thus, the five statements under the index in the questionnaire were taken as:  $5 \times 3 = 15$ ,  $5 \times 2 = 10$  and  $5 \times 1 = 5$ . The score of any respondent will fall between 5 and 15. If the score is above 10 it shows high aversive influence, score of 10 represents medium aversive influence and score below 10 shows low influence.

## **CHAPTER FOUR**

### **4.0 RESULTS AND DISCUSSION**

This Chapter presents results and discussion of the study findings. The chapter is divided into sections and sub-sections. The sections were:

- 4.1 Current students' academic achievement in agricultural sciences.
- 4.2 Students' perceptions of family roles influencing their academic achievement.
- 4.3 Family socio-economic factors associated with students' academic achievement.
- 4.4 Comparison of family structure composition and students' academic achievement.
- 4.5 Effects of parents' predisposition to education on students' academic achievement.
- 4.6 Determinants of home background factors with strong effect on students' academic achievement.

#### **4.1 Current Students' Academic Achievement in Agricultural Sciences**

##### **4.1.1 Respondents' academic achievement scores in agricultural sciences**

The study objective 1 is aimed at describing the current academic achievement status of students taking agricultural sciences. Less than half, 48.8% of the respondents scored good grades, and 25.5% got fair grades. Further, 13.3% of the respondents scored very good academic achievement grades, while few, 11.4% scored excellent academic grades and only 1% scored failed grades (Table 1).

**Table 1: Respondents' academic achievements (n = 300)**

Academic grade	Frequency	Percentage	n	Mean	Std. dev.	F	Sign.
Excellent (70-100 marks)	23	11.4					
Very good (61-69 marks)	40	13.3					
Good (50-60 marks)	146	48.8					
Fair (40-49 marks)	88	25.5					
Failed (0-39 marks)	3	1.0					
Total	300	100					
<b>School</b>							
A			50	53.36	9.0368		
B			50	54.48	9.9596		
C			50	53.60	7.6185		
D			50	51.18	8.0145		
E			50	53.38	8.5210		
F			50	53.80	6.5560	0.894	0.486 <sup>ns</sup>
<b>Sex</b>							
Male			200	53.155	8.7248		
Female			100	53.590	7.5653	4.706	0.031*

\*p < 0.05, ns = not significant

The overall mean achievement score of the respondents was 53.30, showing good grade. Aremu and Oluwale (2001) stressed that academic achievement of students is a fundamental criterion to measure standards of excellence. It can, therefore, be said that based on this result, many students have potential to perform effectively in organized national examinations and can join agricultural science courses in the Nigerian universities and elsewhere, since this level of academic grade in agricultural sciences has met part of the requirement for every candidate seeking admission into agriculture and related careers. The mean achievement scores for school B was 54.48 and 53.80 for school F, while the mean scores for school C was 53.60. Further, the mean achievement scores for schools E and A were 53.38 and 53.36, respectively. Yet, the lowest mean achievement scores of 51.18 was obtained by school D. The difference in students' academic scores with schools using ANOVA (0.486) did not show any statistically significant difference (Table 1).

These mean achievement scores of respondents were however marginal. Social learning theory asserts that variations in academic achievement are dependent on the extent of the support given whether strong or weak (Lave and Wenger; 2005 Wenger, 1998). Katsikas and Panagiotidis (2010) assert that support for students can motivate their learning process and usually comes from parents. Key informants interviews with all the school principals affirmed the claim that variations in students' academic achievement could be due to differential support that parents gave to their children. Further, the study findings by sex revealed that mean achievement scores for male and female respondents were 53.155 and 53.590, respectively. This suggests that there was little disparity in mean achievement scores of the two groups. The study result of t-test showed statistical significant difference of mean between male and female students at 4.706 at  $p \leq 0.31$  (Table 1).

Other studies show that male students achieve better than female students in certain settings, while female students outperform male students in the other settings (Haist *et al.* 2000; Aguele and Agwugah, 2007; Stone *et al.*, 2008; Abdullahi, 2011). Deepak *et al.* (2011) and Hedjazi and Omid (2008) reported that male students' dominance in enrolment proportion could be an added factor. However, Ward (1996) and Newman-Ford *et al.* (2009) mentioned that such variation is only minor, suggesting that female students are not intellectually backward. Conclusively, the academic achievement of female students in the study area suggest that knowledge of agricultural sciences could transform into increased number of female students who seek agricultural education, self confidence in agricultural activities, and improved women economic empowerment through agriculture and related careers. This study finding on female students revealed some break through considering the report of Katsina State education strategic plan which stated that parent lukewarm attitudes towards western education, particularly for girls have a stumbling block to gender parity (KTSMOE, 2010).

Study findings from FGDs revealed that all the 30 participants reported having given extra care to female children for being inquisitive and vulnerable as well as to encourage girl child education which in the past has been neglected by parents. In this regard, the two female key informants also explained how parents consistently show their interest in girl child education which informs their vigilance in supervision as measures to encourage parents and uphold good academic misbehavior among their students. This might be among reasons for outstanding performance of female students in the study (Table 1). Similarly, possible reason according to all the key informants associated with the marginal gap in students' academic achievement between schools may be ascribed to parents' unflinching support for the STEB centralized admission and promotion policies aimed at promoting academic excellence. While on general consensus of students' achievement, all the FGDs demonstrated high optimism for their wards' academic pursuits.

#### **4.1.2 Association of students' academic achievement with age, schools, and sex**

Associations of students' academic achievement with age of respondents, schools and sex shows positive and significant association using Cramer's V (Table 2). A positive and significant association was observed between age and students' academic achievement (0.382,  $P \leq 0.36$ ). Respondents' academic achievement was however independent of schools and gender as shown by the statistically insignificant relationship ( $P \leq 0.185$  and  $p \leq 0.202$ , respectively) of Cramer's V.

**Table 2: Cramer's V measure of associations between age, schools, and sex (n = 300)**

<b>Cross tabulation</b>	<b>Cramer's V</b>	<b>Sign.</b>
Age x Scores	0.382	0.036*
Schools x Scores	0.372	0.185 <sup>ns</sup>
Gender x Scores	0.387	0.202 <sup>ns</sup>

\*p < 0.05, ns = not significant

The age of respondents was observed to be an important factor for their academic achievement. Students do well in examinations when they are appropriately placed in their respective classes or academic level, otherwise they may lack basic skills for effective study or to be impaired by age related deficits (Newman-Ford *et al.*, 2009). Coleman *et al.* (2000) observed that as students become older, correlation between age and academic achievement diminishes. The reason for insignificant Cramer's V of schools may be because the students were borders. While, there is no association with sex and students' academic achievement because students' performances did not discriminate sex. According to Newman-Ford *et al.* (2009) gender differences had only minor impact on students' academic achievement. It is worth noting that differences exist between male and female students depending on the subject matter (Haist *et al.*, 2000; Arigbabu and Mji, 2004; Erinosh, 2005; Bilesanmi, 2006; Kolawole, 2007).

All the six (6) key informants stated that supports given by parents during PTA meetings without any discrimination of male or female schools have motivated school efforts. Similarly majority of the FGDs participants (26) revealed that the visiting day set by education policy in Katsina State has encouraged their support to education of their children within their level of resources. These levels of supports given to students at different level of parents' resources are assumed to have given differential treatment and motivation for learning among students.



## **4.2 Students' Perceptions of Family Roles Influencing their Academic Achievement in Agricultural Sciences**

### **4.2.1 Description of students' perceptions of family roles**

Study objective 2 was to assess the perceptions of students of their family roles influencing their academic achievement. The study findings show more than half (58.6%) of the respondents perceived their families as having high expectations on them which influenced their achievement. Yet, 32.3% perceived that their families had moderate expectations, while only 9.1% indicated low perceptions of their families (Table 3). The role of parent expectations of achievement is consistent with previous research which has shown a strong influence on student outcomes (Conger *et al.*, 2007; Yamamoto and Holloway, 2010). High achieving children tend to come from families which have high expectations for them without distinct differences of the socio-economic backgrounds (Trusty, 2002; Casanova *et al.*, 2007). Therefore, it can be concluded that the desire for parents to provide better educational opportunities which might influence their children's academic achievement will depend on the expectations they have for their children.

**Table 3: Respondents' perceptions of family roles influencing their academic achievement (n = 300)**

<b>Variable</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Parental expectations</b>		
High	176	58.6
Moderate	97	32.3
Low	27	9.1
<b>Parental aspirations</b>		
High	190	63.2
Moderate	85	28.5
Low	25	8.3
<b>Family obligations</b>		
High	171	57.1
Moderate	115	38.4
Low	14	4.5
<b>Family pleasing</b>		
High	178	59.3
Moderate	111	37.1
Low	11	3.6
<b>Aversive influence</b>		
High	8	2.8
Moderate	70	23.3
Low	222	73.9

The study results further show that, 63.2% of the respondents perceived their families as having high academic aspirations for them. Yet, 28.5% of them perceived their families having moderate academic aspirations, while few, 8.3% reported having low perceptions. Dieneye (2006) Urdan and Schoenfelder (2007) assert that, parents who hold high academic aspirations for their children have an important influence on their academic motivation and achievement. Hence, this implies that students' academic motives and achievement can be enhanced by parents' academic aspirations for their children.

Of the 300 respondents, 57.1% reported that their families had high obligations for them, while 38.4% indicated having moderate family obligations. Yet, few, 4.5% indicated low obligations for them. Study by Urdan and Schoenfelder (2007) show that children whose

parents were more nurturing showed eagerness of children success in examinations. This indicates that children can be directed by their parents' efforts and sacrifices to succeed academically in schools.

Table 3 shows that, 59.3% of the 300 respondents indicated that they had enjoyed high family pleasing, while 37.1% mentioned moderate, few, 3.6% indicated low family pleasing. The study findings by Rubie-Davies (2007) indicate that parents' pleasing both at home and schools can influence students' behaviour, motivation to learn and academic achievement. Therefore, it can be concluded that, when students perceive that parents show care, their behaviour and academic scores will be enhanced.

Furthermore, 73.9% of the respondents reported that they had low aversive experiences from their families. Again, 23.8% stated experiencing moderate, while only 2.3% indicated to have been experiencing high aversive experience. Aversive family influence has negative consequences on children's behaviour and schooling process (Urdu and Schoenfelder, 2007). This implies that students who come from families with low aversive influence had better home motivation and academic achievement in schools.

#### **4.2.2 Regression analysis on students' perceptions of family roles influencing their academic achievement**

To capture the direct influence of students' perceptions of family roles on their academic achievement, the students' academic scores were regressed with parental expectations, parental aspirations, family obligations, family pleasing and aversive influence. The study results of the multiple regression show that the  $R^2$  calculated was 0.873 and the adjusted  $R^2$  was 0.860 having a model constant produced at 8.844 indicating that about 86% of the variance in students' academic achievement was explained by the model. The model is

statistically significant at  $p \leq 0.001$  with a fitted  $F = 3.024$ . The standard error estimates were presented to explain the measure of accuracy of predictions for each of the independent variable. All the independent variables regressed were statistically significant and influenced students' academic achievement (Table 4).

The study findings show that parental expectation was positively related to students' academic achievement (0.906 at  $p \leq 0.022$ ). This implies that parental expectations positively influenced students' academic achievement by 0.906 units. Therefore, parents who were having high educational expectations for their children had provided proper attention and were more involved in the education of their children. Hence, it is expected that students from these families with high expectations had better educational opportunities which motivate them to learn both at home and in school. This study finding corroborates with study finding by Galindo and Sheldon (2012) who found a positive relationship between parental educational expectations and students' achievement. Zhan (2006) on the other hand indicates that parents with higher expectations for their children are more likely to set higher standards for their children's schooling and social functioning than parents with lower expectations this make them to study hard. Lippman *et al.* (2008) mentioned that most of these parents were mostly in the high income class.

**Table 4: Multiple regression analysis on respondents' perceptions of family roles influencing their academic achievement (n = 300)**

Variables	Coefficients	Std. error	t	Sign.
Parental expectations	0.906	0.519	2.439	0.022**
Parental aspirations	0.983	0.576	1.781	0.013**
Family obligations	1.204	0.452	2.744	0.011*
Family pleasing	1.126	0.515	2.512	0.014*
Aversive influence	-1.917	0.562	-1.723	0.016**

\* $p < 0.05$ , \*\* $p < 0.001$ , Constant = 8.844,  $R^2 = 0.873$ , Adjusted  $R^2 = 0.860$ , F-value = 3.024

Parental aspiration (0.983) was also positively related to students' academic achievement at  $p \leq 0.013$ . The positive coefficient implies that one unit increase in parents' aspiration for children's education, students' academic achievement increase by 0.983 units. Thus, students who came from families with high academic aspirations were more conscious and motivated to study hard in order to meet with their family wishes or aspirations.

The study finding shows that family obligation (1.204) has positive influence on students' academic achievement and statistically significant at  $p \leq 0.011$ . This implies that parents with positive and high educational obligations create academic disparities because of their moral commitment to their children's education. Dubow *et al.* (2009) and Edwards (2000) have reported that the nature and extent of parent's obligations in their children's education and learning is an important factor in explaining the differential patterns of students' achievement. Study on multiple regression shows that family obligation has the strongest positive influence on students' academic achievement among other factors in the model.

Family pleasing (1.126) in Table 4 shows positive influence on students' academic achievement at  $p \leq 0.014$ . This implies that for every one point higher on family pleasing, students' academic achievement scores increase by 1.126 units. This shows that one unit family pleasing keeping other factors constant can increase students' academic achievement by 1.126. Rubie-Davies (2007) mentioned that parents who pleased their children both at home and schools increase their chances for being happy, increase motivation and high academic achievement.

The study result further shows that aversive influence (-1.917) has a strong negative influence on students' academic achievement and statistically significant at  $p \leq 0.016$ .

This implies that being under aversive influence has a notable negative influence on students' academic achievement. It shows that one unit increase in aversive experiences from home decreases academic achievement by -1.917 units. If parents put their children under high aversive treatment or maltreatment, their academic achievement decreases. Study result by Todd and Wolpin (2003) affirm that students who are under aversive influence or maltreatment score lower ratings in examinations.

In total, variables parents' expectation, parents, aspiration, parents' obligation and family pleasing increase students' academic achievement, while aversive parents' behaviour decrease it. Therefore, understanding family influence will help in improving students' academic achievement particularly those students living in less advantaged circumstances. Hence, to harvest human motivation such as creativity, human potentials and positive academic achievement, Clay (2002) stressed that a hierarchy of individual's needs; human choices, capacity for self-direction, individual's feelings and understanding of his or her own development should be targeted. This can be achieved through effective family roles which motivate children's educational and achievement motives. The key informants noted that their school guidance and counseling units have been handling issues of individual and family differences with a view to improve students' academic engagements. Similarly, parents during FGDs observed that their children as adolescents require being motivated for good learning behaviour. However, they noted that not all parents can do that either for being careless or they do not have the much needed resources and time.

#### **4.2.3 Hypothesis testing**

Multiple regression analysis in Table 4 show the regression model significant at  $p \leq 0.001$  and all the variables entered into the model are also statistically significant. Therefore, the

study null hypothesis which states that there is no significant influence of family roles on students' academic achievement is rejected.

### **4.3 Description of Socio-economic Factors Associated with Students' Academic Achievement**

#### **4.3.1 Descriptive analysis of students' family socio-economic factors**

The aim of this study objective 3 is to describe the association of family socio-economic factors and students' academic achievements which were educational level of parents, major occupation of parents, family feeding, health care and family residence. These family socio-economic factors were equally considered important because of their influence on other family factors such as family resources as well as family welfare and education.

The study results indicated that of the 300 respondents, 79.3% of their parents had tertiary education, while 11.7% mentioned to have attained secondary school education, and 5.3% reported to have not attended formal schooling. Only 2% of the 300 respondents indicated that their parents had attended primary school education. Yet, few respondents 1.7% said that their parents had mass literacy education (Table 5). The study findings showed that 95% of the parents were literate, which corroborate with findings by Hunt (2003), who found a high proportion of educated parents who were more committed to educate their children. Chen (2009) asserts that parents' education is an important key indicator of children's academic achievement.

Hence, this study finding on parent education implies that parents' high educational attainment could increase children's learning activities both at home and school. This was also evident in the focus group discussions (FGDs) with parents who demonstrated interest in their children's education, even the uneducated parents showed their readiness to participate in the Katsina state mass literacy programme. Also, the school principals

interviewed indicated that majority of the educated parents made regular visits and contacts to schools. However, according to KTSMOE (2010), one major challenge of education in Katsina State is the teeming number of out of school children. Several reasons that account for this phenomenon include rapid population growth and parents' apathy towards western education particularly in the rural areas. This study result further revealed that many uneducated parents in Katsina State are still indifference to western education.



**Table 5: Distribution of respondents' family socio-economic factors (n = 300)**

<b>Variable</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Parent educational level</b>		
No formal education	16	5.3
Mass literacy	5	1.7
Primary education	6	2.0
Secondary education	35	11.7
Tertiary education	238	79.3
<b>Total</b>	<b>300</b>	<b>100</b>
<b>Parent major occupation</b>		
Farming	34	11.3
Craftwork/artisan	7	2.3
Commercial trading	48	16.1
Civil servant	208	69.3
Technocrat	3	1.0
<b>Total</b>	<b>300</b>	<b>100</b>
<b>Family feeding</b>		
Always	27	9.0
Usually	135	45.0
Sometimes	85	28.3
Rarely	41	13.7
Never	12	4.0
<b>Total</b>	<b>300</b>	<b>100</b>
<b>Family health care</b>		
Always	134	44.7
Usually	111	37.0
Sometimes	25	8.3
Rarely	5	1.7
Never	25	8.3
<b>Total</b>	<b>300</b>	<b>100</b>
<b>Family residence</b>		
Urban	162	54.0
Semi-urban	73	24.3
Rural	65	21.7
<b>Total (s)</b>	<b>300</b>	<b>100</b>

The purpose of studying occupation of parents was to determine the economic activities done by parents and see if it influences the support of students' education. Of the 300 respondents, most, 69.3% indicated that their parents were civil servants, while 11.3% mentioned them as doing agricultural activities, and 16.1% reported to be commercial traders (Table 5).

All the respondents reported that their parents used their earnings to pay for their educational expenses. Also, during the FGDs most of the (30) parents stated that they strived to educate their children to earn a better future. For instance, Sahluni (2007) on parents' occupation concluded that the main goal of parents' occupation is to facilitate an individual's means of livelihoods and enable him/her to become a good human being. Meklin and Caines (2008) stated that the economic fortunes of parents influence academic success of their children through support for education. Further investigation revealed from key informants stated that majority of students in their secondary schools are mainly children of civil servants, self-employed and children from lower socio-economic groups. Therefore, parents being in the mainstream of civil service and low level income occupations, there may be marginal difference in their socio-economic status which might have resulted in the marginal disparity in the student's academic outcome.

Of the 300 respondents, 54% reported that their homes were food secured, while 28.3% said that they were relatively food secured (Table 5). Yet, of all the respondents, 45% mentioned that their homes had adequate food. Still, 28.3% indicated that sometimes their homes had adequate food, while, few 13.7% of the respondents reported that rarely their homes had adequate food. Similarly, 9% and 4% of the respondents mentioned that their homes had always adequate and never had adequate food in their homes, respectively. Study findings by Sally and Olney (2006) and Pollitit *et al.* (2008) found that poor

nutrition in early childhood is linked to poor cognition, school achievement, and bad behaviour in children. The latter conclude that the provision of food may both benefit students emotionally and enhance their capacity to work on school tasks. The report further noted that when a child gets proper nutrition and health care, the ability to interact with and take optimal advantage of the resources offered by any formal or information learning environment is enhanced. These assertions are supported by the humanistic theory of this study. Therefore, parents who afford nutrients availability for their children at home and school enhance their talents and academic achievement.

Of the 300 respondents, most, 81.7% indicated that they enjoyed enormous family health care, 44.7% reported that they always had adequate family health care (Table 5). Also, 37% mentioned that they usually enjoyed adequate family health care. Yet, few 8.3% said that they sometimes received adequate family health care. Also, another 8.3% of the respondents said that they never received adequate family health care, while, 1.7% of them reported to rarely getting adequate family health care. Health is an excellent indicator for the overall well-being of an individual and a primary predictor and determinant of academic success (Goddard, 2003; Abdullahi, 2011). This is consistent with Barry (2006) finding that child's welfare at school is based on the rights of the child to adequate living standards (shelter, nutrition, healthcare, water, sanitation services) that are vital for child's growth and development. In conclusion, provision of proper child health care contributes to wellbeing both at home and in school.

Over half, 54% of the respondents reported that they lived in urban areas, 24.3% said in semi-urban areas, while 21.7% said in rural areas (Table 5). Further, FGDs results indicated that majority of the 30 parents originated from rural areas and migrated to urban areas to search for white collar jobs. For instance, Bahlkani (2009) asserts that to have a

daily work in a city is easier than in rural areas. The standard of wage is also much better in urban areas than in rural. Yet, in Nigeria most people in rural areas are engaged in agriculture. This study, therefore, found that majority of respondents' parents though had better opportunities of livelihoods but majority of them were in similar socio-economic category. However, a small intervention could put such parents in a better position to enhance their children's academic achievement in agricultural sciences holding other factors constant.

These study results are supported by the social learning theory of Lave and Wenger (2005) who stated that individual's actual achievement behaviour is influenced by their parent's characteristics, involvement and expectations. This also corroborates with the humanistic theory of Lippman *et al.* (2008) who views the home as having a great influence on students' psychological, emotional, social, and economic state which influence their academic outcomes. While, Ajila and Olutola (2007) mentioned that the home affects individuals since parents are the first socializing agents in an individual's life, as well as students' level of performance in schools. Therefore, it is evident that parent's socio-economic factors can determine the students' formal schooling and their academic achievement. As Oribhabor and Okodugha (2010) put it, children from families with high socioeconomic status are better prepared for school because they have access to books, health care and school materials which encourage them in their learning. Generally, while the innate abilities of children are important, the opportunities created by the home are crucial to their development of talents. Therefore, both social learning and humanistic theories embrace this fundamental belief in motivating human potentials to facilitate access to opportunities for talent development among students is hereby referenced.

### 4.3.2 Association between family socio-economic factors and students' academic achievement in agricultural sciences

Table 6 shows association of family socio-economic factors on students' academic achievement in agricultural sciences. The strength of association between the independent variables and the dependent variable was reported using Cramer's V. Positive and significant associations were observed between parent's education (0.400 at  $P \leq 0.01$ ), parent's occupation (0.793 at  $P \leq 0.01$ ), family feeding (0.474 at  $P \leq 0.01$ ), and family residence (0.384 at  $P \leq 0.019$ ) and students' academic achievement in agricultural sciences. However, students' academic achievement in agricultural sciences was independent of family health care (0.348 at  $P \leq 0.0769$ ) as shown by the statistically insignificant relationship of Cramer's V.

**Table 6: Association between Family Socio-economic Factors and Students' Academic Achievement in Agricultural Sciences (n = 300)**

Cross tab	Cramer's V	Sign.
Parent's education x Scores (AA)	0.400	0.001*
Parent's occupation x Scores(AA)	0.793	0.000*
Family feeding x Scores(AA)	0.474	0.000*
Health care x Scores(AA)	0.348	0.769 <sup>ns</sup>
Family residence x Scores(AA)	0.384	0.019*

\* $p < 0.05$ , ns = not significant

From the study findings among the socio-economic variables, Cramer's V coefficients of parent's occupation had the strongest association with the students' academic achievement. This finding is in agreement with Adroque (2009) who asserts that students' academic achievement strongly correlates with their family expenditure and is based upon parents' characteristics regarding household income from wage earning activities. Blake

(2002) and Meklin and Caines (2008) mentioned that the economic fortunes of parents influence the academic chances of their children, however, there should be an effective dilution of available familial resources both either in small or large families.

Other strong associations observed in Table 6 are family feeding and parent's education with students' academic achievement. It had been reported that parents who are more educated generally displayed more positive values toward family welfare, family social mobility and living standard which affect their children's academic behaviour (Acharya and Joshi, 2009). Others have reported that children from large families are more likely to be under nourished and negatively affected in school activities, showing poor academic performances (Taras, 2005; Averett and Stifel, 2007; Blevins, 2009; Kaestner and Grossman, 2009). All these were indications that family socio-economic status correlate with students' academic achievement.

Another factor however with low association with students' academic achievement and family residence was observed. For instance, Adewale (2002) reported that in a rural community where family size is always on the high increase due to polygamy; nutritional status is relatively low, health problems are prevalent and children's academic performances can greatly be hindered. Bahlkani (2009) on the other hand asserts that to have a daily work in a city is easier than in rural areas. Here the standard of wage is also much better than in rural of which some is used for children's academic pursuit.

Therefore, it is evident that parent's socio-economic factors such as education, occupation, feeding and family residence correlate significantly to students' academic achievement in agricultural sciences in Katsina State, Nigeria. Similarly, all the FGDs and key informants revealed that privileged parents with better socio-economic status show greater

commitment to supplement food items, learning materials and other necessary educational needs to support their children educational pursuits which provide differential treatment and disparity in students' academic achievement.

#### **4.3.3 Interrelationship between parent level's socio-economic characteristics and students' academic achievement**

The study objective 3 further seeks to investigate the interrelationship of individual male and female parents and family level characteristics correlate with students' academic achievement. The correlation analysis regarding the relationship between the socio-economic variables and students' academic achievement are presented in Table 7. The study results show that there is a significant relationship between the predictor variables and the dependent variable at  $p \leq 0.05$ . There is a significant positive and strong relationship between the students' academic achievement and father's education (0.547 at  $p \leq 0.000$ ) and mothers' education (0.430 at  $p \leq 0.003$ ). Davies-Kean (2005) opined that increasing parental education has more permanent effect on children's achievement scores than income. Blevins (2009) reported that educated parents can provide favourable environment that suits best for academic success of their children. Study result on parents' education show that fathers' education has more strong support than mothers' education. However, it implies that mothers' education contributes significantly to children's education, thus, children's education will be better with joint parents' education and efforts. Williams (2003) suggest that more educated parents practice greater involvement in their children's education.

**Table 7: Correlation matrix of parents' characteristics and students' academic achievement (n = 300)**

<b>Variables</b>	<b>Pearson correlation</b>	<b>Sign. (2-tail)</b>
Fathers' education	0.547	0.000**
Mothers' education	0.430	0.003**
Fathers' occupation	0.351	0.000**
Mothers' occupation	0.028	0.076 <sup>ns</sup>
Residence in Urban areas	0.259	0.041*
Residence in Rural areas	-0.062	0.127 <sup>ns</sup>
Living in Rent housing	-0.318	0.007**
Living in Private housing	0.197	0.045*

\*p < 0.05, \*\*p < 0.001, ns = not significant

Moderate and positive relationship was observed with fathers' occupation (0.351 at  $p \leq 0.000$ ) and students' academic achievement. However, there was no significant relationship between mothers' occupation (0.028 at  $p \leq 0.076$ ) and students' academic achievement. Fathers' nature of occupation determines the take home income of the family in most cases. Hence, more family financial resources linked to parents' occupation, often imply increased learning opportunities both at home and in school. Students' academic achievement in this study recognized fathers' occupation most important and significant factor than mothers' occupation. Perhaps, this arises from cultural belief in the study area which empowers men and gave them more responsibilities. Majority of the women in the study area were mainly leaving as housewives with small enterprises operating from homes. However, study results on parents' education and occupation imply that fathers' characteristics (education and occupation) have a stronger influence because men usually have stronger attachments to the labour market particularly in the Northern Nigerian context, while mothers' characteristics (particularly education) are important because of their greater role in children's socialization. Unfortunately, the attitudes of political and cultural leadership in the study area to women empowerment have not supported their full participation in governance and investment opportunities which could have contributed to



joint family education support. This must have been one of the reasons why mothers' occupation is not statistically significant in the study.

There was a weak and significant relationship between students residing in urban areas (0.259 at  $p \leq 0.041$ ) and their academic achievement. However, there was no significant relationship between academic achievement and students living in the rural areas (-0.062 at  $p \leq 0.127$ ). The study findings further revealed that although students' academic achievement was moderately significant and negatively related with students living in rent houses (-0.318 at  $p \leq 0.007$ ), there was weak and positively significant relationship with living in private housing (0.197 at  $p \leq 0.045$ ). Report shows that low students' academic achievement is associated with students' living in public housing than in private housing (Sparkes, 1999). Reasons were probably due to the effects of overcrowding, poor access to resources, lack of social amenities and neighbourhood influence (Jensen and Seltzer, 2000; Herd, 2007; Hunt, 2007).

#### **4.4 Family Structure Composition and Students' Academic Achievement**

##### **4.4.1 Descriptive analysis of family structure composition**

The study objective 4 seeks to compare family structure composition and students' academic achievement. Most students' difficulties at school are due to problems caused by parents and family structure composition is one of them. This view agrees with the report of OEDD/UNESCO (2003) that family characteristics are a major source of disparity in students' educational outcomes. The study results in Table 8 revealed the family structure composition of student respondents and show that 45 (15%) of the respondents indicated having family members/household ranging between one to five (1-5) people. Majority of them 117 (39%) mentioned that their households had between 6-10 family members, while few, 53 (17.7% reported having between 11-15 family members per household

respectively. Similarly, 59 (19.7%) of the respondents stated having 16-20 household members in their families. Another 16 (5.3%) had family members between 21-25 people. Yet, few, of them 10 (3.3%) reported having household dependents 26 and above. The average household size in the study area was calculated to be 12 people per household. This figure is relatively large despite the fact that many families were monogamous. The 2006 population census in Nigeria showed that an average household size was 6 people per household with a population growth rate at 38.78%. FGDs revealed that most parents were not interested in family planning because of culture and religious belief. According to KTSMOE (2010), one major challenge of education in Katsina State is the teeming number of out of school children attributed to rapid population growth.

Study results on family size further indicated the distribution of students' academic achievement across family divides. For example, while students with low family members performed better (1-5, Mean 56.09 and 6-10, Mean 57.10), others with large members were having average examination scores ( $\geq 26$  Mean 53.86) even better than students from families with members in the range 11-15 (Mean 52.67) and those with range of 16-20 (Mean 51.07) family dependents, even though the mean difference was small. However, students with the largest family dependents between 21-25 people per household had earned the lowest academic achievement scores (Mean 48.91). The study results suggest that though having few household sizes encouraged good academic performance however, supports given to students whether in large or small families increased their academic achievement chances. Studies show that parents with few family members per household appear to have more intellectual and educational advantages to their children. For instance, Nyamwange (2012) revealed that children from large families were found to do worse than children from smaller families. The reason being that the latter's families gives their resources (time, money) for their children's academic pursuits. Hence, given the study

results that most parents had a large family size, we expect that there were negative effects on children's achievement in agricultural sciences for which, students from large families could have done better. This argument lends its support to the humanistic theory, which asserts that human beings are motivated by various family factors to achieve a given goal. Thus, "the good do good because the good is rewarded and the bad do bad because the bad is rewarded" (Skinner, 1948).

**Table 8: Comparing family structure composition and students' academic achievement in agricultural sciences (n = 300)**

<b>Variables</b>	<b>Frequency</b>	<b>Mean</b>	<b>Std. deviation</b>
<b>Family size</b>			
1-5	45	56.09	8.484
6-10	117	57.10	8.372
11-15	53	52.67	8.710
16-20	59	51.07	6.373
21-25	16	48.91	4.692
≥26	10	53.86	4.425
<b>Dependency ratio</b>			
1-5	162	58.86	6.859
6-10	129	53.42	4.416
11-15	8	46.01	3.867
≥16	1	55.08	-
<b>Parent age category</b>			
1-5 years	22	64.26	5.479
6-10 years	233	52.17	3.952
≥11 years	45	43.38	2.785
<b>Sibling order</b>			
≥1-2 years	85	57.31	8.103
>2-3 years	150	55.12	8.493
>3-4 years	45	51.21	6.889
>5 years	20	49.49	8.345
<b>Family type</b>			
Monogamous	157	59.19	6.414
Polygamous	143	47.34	4.873
<b>Total</b>	<b>300</b>	<b>53.30</b>	<b>8.346</b>

Study results on dependency ratio show that 162 (54%) of the respondents had family siblings 1-5 members concurrently schooling with the respondents. Of the 300 respondents, 129 (43%) reported having between 6-10 siblings schooling together. Yet, eight of them stated having 11-15 siblings and only one respondent had 16 or greater than 16 siblings who are schooling under on household head. Further, the mean academic achievement scores of students in Table 8 show those students having few siblings schooling together performed better than those with large number of siblings in school. For instance, the results show that students with siblings 1-5 schooling had mean scores (58.86) higher than  $\geq 16$  (Mean 55.08), 6-10 (53.42) and 11-15 (46.01) respectively. Whiteman *et al.* (2009) reported that siblings' academic achievement can be positively or negatively correlated. Generally, sibling research suggests that relationships between sibling structure variables and children's academic achievement can be attributed to differences in family background, variations in family economic resources, and variations in the quality of parent-child interactions. Interviews during FGDs show that many parents had children at different levels of education which demand that parents cater for their educational and welfare needs to succeed academically. The key informants stated that this has been a herculean task for parents with many children schooling and children from such families a time have to wait for parents to come or send them their school needs beyond the time they needed such items.

Of the 300 respondents, 22 (7.3%) their parents had between one to five years age difference. Majority of them (77.7%) belong to families with parents having age gap of six to ten years. Yet, only 45 (15%) of the respondents' parents had age gap eleven and greater than eleven years. The study found that students in families with smaller age gaps (1-5, Mean = 64.28) were having favourable academic scores than those in middle (6-10, Mean = 52.17) and larger age gaps ( $\geq 11$ , Mean = 43.38) respectively. Marjoribanks (2003)

mentioned that age difference between parents was modestly related to academic achievement of their children. Fathers' greater experiences compared to that of mothers are argued to exercise good home discipline as opposed to the smaller gap but who may be active. Perhaps, findings of this study suggest that smaller age gaps of fathers over that of mothers enable them to share better ideas, have more autonomy, closer relationship and commitments which positively influenced their children's education and academic achievement. Again, aged parents particularly fathers being less active were likely to have left most of their responsibilities to their wives or older children who are either weak or might have other household tasks which affect children's care both at home and school.

Study findings in Table 8 show that out of the 300 respondents, 85 (28.3%) were born after one or in two years interval in their families, while majority of them 150 (50%) were born either after two or within three years interval. Again, 45 (15%) of the respondents were born within an interval of more than three and or four years. Yet, few, 20 (6.7%) of the respondents were born in a birth interval of more than four years. When the group mean scores were considered, students who were born within a period of greater than one and in two years (Mean = 57.31) had outperformed other students. They were followed by students of birth interval period of between greater than two or within three years (Mean = 55.12) and greater than three or within four years interval period (Mean = 51.21) respectively. The lowest academic achievement scores were obtained by students born with birth order interval of more than four years (Mean = 49.49). The study findings suggest that students in the study area were sibling dependents, thus during secondary school age, siblings who are close in age may develop sibling affiliation than those with wide gap, this might encouraged a similar sibling performances in school through sibling intimacy, elder sibling support, and younger sibling to copy older sibling among others as against wider age gap who may exercise more authority on the young ones.

The study findings further show that 157 (52.3%) of the respondents indicated that they belonged to monogamous families, while 143 (47.7%) belonged to polygamous families. The study again found that students in monogamous families performed better (Mean = 59.19) than those from polygamous families (Mean = 47.34). However, it was noted during FGDs that most parents in the area marry more than one wife because of their cultural and religious belief. Akanle (2007) stated that family type is a significant factor in influencing students' academic achievement. However, Marks (2006) asserts that some countries show stronger effects for family type than in other countries. For instance, Marks says the negative effects on student's academic achievement of different family types tend to be stronger in more economically developed countries. Hence, this study result from Nigeria being among developing nations has denied that negative effects are stronger in more economically developed countries. However, students' academic achievement may largely depend on whether or not students are adequately cared and motivated by their parents. These views conformed to social learning-cum-humanistic theories of this study, which affirm that families of different socio-economic status create different learning environment that are affecting students' academic achievement which largely depend on parents' commitment and support to education of their children.

#### **4.4.2 Comparative analysis of family structure composition between male and female students and their academic achievement in agricultural sciences**

The study also investigated family structure and students' academic achievement base on students' sex. Study findings in Table 9 showed statistically significant difference between students' academic achievement and family type at  $p < 0.001$  for both male and female students (male  $t = 3.404$  and female  $t = 3.459$ ). The difference in students' academic achievement due to family type implied that children from monogamous families are belief to enjoy good interpersonal relationships with their parents and siblings and they are

provided with the necessary materials both at home and in school thus, encourage their learning process and academic achievement. While, children in polygamous families are more likely to experience more emotional disturbances and this affects their achievement in school. This conforms to study findings by Uwaifo (2008), Tenibiaje (2009) who reported that harmonious home environment build emotional stability of children both at home and school which increase their chances for high academic achievement.

However, study results in Table 9 show that there is no statistically significant difference in students' academic achievement and family size at  $p < 0.05$ . Similar result was also found in dependency ratio at  $p < 0.05$ . However, during FGDs with parents they affirmed having strong determination to support their children's education with the level of family resources. According to Blake (2002) effect occurs because of how allocation of family resources to children whether in small or large families. Among the divisible resources for children in a given family may include the parents' time, attention, and ability to interact with children. Others are the ability to provide personal and educational needs, living space, travel, specialized instruction such as extra lessons and medical care. Moreover, Skousen (2004) observed that children with many siblings in schooling may have more pressure to fulfill all parental dreams and ambitions. Perhaps, parents with many children in school do recognize the differences among siblings. However in this regard, parents should devise an equitable division or disposal of family resources, time and attention devoted for children's personal and educational needs in order to increase their chances for high academic attainment.

**Table 9: Independent t-test analysis of differences in male and female students' academic achievement based on family structure composition (n = 300)**

Variable	Gender	n	Mean	Std. dev.	Std. error	t	Sign.
Family type	Male	200	54.61	0.499	0.035	3.404	0.001**
	Female	100	52.02	0.476	0.048	3.459	0.001**
Family size	Male	200	54.46	6.728	0.476	0.148	0.882 <sup>ns</sup>
	Female	100	52.21	6.384	0.635	0.151	0.880 <sup>ns</sup>
Dependency ratio	Male	200	52.91	2.230	0.158	0.957	0.339 <sup>ns</sup>
	Female	100	53.71	2.324	0.232	0.944	0.347 <sup>ns</sup>
Sibling order	Male	200	50.51	4.432	0.313	1.949	0.052 <sup>ns</sup>
	Female	100	56.10	3.275	0.327	2.151	0.032*
Parent age category	Male	200	54.60	2.059	0.146	1.980	0.049*
	Female	100	52.00	1.942	0.194	2.019	0.045*

\*p < 0.05, \*\*p < 0.001, ns = not significant

The study results further indicated that there is statistically significant difference between female students' academic achievement and sibling order (female  $t = 2.151$ ) at  $p < 0.05$  while male students did not show any statistical significant difference with sibling order ( $t = < 1.96$ ). It can be claim that short birth intervals between children are related to lower academic achievement among female students than in male students. Implying that with sufficient birth intervals as reported earlier in Table 8, the birth order pattern may reverse the trend and increase academic chances of female students. This study results indicate that female students were more sensitive to sibling order than male students. Whiteman *et al.* (2009) found that siblings' academic achievement can be positively correlated or differ according to age, gender or school environment. Bandura's social learning theory adopted in this study posits that individuals may learn certain behaviors by observing other individuals perform those behaviors (Bandura, 2001). Thus, this proposition portrays female students as weak in sibling behavioural interaction compared to male students in the study area.



Yet, there is statistical significant difference between age category of parents (male  $t = 1.980$  and female  $t = 2.019$  at  $p < 0.05$ ) and students' academic achievement. Earlier studies on parental age and school achievement found no evidence of a decline in school performance among children born to older fathers (Malaspina *et al.*, 2005; Saha *et al.*, 2009; Magnuson and Berger, 2009). Svensson *et al.* (2011) concluded that parental age has no strong effect on children scholastic abilities. In all, the mean academic scores of students has suggest that students as humans did respond to whatever situation they are exposed to on the basis of the situation's influence on their attitude to learning as asserted by the propionates of both the social learning and humanistic theories. However, to increase students' academic achievement under given circumstances with family structure composition, children need proper and adequate care from their parents.

#### **4.5 Study Results on Effects of Parents' Predisposition to Education on Students'**

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##### **4.5.1 Parents' level of predisposition to education of their children**

Study results in Table 10 show that out of the 300 respondents, only 30 (10%) had home libraries for educational uses. However, majority of them (75.3%) were provided with learning materials by their parents. Yet, 44 (14.7%) of the respondents rely more on schools libraries for their studies. Researchers have reported that some dimensions of parental support in terms of learning materials may have more visible effects on students' academic achievement than others (Downey, 2002; Malibiche, 2011). It suggests that those students who had adequate learning materials may have performed better than their counterparts who lack them. The study findings further indicated that more than half of the respondents (58.4%) were visited by their two parents or guardians. Another 67 (22.3%) of the respondents had visits from their fathers or male guardians only and only few, 58 (19.3%) had visits from their mothers or female guardians only. It is worth noting that

students with two parents working in a supportive school visits are more likely to enjoy school and get motivated to learn than students whose parents are cut off with what is going on at school. But however, having one parent/guardian involved in school visits is better than having none at all.

**Table 10: Distribution of respondents on parents' level of predisposition to education**

(n = 300)

<b>Variable</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Resource materials</b>		
Having home library	30	10.0
Supplementary learning materials	226	75.3
Relying on school library	44	14.7
<b>Parent visits to schools</b>		
Father/or male guardian only	67	22.3
Mother/or female guardian only	58	19.3
Both parents/guardians	175	58.4
<b>Provision of pocket money</b>		
≤N500 only	71	23.7
>N500-N1000 only	202	67.3
>N1000 only	27	9.0
<b>Extra lessons</b>		
During vocation at home only	186	62.0
Both at home and school	31	10.3
Not at all	83	27.7
<b>Social amenities</b>		
Recreational/electronics gadgets	46	15.3
Electronics gadgets	198	66.0
Little or no gadgets at home	56	18.7
<b>Cosmopolitaness</b>		
Educational places	95*	23.3
Leisure activities and places	104*	25.5
National/state and amusement parks	209*	51.2

(\* represent multiple responses)

Table 10 also shows that 71 (23.7%) of the respondents received less than or equal to N500.00 as pocket money monthly. However, most of them 202 (67.3%) had received more than N500.00 to N1000.00 per month as pocket money. Only few of the respondents had reported to have received more than N1000.00 per month as pocket money.

Furthermore, the study results indicated that more than half of the respondents 186 (62%) reported to have received an organized extra lessons at home during vocation. While few, 31 (10.3%) of them stated having extra lessons both at home and school. Similarly of all the 300 respondents, 83 (27.7%) mentioned not to have been engaged in any extra lesson organized by parents. Mestry and Grobler (2007) reported that parental involvement like engagement of children in private lessons and extra-curricular activities increased academic success. Thus, students who received extra lessons both at home and in school are assumed to have better chances for an excellent performance in their examinations since they might be better prepared through organized extra lessons.

Results on availability of social amenities show that, most of the respondents 198 (66%) stated having electronics and other gadgets in their homes. And, 56 (18.7%) of the respondents had little or no social amenities at home. Yet, few, 46 (15.3%) mentioned to have recreational and electronic gadgets in their homes. Again more than half of the respondents, 203 (51.2%) visited parks with their parents during vocation. Similarly, 105 (25.5%) of the respondents had visited places like beach for leisure activities and only 92 (23.3%) of them had visited educational places during vocation respectively. Freijo (2006) stated that various aspects of the family economic, social and cultural conditions such as social support have a consistent impact on the literacy performance of students in all countries. Students whose parents have given them such opportunities and who are exposed to more educational, social and cultural resources at home tend to have higher levels of literacy performance. Similarly, parents may negatively affect their children's academic achievement by denying them access to such vital resources (Jeynes, 2002; Majoribanks, 2003; Eamon, 2005). Therefore children perform poorly in school work or even drop out of school, when they are deprived of essential school needs.

#### 4.5.2 Multiple regression analysis involving parents' predisposition to education and students' academic achievement

The study objective 5 further identifies the effects of parents' predisposition or involvement in education on students' academic achievement in agricultural sciences. Table 11 shows multiple regression analysis of the independent variables (parents' predisposition to education) that affect students' academic achievement (dependent variable). The findings of this study show that the independent variables regressed significantly add to the predictive ability of the regression model on students' academic achievement. The model has an  $R^2$  (0.881) with an adjusted  $R^2$  (0.878) implying that 88% of the total variations in students' academic achievement was accounted for by the independent variables. The F statistic (360.448) was also reliably fit and statistically significant at  $p \leq 0.000$  confidence level. The standard error estimate (2.912) shows the measure of precision for the model and with which the regression coefficients of the independent variables were measured. Hence, it gives the measure of accuracy of the predictions for each of the independent variable in the model. Still, based on the p-values presented in Table 11, of the six independent variables, four of them were statistically significant at  $p < 0.05$ .

**Table 11: Multiple regression analysis showing effect of parents' predisposition to education on students' academic achievement (n = 300)**

Variable	Coefficients	Std. error	t	Sign.
Constant	32.058	0.884	36.258	0.000**
Resource materials	0.902	0.128	7.060	0.000**
Parent visits to schools	4.875	0.512	9.529	0.000**
Provision of pocket money	0.001	0.000	3.287	0.001**
Extra lessons	1.551	0.495	3.135	0.002**
Social amenities	-0.018	0.014	-1.341	0.181 <sup>ns</sup>
Cosmopolitaness	0.046	0.100	0.466	0.642 <sup>ns</sup>

$R^2 = 0.881$ , Adjusted  $R^2 = 0.878$ , SE = 2.912, F = 360.448, \*\*  $p < 0.001$ , ns = not sign.

Table 11 also shows that provision of resource materials (0.902) was statistically significant at  $p \leq 0.000$ . The coefficient of determination of the variable had positive effect on students' academic achievement. It implies that one unit increase of resource materials by parents increased students' academic achievement by 0.902 units. Academic success can be achieved when family resources are accessed through supportive learning materials/resources such as books, school uniforms, home computers, play kits/coy and writing materials. This finding corroborate with findings by House (2002), Marjoribanks (2003) and Oribhabor and Okodugha (2010) who found that different family social status determined the type of support children received to meet their personal and educational needs. These differences create disparity in academic achievement among students in school. During FGDs parents noted that buying necessary learning materials for children motivate their learning capacities. However, key informants reported that some students rely more on school libraries for learning materials. This position was supported by 19 FGDs participants who stated lack of money, large number of dependents in schools and less care attitudes of some parents being the main reasons why some parents could not provide the necessary learning materials for their wards. This situation may have had negative effect on students' psyche to academic motivation and academic achievement.

Still, parent visits to schools was statistically significant and positively related to students' academic achievement (4.875 at  $p \leq 0.000$ ). This indicates that parent visits to school increases students academic achievement by 4.875 units as parents holding other factors as constant. Yet, FGDs with parents showed that majority of the 30 parents visited schools on visiting day and other days without receiving calls from teachers or school authorities. Further, interviews with key informants reaffirmed this position of some parents making regular visits to their wards. Although findings of this study supports that parents' school visit increased significantly students' academic achievement, in contrast Desforges and Abouchaar (2003) deny by saying that parents' contacts with the schools do not have much impact on students' academic achievement.

The study findings on provision of pocket money had a coefficient of 0.001 at  $p \leq 0.001$  and a positive effect on students' academic achievement. This means that units increase in pocket money caused increase in student's academic achievement by 0.001 units. Key informants in the study observed that parent's financial assistance increased students' happiness, hard work and giving better chances for improved academic achievement. Perhaps financial support a child gets from parents' influences his/her consciousness, which reflects in academic achievement. Hence, more family financial resources, which are often associated with parents' occupation and educational attainment, often imply increased learning opportunities both at home and in school. The study findings reported by Fan and Chen (2003), Desforges and Abouchaar (2003) also reported that parental support such as financial assistance positively correlates with students' academic achievement. However, since pocket money positively increased academic achievement thus, parents are required not to exceed the limits set by school authorities but at least only adequate amount within their level of financial resources. All the key informants mentioned that some parents exceed such limits which often caused some disciplinary problems like sneaking out to town, smoking and theft.

The study findings further show that variable extra lesson (1.551 at  $p \leq 0.002$ ) was positively and statistically significant with students' academic achievement. The finding suggests that one unit increase in giving extra lesson increased students' academic achievement by 1.551 units. Perhaps organizing extra lessons by parents contribute to supplement teachers' efforts for making students' better understanding of subject matter.

Furthermore, the study results revealed that social amenities (-0.018 at  $p \leq 0.181$ ) and cosmopolitaness (0.046 at  $p \leq 0.642$ ) had no direct effect on students' academic achievement in agricultural sciences. However, this is not to say that they do not have an

effect. Basically their effects are not significant, especially in the presence of the other factors. Parents are essentially of primary influential importance on their children's education. Consequently, children who do not have the support of their parents who value education, they will not take on the necessary steps to achieve better results in their examinations. Hence, parents need to be actively involved in the process of their children's education to maintain a high value of academic excellence. Thus, strong support for children is far better than no or lack of support from parents.

Overall results from FGDs show that parents/guardians meet their children school expenses for better access to learning opportunities by even applying other means to raise money needed which show their commitment, a task which has been difficult they stated. In conclusion, the study findings have underscored the relevance of social learning and humanistic theories for explaining the effect of family factors and their involvement on students' academic achievement. The home as an immediate environment of the learner therefore had great influence to learner's achievement behaviour (Vygotsky, 1978; Lave, 1988; Bandura, 1996; Gardner, 2004; Lave and Wenger, 2005). Theories affirm that the behaviour of students is influenced by both the home environment and psychological factors. Theories developed by these authors hold that social interaction and collaboration are essential components of the situated learning where learners are motivated and reinforced by people around them.

## **4.6 Determinants of Home Background Factors and Students' Academic**

### **Achievement in Agricultural Sciences**

#### **4.6.1 Response of students' sex on effect of independent variables on their academic achievement**

Table 12 shows the interrelationship of effect between the independent variables and students' academic achievement based on sex by means of discriminant function analysis with overall significant relationship at  $p < 0.05$ . The mean score value for male students was (0.33, N = 200) and female students (0.67, N = 100). The model was fitted at (s.d. = 0.955) for male students and (s.d. = 1.085) for the female students and cross validated at 62.3%. The family variables were significantly considered in their descriptive interrelationship with students' gender based on their canonical correlation coefficients. Among the family variables that were statistically significant in their descriptive interrelationship when pooled in group were; parents' education (0.352), parents' occupation (0.683), family feeding (0.620), family type (1.269), parents' visits to school (1.113), age category of parents (0.392) and extra lesson (0.326). These study findings imply that students in Katsina State were distributed among different family characteristics, family interest and support which suggest the value of education at various family levels.



**Table 12: Standardized discriminant function coefficients of male and female students' interaction with family factors (Male n = 200, Female n = 100)**

<b>Variables</b>	<b>Coefficients (Male)</b>	<b>Coefficients (Female)</b>	<b>Coefficients (Group)</b>
Constant	-161.801	-157.216	-4.732
Parent's education(x <sub>1</sub> )	1.374	1.389	0.352
Parent's occupation(x <sub>2</sub> )	23.176	23.862	0.683
Family feeding(x <sub>3</sub> )	2.638	2.016	0.620
Health care(x <sub>4</sub> )	0.133	0.137	-0.004
Dependency ratio(x <sub>5</sub> )	1.998	2.006	-0.008
Religious factor(x <sub>6</sub> )	2.223	2.217	0.036
Family type(x <sub>7</sub> )	7.425	6.150	1.269
Family size(x <sub>8</sub> )	0.366	0.376	-0.010
Sibling order(x <sub>9</sub> )	0.286	0.230	0.056
Age category of parent(x <sub>10</sub> )	12.109	12.316	0.392
Resource materials(x <sub>11</sub> )	3.457	3.272	0.184
Parent visit to school(x <sub>12</sub> )	10.022	10.266	1.113
Pocket money(x <sub>13</sub> )	0.001	0.001	0.001
Cosmopolitaness(x <sub>14</sub> )	0.858	0.733	0.075
Extra lesson(x <sub>15</sub> )	9.312	9.640	0.326
Place of residence(x <sub>16</sub> )	4.102	3.883	0.219
Area of residence(x <sub>17</sub> )	4.357	4.561	-0.203
Residential type(x <sub>18</sub> )	4.143	4.154	-0.011
Social amenities(x <sub>19</sub> )	0.264	0.241	0.023

Significant at  $p < 0.05$

However, when the variables were disaggregated into gender type, strong interrelationship was observed in variable parents' occupation (male 23.176 and female 23.862) implying having more influence on female students than male students. It suggests that parents might have spend more of their income earnings from their occupations on female children which made them do well in schools otherwise female students may have better ways to utilize family resources. Similarly, age category of parents (male 12.109, female 12.316) and parents' visits to school (male 10.022, female 10.135) contributed more to female students' academic achievement than their male counterparts. These study results might not be unconnected to the views of the study key informants who reported parents having more regular visits to female schools. Similar finding was observed with extra lessons

organized for children (male 9.312, female 9.640). According to some empirical studies, the family background variables that most influence the use of privately organized lessons include household income, household expenditure, parental education, and whether the household lives in an urban area (Assaad and El-Badawy, 2004; Kim and Lee, 2004; Tansel and Bircan, 2006; Dang, 2007; Kim, 2007). In contrast, Xue and Ding (2009) report that student academic achievement is not significantly related to private tutoring. However, study findings in Table 12 indicated that male students discriminate their female counterpart on family type (male 7.425, female 6.150). This is so probably because the effect of family type on female students was no reason other than they reside more in the family house and help in house chores during vocation than their male counterparts who might have more time for revision.

Other significant variables were place of residence (male 4.102, female 3.883) implying that place of residence had contributed more to male students' academic achievement than female students. But female students were more passionate with their area of residence as indicated by the canonical coefficients of the variable (male 4.357, female 4.561) which contributed to influences their academic engagements than male students. Yet, both male and female students were having almost similar effect from their residential type (male 4.143, female 4.154) and religious involvement (male 2.223, female 2.217). McCullough and Willoughby (2009) stated that religiousness within a family is associated with higher self-regulation and self-control within an individual, and are important indicators of academic achievement. Equally, King and Furrow (2004) mentioned that both academic achievement and the ability to be socially competent are associated with religious involvement. Therefore, coming from a religious family is related to be successful in school by relating better with the school environment and being committed to school activities.

In addition, Table 12 shows that though resource materials (male 3.457, female 3.272) had contributed more effect on male students' academic achievement than female students. Again, female students were more affected by dependency ration (male 1.998, female 2.006), while, family feeding (male 2.638, female 2.016) contributed more on male students' academic achievement. Perhaps, female children are more costly to maintain like their needs for cosmetics and other beauty items among other things which might have informed their response to competition with other siblings. Parents' education (male 1.374, female 1.389) significantly impacted on both group members depicting to be a joint family endeavor with proportionate influence on both male and female students' academic achievement. The study results further show that family size (male 0.366, female 0.376) and cosmopolitaness (male 0.858, female 0.933) had more impact on female students than their male counterparts.

The study findings on discriminant function analysis suggest that in order to achieve more successful schooling process, socialization practices, family concerns and supports, are important cardinal principles of the family and other persons in the home setting in order to target student's academic motives to influence their academic talent, motivation and achievement behaviour and avoid gender discrimination. According to Bandura's (1977) social learning theory, human behavior is a function of the person and the environment. Glanz *et al.* (2002) stated that the person, the behaviour, and the environmental circumstances are highly interrelated. This indicates that school learning takes place as a result of interactions of children and their parents which translates into academic talents.

Therefore based on the assumption of the social learning-cum-humanistic theory of this study that students' academic achievement dysfunction every now and then might arise from gender set, provides a framework for understanding the effect of the family variables

studied on students' academic behaviour. It is on this understanding that the outstanding performance of female students and marginal mean score difference in agricultural sciences can be interpreted to the interaction of the parents' predictor variables with students as indicated by the canonical coefficients of both female and male students (Table 12). The findings of this study can be related with that of Vescio *et al.* (2005) who found that application of gender stereotype is related to female weaknesses and strengths but however, Mangal (2010) reports that girls are made to perform mostly domestic chores, hence often perform poorly in academic activities.

However, parents during FGDs noted giving more attention to female wards to encourage girl child education and this might have given them a better advantage over their male counterparts. They however stated that both male and female children were treated equally in terms of their school needs. The key informant interview found that because of different home background, there were more cases of disciplinary problems in male schools compared to female schools. This may have influence on students' academic engagement for those involved in such cases. However, the home background variables with most important effect on students' academic achievement were selected by the stepwise regression analysis as presented in 4.6.2 below.

#### **4.6.2 Stepwise regression analysis determining home background factors with strong effect on students' academic achievement**

The sub-section 4.6.2 of this research was to use stepwise regression analysis to select a good set of predictors from the students' home background factors with strong effect on their academic achievement in agricultural sciences. Study findings produced by SPSS software show the strong order of effects of the independent variables on students' academic achievement (Table 13). Of all the nineteen variables included in the model,

only nine had significant effects. The model was statistically significant at  $p \leq 0.001$  and accounted for approximately 92% of the variance of the academic achievement ( $R^2 = 0.959$ ; Adjusted  $R^2 = 0.920$ ). The constant coefficient was equal to 40.353. The standardized coefficients, standard errors, partial correlation ( $r$ ) and  $t$ -statistics as produced by the SPSS software are also presented in Table 13.

**Table 13: Stepwise regression analysis showing home background factors with strong effects on students' academic achievement in agricultural sciences (n= 300)**

<b>Model</b>	<b>Beta</b>	<b>Std. error</b>	<b>r</b>	<b>t</b>	<b>Sign.</b>
Constant	40.353	2.034	-	19.839	0.000
1. Parents visit to school( $x_{12}$ )	3.113	0.450	0.376	6.910	0.000
2. Family type( $x_7$ )	-2.083	0.427	-0.363	-4.874	0.000
3. Parents' occupation( $x_2$ )	1.482	0.431	0.275	3.442	0.000
4. Resource materials( $x_{11}$ )	0.718	0.108	0.235	6.627	0.001
5. Family feeding( $x_3$ )	0.716	0.231	0.215	3.369	0.000
6. Parents' education( $x_1$ )	0.605	0.142	0.198	4.266	0.001
7. Parent age category( $x_{10}$ )	-0.195	0.092	-0.194	2.119	0.008
8. Residential type( $x_{18}$ )	0.165	0.073	0.131	2.248	0.025
9. Pocket money( $x_{13}$ )	0.001	0.000	0.123	2.674	0.035

$R^2 = 0.959$ ,  $R^2$  adjusted = 0.920,  $p < 0.05$

#### 4.6.2.1 Parent visits to schools

Study findings show that parent visits to school (3.113.) at  $p \leq 0.000$  was the strongest home background factor with predictive capacity to improve students' academic achievement. The study result implies that parents predisposition to education of their children through visit to school was the most important indicator of students' academic achievement. Supporting this finding, Yan and Lin (2002) stated that greater parent's involvements in their children's learning process influence high academic achievement. Four of the key informants stated that students display more curiosity and desire to learning strongly after visiting days. All the key informants further noted that particularly high class parents stay much longer time with their wards up to the closing time set.

#### **4.6.2.2 Family type**

The second home background variable with strong effect on students' academic achievement was family type (-2.083) at  $p \leq 0.000$ . Table 13 indicated that family type had negative effect on students' academic achievement. In this case, increased level of family type did not increase students' academic achievement but rather decreased it. This shows that children, who came from families with large magnitude of increase rate of household size, had low academic achievement.

All the key informants reported some parents have two or more children in one school. Finding from FGDs show that majority of the parents (26) stated for instance that some of them not only have two or more children in one school but even with other children in another school. Parents with large number of household size have many family challenges such as time, family welfare and investment on education of their children which were limited. Study findings reported by Chawla (2012) show that students' academic achievement significantly correlate with factors of family type. Libiensi and Gutierrez (2008) state that identifying such factors of the family type will help parents to utilize limited resources of the family including financial resources and time more effectively. This study finding identifies family type as a risk factor on students' academic achievement which may result in students more particularly from less privileged families drop out from schools or put them on continuous academic stresses and poor academic achievement.

#### **4.6.2.3 Parents' occupation**

Study findings on parent's occupation (1.482) at  $p \leq 0.000$  in Table 13 have shown that parent's occupation was the third most determining factor which predicts effect on students' academic achievement. It is argued that occupation determines the income

earnings of parents which in turn are use for family welfare and pay educational expenses of the children. Ermisch and Francesconi (2001) and Grawe and Mulligan (2002) reported that economic resources of parents correlate significantly with children's schooling process, and their academic achievement. They concluded that children who come from families with prestigious occupations had more resources and their parents can afford to pay for extra lessons and other auxiliary educational services. Furthermore, such parents can mold the behavior of their children using pecuniary incentives to motivate their academic motives (Weinberg, 2001; Alderman *et al.*, 2001; Gordon *et al.*, 2004).

Therefore, the study findings on parents' occupation implies that parents with better occupations had better chances to influence their children's academic achievement. However, parents during FGDs stressed that majority of them being civil servants and in low income categories; it has been difficult meeting family welfare and educational needs of their children sufficiently. The key informants noted that it is possible to easily identify those students from high class families in their appearance and outstanding participation in academic activities. However, they stated that other students are very much left behind in academic activities but parental characteristics can make ways different and easier for academic success.

#### **4.6.2.4 Provision of resource materials**

The study findings further indicate that provision of resource materials (0.718) at  $p \leq 0.001$  had positively predicted effect on students' academic achievement and being the fourth strongest important home background factor. According to Jeynes (2002) parents negatively influence academic achievement of their children by denying them the provision and access to various educational materials and resources which create distress and discomfort both at home and in school. Therefore, parents who provide resource

materials to their children increased their academic achievement. The study finding underscored the need for parents providing required learning materials such as school uniform, books, writing materials, computers and other basic provisions to improve academic chances of their children. However, result of the FGDs revealed that parents were enthusiastic to buy educational needs of their children but financial resource hinder some them more particularly parents with many dependents in schools. Similarly, all the key informants noted that students who were provided with most learning materials were in forefront of school academic activities like debate and quiz. This from experience they said put such students ahead in academic outcomes among students who lack majority of the learning materials.

#### **4.6.2.5 Family feeding**

Still, family feeding (0.716) at  $p \leq 0.000$  in Table 13 was positively related to academic achievement. The study finding shows that academic achievement of students increased with better family feeding. According to Bellisle (2004) and Sorhaido and Feistein (2006) access to nutrition has been shown to improve students' cognition, concentration and energy levels. While on the other hand, Abdullahi (2011) learners who are well nourished are healthy, safe and protective. This helps to develop their mental alertness and motivate their concentration to school's activities and achieve better academic grades. Key informants noted during interview that students from affluent families rarely patronize school feeding programme since their parents bring them enough and even sometimes better than what the schools serve. While they observed that students from the less privileged families do not miss school feeding bells.



#### **4.6.2.6 Parents' educational level**

Parent's educational level (0.605) at  $p \leq 0.001$  had positively predicted students' academic achievement. Education had an important effect and an influential determinant of social status of parents which presumably influence the educational outcomes of their children. For example, Campbell *et al.* (2008) mention that students whose parents had less educational level obtained lower grades than those whose parents had higher levels of education. Moreover, parents' educational level not only impact student attitudes toward learning but also encourages their aspirations (Davies-Kean, 2005; Abdullahi, 2011). Eccles (2007) conclude that parents' educational levels were linked to child's developing academic achievement oriented attitudes and success. It can be said that parents with higher levels of education positively influence the educational outcomes of their children since they will be seen as good role models by their children. Furthermore, those educated parents they know about the needed success of their children education in such a case, are more aware of the educational requirement of their children that encourage them to be adequately involved in their academic activities which enhance their academic achievement.

All the key informants noted that more highly educated and high income parents demonstrate more concern to education of their children by providing them the necessary educational and personal needs. More so, such parents often discuss future educational aspirations with their wards during visits.

#### **4.6.2.7 Age category of parents**

Age category of parents (-0.195) at  $p \leq 0.008$  was having negative effect which implied that children whose father-mothers' age were small had shown higher level of academic scores. While, children with fathers-mothers' were having advanced age gaps had lower

level academic achievement scores. It means that as age gap between parents is widening academic achievement decreases by -0.195. It implies also that parents with more wide age gap, though may had better experience, but other parents with smaller age gap are more active, understanding, committed and enthusiastic to provide better educational guidance and opportunities to their children, thereby creating academic disparity. FGDs revealed that in many cases male parents in the study area had a wide age gap between their spouses. This was affirmed by all the female discussants who stated having their spouses being much older than them. However, FGDs agreed that spouses with fewer age gaps were more zealous to support their children because now and then such parents are more educated and working class families.

#### **4.6.2.8 Residential type**

Yet, residential type (0.165) at  $p \leq 0.025$  was also positively related to academic achievement. Ajila and Olutola (2007) stated that the home of students affects their academic chances since it is the first place of socializing an individual's life. Therefore, it can be concluded that if the home environment affects child's reaction to life situations then, his/her level of academic achievement are also affected. This is consistent with the finding of Bugembe *et al.* (2005) who assert that child welfare at school is a determinant of child retention and also incorporates the rights of children to adequate living standards (shelter, nutrition and healthcare, water, and sanitation services) that are vital for child growth and development. Bugembe *et al.* (2005) further explained that in urban and indeed the rural areas, poorest families hardly afford the cost of these social services talk less of education of their children which often led to low academic achievement and high dropout rate.

#### **4.6.2.9 Provision of pocket money**

Furthermore, study results show that provision of pocket money 0.001 was statistically significant at  $p \leq 0.035$ . Provision of pocket money had positive effect on students' academic achievement. This implies that students used pocket money to meet their basic necessities and other luxury services in school which promote their academic motives.

Although perceived religious involvement was significant during the preliminary statistical analysis, however, it did not appear in the final stepwise regression model. The study finding does not imply that the variable has no effect but did not show strong effect on students' academic achievement. For instance, Fagan (2010) stated religiousness as one of the key variable that correlate with academic success and that spiritual and religious involvement affect educational outcomes more than income does. Further, study findings with parents in FGDs showed that memorization of the Quran and religious meditations greatly helped to increase intellectual motives and academic excellence of students in school. Similarly, the key informants noted that religious engagement involves both behaviours (such as resilience perseverance, effort, concentration) and attitudes (such as motivation, optimistic learning values, zeal and interest) and noticed that most students with high religious values make outstanding performances in examinations.

Thus, from the study findings on stepwise regression, only the nine variables did significantly have important effect on students' academic achievement in agricultural sciences in Katsina State, Nigeria. Hence, parent visits to school, family type, parent's occupation, provision of resource materials, family feeding, parent's education, age category of parents, residential type, and provision of pocket money, had emerged as the strongest determinants among the home background factors studied influencing students' academic achievement in agricultural sciences respectively. These nine variables also are

hypothesized to have explained the contributions of other variables that were included in the model but did not show strong effect on students' academic achievement.

The implication of these findings indicates that, if parents wish to increase the academic achievement of their children significantly, the first family factor to consider is parents' visits to school. All aspects relating to parents' visits such as discussions, children having fun with parents during visits, gifts and basic provisions, etc, significantly motivate students' learning. This could be followed consecutively by increasing other factors that have shown positive effect on students' academic achievement with the exception of family type being the strongest risk factor and age category of parents that inversely affected students' academic achievement. The non significant variables however complement the effects of the significantly important home background factors.

These study results were consistent with the theoretical framework of this study. The social learning-cum-humanistic theories viewed the home as the major factor and conceptually associated with social indicators and educational motives of children (Chen and Kaplan, 2001). The findings are in line with Broussard and Garrison (2004) who reported that motivation is highly related to academic achievement and that learners require motivation from their home to progress well.

#### **4.6.2.10 Hypothesis testing**

The study results of stepwise regression show that the model was statistically significant at  $p \leq 0.001$  and the home background factors of students accounted for 92% of the variance of students' academic achievement. Nine students' home background variables were statistically significant as the most important factors having effects on their academic achievement. The null hypothesis which states that home background factors do not have significant effects on students' academic achievement is rejected.

## **CHAPTER FIVE**

### **5.0 CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Conclusions**

This study investigated the effects of home background factors on students' academic achievement in agricultural sciences in Katsina State, Nigeria. The specific objectives were to: (a) assess the current students' academic achievement, (b) assess students' perceptions of family roles influencing their academic achievement, (c) describe the family socio-economic factors associated with students' academic achievement, (d) compare family structure composition and students' academic achievement, (e) identify the effects of parents' predisposition to education on students' academic achievement, and (f) establish the determinants of home background factors with strong effects on students' academic achievement. The followings present the study findings of this study from where practical and policy recommendations were derived.

##### **5.1.1 The current students' academic achievement**

The study findings in objective one revealed the trends in students' academic achievement in agricultural sciences and the performance of female students had pointed for future indications in increased number of female students seeking agricultural education, self confidence in agricultural activities, and improved women economic empowerment through agriculture and related careers. It is also concluded that students' academic achievement does not discriminate sex and that agriculture could be seen as noble profession not only for being currently a men dominated career but also for women generations in the near future. Overall, students' academic achievement was generally good showing that secondary school students in Katsina State have the potential to perform well in organized national examinations in agricultural sciences. These students

can therefore join into agriculture and related courses in the Nigerian universities and elsewhere. However, there were noted marginal gaps in students' academic achievement between schools and sex implying an alarm to agricultural science instructors/teachers, parents and particularly for male students who are the majority.

Furthermore, age of students was significantly associated with students' academic achievement and therefore an important factor for academic excellence. This study finding on age implied that students did well in examinations when they were appropriately placed in their respective classes. The action of delaying or early children enrollment by some parents or school retaining students in certain class to attain a certain level of achievement could be ineffective effort to enhance students' achievement. Therefore, the national policy on education in Nigeria which stipulates three years and six years for children enrollment in pre-primary and primary schools respectively must be adhered and enforced by both parents and school authorities in order to enhance students' academic excellence. Further findings with FGDs and key informants' interview affirmed that many parents did want go along with their children's education.

### **5.1.2 Students' perceptions of family roles influencing their academic achievement**

The desire for parents to provide better educational opportunities to their children will depend on the level of the roles they played to influence their motivation both at home and in schools. Particularly, it is concluded that children of secondary school age recognized their parents' efforts and can cite their parental sacrifices as sources of motivation to succeed in their academic pursuits. The study findings in objective two show that respondents had different perceptions of parents on expectations, aspirations, obligations, pleasing, and aversive influence that influenced their academic achievement levels.

Overall, respondents perceived these roles played by their parents as high, medium or low levels.

Furthermore, these students' perceptions were measured using regression analysis to have both positive and negative influence on their academic achievement. It is expected that efforts by parents to show proper care, commitment and realistic family roles motivate children positively to be more conscious in their academic pursuits and increases chances of having favourable academic achievement among students. Perhaps, parents knowing their roles and obligations will translate into improved students' academic achievement particularly for those students living in less advantaged circumstances. The negative relationship of aversive influence in this study on students' academic achievement implied that parents are expected to show special concerns from home and try to attend to issues in such a way their children will not negatively perceived their actions. They should also not wait for the school to find out from children's actions. Set up realistic rules, conducts and routines such that they help to develop children's relationship socially rather than academic alone. It is concluded from study findings on FGDs and key informant interviews that children at this level of education are aware of the causes of actions that influence their motivation to learn.

### **5.1.3 Association of family socio-economic factors with students' academic achievement**

It is evident from the study findings in objective three that parent's socio-economic factors such as parents' education, parents' occupation, family feeding and family residence are strongly associated with students' academic achievement. It implied that socio-economic factors of parents were indicators for which parents can create favourable educational opportunities for their children's educational processes. The study further concludes that

these independent variables collectively contributed to the current students' academic achievement level. Overall, while the innate abilities of children are important, the opportunities created by the home are crucial to their development of talents.

The study results using Pearson correlation implies that mothers' education has significant contribution to children's early childhood socialization and general education. Even though mothers' education was not as strong as fathers' education thus, children's education will be better with joint parents' education. Similarly, fathers' occupation was more important and significant factor than mothers' occupation. Perhaps, this arises from cultural belief which empowers men. However, from the study results it implied that fathers' characteristics (education and occupation) have a stronger influence because men usually have stronger attachments to the labour market particularly in the northern Nigerian context, while mothers' characteristics (particularly education) are more important because of their greater role in children's socialization. In this regard, mothers' occupation potential contribution to academic achievement in particular has not been largely tapped in the study area.

The implication of these study findings therefore indicated that children's education is a team effort with a lot of the effort needing to come from the home environment. Students who were successful have parents that were attentive to their academic progress. If a student comes from unfavourable home background it hampered the use of the necessary available resources for learning. However, if the home environment is favourable it will positively influence student's life, and most importantly in his/her education.

#### **5.1.4 Family structure composition and students' academic achievement**

The study findings in objective four on family size and dependency ratio suggest that though having few household sizes encouraged good academic performance, however,



supports given to students whether in large or small families increased their academic achievement chances. But, the average family size in the study area currently posed a threat to good learning environment and academic success of students. More, so, results on age category of parents perhaps suggest that smaller age gaps of fathers over that of mothers or vice versa enable them to share better ideas, have more autonomy, closer relationship and commitments to their children's education.

Yet, study findings on sibling order suggest that students were sibling dependents, thus during secondary school age, siblings who are close in age may develop sibling affiliation than those with wide gap, this encouraged a similar sibling performances in school through sibling intimacy, older sibling support, and younger sibling to copy older sibling among others. Still, it is concluded that parents spend more of their resources on female children or otherwise female students in the study area may have better ways of utilizing their resources than the male students.

#### **5.1.5 Effects of parent's predisposition to education on students' academic achievement**

Study objective five was to describe the effects of parent's predisposition to education on students' academic achievement. It is concluded that students who had adequate and better opportunities for learning such as recreational facilities and school materials did better in examinations than their counterparts who lack them. Similarly, students with two parents working in a supportive school visits enjoyed more and motivated to learn than students whose parents were cut off with what was going on at school. But however, having one parent/guardian involved in school visits was better than having none at all. Also, students who received extra lessons both at home and in school had better performance in their examinations having better prepared through organized extra lessons. Overall, students

whose parents had given them more opportunities for educational, social and cultural resources at home and school demonstrated higher levels of curiosity and academic motivation.

Overall, parents' involvements in education were important in predicting positive effects on students' academic achievement. Therefore, better parenting and strengthened capacity in family efforts through the independent variables increase students' academic confidence, greater academic motives and high level of academic achievement. The regression model predicted that parents were essentially of primary influential importance on their children's education. Consequently, children who do not have the strong support of their parents who value education, they will not take on the necessary steps to achieve better results in their examinations. Hence, parents who were actively involved in the process of their children's education promote and maintained high level of students' motivation, academic excellence and good behaviour. Thus, strong support for children is far better than no or lack of support from parents.

#### **5.1.6 Determinants of home background factors with strong effect on students' academic achievement**

Overall, study findings on discriminant function analysis suggest that in order to achieve more successful schooling process, socialization practices, family concerns and supports for all children, are important cardinal principles of the family and other persons in the home setting. This is important in order to target student's academic motives that influence their academic talent, motivation and achievement behaviour. Both findings from key informants and parents (FGDs) implied that student's home environment helps in the construction of student attitudes and school achievement. Perhaps, parents who better contribute to their children's learning process have significant impact on their children's academic motive and learning behaviour.

It is also straight forward to establish from the study results on stepwise regression that the effect of home background factors on students' academic achievement in agricultural sciences were mainly due to combine interaction of parental predisposition to education of their children, their socio-economic and family structure attributes. It implied that measures of parental predisposition to education such as visits to school, provision of resource materials and provision of pocket money and socio-economic attributes of parents such as parents' occupation, parents' education and family feeding as well as residential type positively accounted for more of the variation in students' academic achievement than measures of other family factors studied. However, family type and age category of parents negatively predicted students' academic achievement and were risk factors in the study. But more importantly, the first determining factor to consider for increasing students' academic achievement is parent visits to schools. It can be said that parent visits to school is associated with fewer problems, reduce delinquency and increase social development and engagement such as paying attention to school routines and motivated to do well in school. Then parent visits to schools will be followed by other positively significant factors that finally appeared in the stepwise regression model. Parents and the key informants supported active parents' involvement in children's education as not only promote academic excellence but also benefit the entire school system and by extension, national development.

## **5.2 Recommendations**

Based on the study findings the following recommendations were made:

### **5.2.1 Policy recommendations for enhancing academic excellence**

The study findings show that students' academic achievement was generally good, implying meeting part of the requirement for candidates seeking admission into higher institutions of learning in Nigeria. Urgent reactivation and upgrading of agricultural and vocational training colleges by Katsina State ministry of agriculture to run Diploma and

certificate courses be done to provide opportunities for secondary school graduates who wish to study agricultural courses who are equally qualified. This measure will go along away for providing middle level manpower for both the government and private agriculture sectors. Similarly, the study findings indicate that female students have shown outstanding performances. In order to encourage more girls/women into agricultural sciences, interventions need to be design by the KTSMOE that focus not only on academic achievement but also on how to make agriculture and related careers more attractive to them. Furthermore, the STEB in Katsina State should establish more female science secondary schools to encourage girl child education and harness the potentials of female students who later could join the field of agriculture and related careers.

Secondary schools in Katsina State should start more effective counseling services to encourage and enlist the interest of students who want to join agriculture and related careers, thereby also students from the less privileged families could be motivated. Part of this career service, since age is an important factor in determining academic excellence, both parents and school administrators should ensure that their children are enlisted and appropriately placed in the right class or academic level in order to promote academic excellence. Again, school administrators must ensure that libraries, recreational, and sporting facilities in their schools are adequately equipped to assist students whose parents could not be able to provide them at home as found in the study.

Given the potentials that parents did want to go along with their children's education, there is the need by the Katsina State government to initiate a policy that will establish collaboration between government and organized private sector through family support programmes to assist parents in both small and medium scale entrepreneurship through soft loans, credit schemes and apprenticeship training. These will empower their business,

increased income earnings part of which could be used for educational support and improve family living standard of the people. More so, bulk of the parents was civil servants, it is recommended that the Katsina State government introduces a social welfare scheme to help them more particularly those parents in the middle and lower class cadre to boost their predisposition to education of their children and other family welfare.

Family type was a risk factor in the study. Household sizes in the study area may continue to increase due to perceived religious ideology and standing traditional polygamy of the people. The study therefore recommends for the Katsina State ministry of information to intensify public education through enlightenment and awareness campaigns on family planning and child spacing and devolution of family resources. Again in line with this, educational authorities at all levels should establish and equip more adult education centers for the training of illiterate parents. Otherwise the illiterate parents should be encouraged to go to school in that their literacy will enhance their children's academic achievements in schools and acquire basic skills for equitable family resource management. Under this arrangement parents could be encouraged to form a forum of leaders and mentors as parents. Under this forum they can mentor other parents to help them support their children's learning particularly through PTA meetings. Otherwise, parents should be involve in an organized effective programme that assist them in learning how to create a home environment that will fosters their children's learning and know how to provide support and encouragement for their children's success.

It is important to recommend that parents should feature prominently in future educational reforms. This is intended to initiate and increase more support to education from parents/individuals rather than government alone. Therefore, any future educational

initiatives should give regard to the role of family in education rather than focusing on increased expenditure and curricular alone.

Katsina State government is advised to increase the current amount of feeding money per student per day. Doing so will improve the nutritional status particularly of students whose parents could not afford them adequate food both at homes and schools.

### **5.2.2 Promoting parent's engagement in education and family welfare**

Giving the economic potentials of parents in terms of occupational opportunities in the study area, parents are advised to form cooperative societies that will assist in supporting their children's education and other family welfare. Parents are also advised to plan their family welfare within the level of their resources and allocate the resources in such a way their children's education is not jeopardized.

Particularly the study results show that children of secondary school age recognized their parents' efforts and cited their parental sacrifices as sources of motivation to succeed in their academic pursuits. Parents should further be educated through PTA meetings on positive parental roles that enhance their children's motivation for improving their academic achievement. Moreover, PTA should organize regular meetings at schools and community levels to know more of the students' strength and challenges. The meetings will further exhort parents to buy necessary school needs of their children and particularly the importance of their visits to schools. More so, male parents should encourage their spouses to participate in legitimate occupational activities that empower them to economically contribute significantly to family education.

### **5.2.3 Strengthening students' awareness and motivation**

Students are advised to reciprocate all the opportunities created for them by both the government and their parents through hard work and by exhibiting good behaviour. To

further compliment their parents' efforts, students in collaboration with their teachers should form academic clubs and associations whereby they can interact and foster their talents and explore their abilities in order to encourage and improve their academic achievement. Students more particularly the disadvantaged ones should also be prepared to make proper use of the counseling centres and other school services provided in their schools in order not only explore their academic and career potentials but also know their challenges and how to overcome them.

### **5.3 Theoretical Implication of the Study**

Social learning-cum-humanistic theory affirmed that children learn through positive and negative reinforcement and act in certain ways in response to the reinforcement. The theory emphasized that an individual's behaviour is influenced by the environment and people around him. The study findings showed that students' home background factors such as parental education, occupation, family feeding, provision of resource materials, parent visits to schools, provision of pocket money and residential type had positive effect on students' academic achievement. While, family type, age category of parents, and aversive behaviour negatively influenced academic achievement of students, thus, there is the need for change in family norms and values in this regard. Arguably otherwise children from disadvantaged families might be put into an academic stress and loss of intellectual input. Generally, students' home background can contribute to quality education through effective informal interactions with children rather than the planned process of cognitive transmission alone or if otherwise quality education will be jeopardized. Further, as a theory implication, parents must design a cost effective mechanisms/interventions and setting up contact meetings with the school at regular intervals or whenever there are issues to solve regarding their children's educational pursuit. The conceptualization of the social learning-cum-humanistic theory which holds the view that children's educational process should involve informal interaction with the home not only on planned cognitive transmission alone is here therefore confirmed.

The authors of social learning-cum-humanistic theories emphasized that there must be an incentive or a motivating factor driving the individual's reproduction of a behaviour (academic achievement) during the interaction of parents and their children and said even if all other factors are present, the person will not engage in the behaviour without motivation. And that everyone has the potential to achieve and make contribution to society if their needs are fulfilled. The implication drawn further from the study findings is that if parents wish to motivate their children's academic motive and increase their academic achievement who will later contribute to society, they should emphasize on variables whose effects were positive and avoid those with negative consequences on students' academic achievement. Perhaps, parents can increase and sustain their children's motivation by showing interest in their children's progress both at home and school, discussing the value of good education and possible career options during visits to schools or at home, observing the mood of their children, setting genuine and realistic expectations, aspirations and affection, creating conducive home environment, financial incentives, organizing informal trips and provision of resource materials as at when due. The findings therefore have important influence for promoting parental involvement to benefit students' behaviour and achievement.

Similarly, it will be worth noting as implication from this study, when access to family educational and social welfare resources both within the family and school levels are limited, students suffer and lag behind in their academic achievement. Also any school that has large number of this group of students and without having the support of other parents and NGOs, it will be difficult to succeed. Thus, it can be argued that the current criticisms of budgetary underfunding of education both at federal, state and local government levels in Nigeria add more burden to parents. Hence, as a matter of theoretical implication, a more appropriate funding policy could be design to involve not only the government, but NGOs and donor agencies as well. Otherwise, establishment of an



Education Bank of Nigeria (EBN) has become imperative to offer opportunities to underprivileged parents for children education loans to support education and improve academic excellence not only in Katsina State but Nigeria at large.

With these statements, the study findings have offered empirical and theoretical evidence and explanation on different ways to achieve students' self-actualization (positive student's academic achievement) through motivation. The key indicator in this study might be that students responded to the proposition that home-schooling is an important motivational interaction for the improvement and sustenance of future students' academic achievement. By extension the study findings have consented to most of the proponents of the theory of social learning-cum-humanistic perspective and offered some practical and policy actions to improve the current position of students' academic achievement and family welfare.

#### **5.4 Suggestions for Further Research**

The followings are suggested for further research:

This study research relatively captures a group of homogenous students who are basically boarders with common school characteristics. It will be interesting to see how well the model of this study will predicts for students when compared with other groups such as those in private and public Day secondary schools. Efforts of this nature are hereby solicited.

The study did not establish that students' academic achievement was due to career aspirations of the students in agriculture. Therefore more research to explicitly establish the influence of secondary school students' career agriculture aspiration on their academic achievement is hereby advocated.

Further study is also encouraged using family system perspective to extend research beyond secondary school level in Katsina State in order to establish spillover effect of home influence on students' academic achievement by comparing the model of this study.

This research also advocated for a study on family wealth such as parents' income, number of investment, and assets possession to examine their influence on students' behavioural conducts in schools and implication on school administration.

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## APPENDICES

### Appendix 1: Questionnaire for Student respondents

Dear respondent,

I am a PhD student of Sokoine University of Agriculture, Morogoro, Tanzania. I present to you this questionnaire on the **Effect of Home Background Factors on Students' Academic Achievement in Agricultural Science in Katsina State, Nigeria**. I hereby solicit for your kind and objective responses to the items of the questionnaire. Please tick or otherwise on the appropriate responses that are correctly and typical of you. Your responses will highly be treated with confidentiality and anonymity because the information generated would be used for this research purpose only. You have the assurances of my honour and respect of your personality with esteem regard.

Thank you.

Yours sincerely,

**Hussein Ahmed Abdullahi**

#### SECTION A: BASIC INFORMATION OF THE RESPONDENTS

1. Name of school.....

2. Sex of the respondent:

Male ( )

Female ( )

3. Age ( )

4. Class ( )

5. Number in class ( )

6. Present class position ( )

7. Last class position ( )

#### SECTION B: SOCIO-ECONOMIC INDICATORS

1. Parent educational qualification: What is the educational level of your parents?

a. No formal education:

Both parents ( )

Only father ( )

Only mother ( )

b. Primary school education:

Both parents ( )

Only father ( )

Only mother ( )

c. Secondary school education:

- Both parents ( )
- Only father ( )
- Only mother ( )

d. Tertiary education:

- Both parents ( )
- Only father ( )
- Only mother ( )

e. Mass literacy education

- Both parents ( )
- Father only ( )
- Mother only ( )

**2. Parent major occupation: What is the major occupation of your parents?**

a. Farming:

- Subsistence farming ( )
- Mechanize farming ( )

b. Craftwork/artisan:

- Blacksmith ( )
- Mechanic ( )
- Bricklayer ( )
- Hunter ( )
- Welding/fabrication ( )
- Others (specify).....

c. Commercial Trading:

- Shop keeping ( )
- Transporter ( )
- Merchant ( )
- Others (specify).....

d. Civil servant:

- Both parents ( )
- Only father ( )
- Only mother ( )

e. Technocrat

- Banker ( )
- Industrialist ( )
- Engineering ( )

f. Others (specify).....

**3. Family feeding patterns**

a. How does your family get daily meals?

- Always ( )
- Usually ( )

- Sometimes ( )  
 Rarely ( )  
 Almost never ( )
- b. Do you eat together on the same dining as a family?  
 Always ( )  
 Usually ( )  
 Sometimes ( )  
 Rarely ( )  
 Almost never ( )
- c. How does your family get balanced diet?  
 Always ( )  
 Usually ( )  
 Sometimes ( )  
 Rarely ( )  
 Almost never ( )
- d. If you are to be given the opportunity to plan meals for your family would you opt for a change?  
 Yes ( )  
 No ( )
- 4. Household health care: How often parent handle your sickness?**
- Always ( )  
 Usually ( )  
 Sometimes ( )  
 Rarely ( )  
 Almost never ( )
- a. We refer all ill-health cases to our family doctor ( )  
 b. We attend public health care institutions for every ill-health cases only ( )  
 c. Ill-health cases rarely receive medical attention in our family ( )  
 d. We always refer all ill-health cases to native/herbalist ( )  
 e. We have a well equipped first aid box ( )  
 f. Others (specify).....  
 g. Which of the following health facilities are available for your family use?  
 Hospital ( )  
 Teaching hospital ( )  
 Medical center ( )  
 Clinic ( )  
 Primary health center ( )  
 Dispensary ( )
- h. How long do you undertake medical checkup in your family?  
 Always ( )  
 Usually ( )

- Sometimes ( )
- Rarely ( )
- Almost never ( )
- 5. What is the general perception of religious leaders about western education in your area?
  - a. Strongly support western education ( )
  - b. Less concern about western education ( )
  - c. Strongly against western education ( )
  - d. Neither support nor against western education ( )
  - e. Any other opinion ( )  
(specify).....
- f. Do you participate in family prayers and meditation Yes ( ) No ( )
- g. How often do you participate in religious activities?
  - Most regularly ( )
  - Usually regular ( )
  - Sometimes regularly ( )
  - Rarely ( )
  - Never regularly ( ).
- h. State the kind of religious activities you often engaged with family members.....  
.....

**SECTION C: FAMILY STRUCTURE OF THE RESPONDENTS****6. Family type**

a. Which of the family type do you belong?

Monogamous family ( )

Polygamous family ( )

b. How do you live as a family?

Nuclear family setting ( )

Compound family setting ( )

Extended family setting ( )

c. Under Which care of parenting styles are you being raised?

Single parent ( )

Both parent ( )

Adopted parents ( )

d. Who is the bread winner of your family?

Father ( )

Mother ( )

Complimentary ( )

**7. Family size**

a. How many dependents under the care of the household in your family? ( )

b. State the number of dependents in respect of the following:

Males ( )

Females ( )

c. State the number of the dependents who are:

Under 18 years ( )

18 and above years ( )

d. State the number of the dependents who are currently schooling:

Males ( )

Females ( )

**8. Dependency ratio**

a. State the number of siblings currently studying at primary school ( )

b. State the number of siblings currently studying at secondary school ( )

c. State the number of siblings currently studying at the tertiary institutions ( )

d. State the number of male siblings that you current school together ( )

e. State the number of female siblings that you school together ( )

**9. Sibling order**

a. What is your birth order if you are from a monogamous family? ( )

b. What is your birth order if you are from a polygamous family? ( )

c. What is the gap (in years) between children birth order in your family? ( )

d. How often your parents allow family decisions to the first birth order child?

Always ( )

Usually ( )

- Sometimes ( )
- Rarely ( )
- Never ( )
- e. What kind of decision is he or she granted?
  - All family decisions ( )
  - Decisions affecting school only ( )
  - Disciplinary decisions only ( )
  - Decision on home facilities only ( )
  - Decision on personal items use of the family only ( )
  - What is your relationship with other siblings in the family
    - Very cordial ( )
    - Cordial ( )
    - Less cordial ( )
    - Never cordial ( )
    - Others (specify).....

**10. Age category of parents**

- a. What is the present age category of your father?
  - 18 - 25 years ( )
  - 26 - 33 years ( )
  - 34 – 41 years
  - More than 41 years ( )
- b. What is the present age category of your mother?
  - 18 - 25 years ( )
  - 26 - 33 years ( )
  - 34 – 41 years
  - More than 41 years ( )
- c. What is the estimated age gap between your parents?
  - Less than 10 years ( )
  - 11 – 19 years ( )
  - 20 -29 years ( )
  - More than 29 years ( )
- d. I have no idea of my parents estimated age gap?
  - Yes ( )
  - No ( )

**SECTION D: PREDISPOSITIONS OF PARENTS TO EDUCATION OF RESPONDENTS**

**11. Provision of resource materials**

a. Do you have equipped library in your family house?

Yes ( )

No ( )

b. If the answer is yes, which of the following are found in the library?

Textbooks ( )

Journals ( )

Periodicals ( )

Computers ( )

Internet ( )

Others (specify).....

c. Are you allowed access to the family library?

Yes ( )

No ( )

d. Do you rely more on the school for learning materials?

Yes ( )

No ( )

e. How do your parents provide learning materials required for your learning?

Very often ( )

Sometimes ( )

Almost never ( )

Never ( )

f. State the kind of educational materials provided to you by your parents (specify).....

i.....

ii.....

iii.....

iv.....

v.....

**12. Parents visit to school: How do your parents pay visit to you while in school?**

a. My parents always pay regular visit to me ( )

b. My parents usually pay visit to me ( )

c. My parents sometimes pay visit to me ( )

d. My parents rarely pay visit to me ( )

e. My parents never pay visit to me ( )

f. Who normally pay you visit from home?

Father/male guardian only ( )

Mother/female guardian only ( )

Both father and mother/guardians ( )

g. Do your parents bring enough provisions for use during visits?

Yes ( )

No ( )

h. How long your parents stay with you during visits?

Up to the closing hour ( )

Just before closing hour ( )

Shortly after their arrival ( )

Never stay briefly ( )

i. Do your parents discuss your academic matters during visits?

Yes ( )

No ( )

j. Others (specify).....

**13.** Provision of pocket money: To what extent do you get pocket money from parents?

a. I get pocket money from my parents very often ( )

b. I get pocket money from my parents only sometimes ( )

c. I get pocket money from my parents almost never ( )

d. I never get pocket money from my parents ( )

e. State the total amount of money received from parents/guardian during the period

Maximum amount ( )

Minimum amount ( )

**14.** Cosmopolitaness: How often are you exposed to the following

a. Travel within Nigeria with parents during vocation to educational places

Always ( )

Usually ( )

Sometimes ( )

Rarely ( )

Never ( )

b. Travel outside Nigeria with parents during vocation

Always ( )

Usually ( )

Sometimes ( )

Rarely ( )

Never ( )

c. Visits to children's park with parents outside your home town during vocation

Always ( )

Usually ( )

Sometimes ( )

Rarely ( )

Never ( )

d. Visits to tourist places with parents outside your home town during vocation

Always ( )

Usually ( )

Sometimes ( )

Rarely ( )



- Never ( )
- e. What means of transport do you normally used during travel?
  - Air ( )
  - Road ( )
  - Rail ( )
  - Water ( )

**15. Social amenities in the residence of respondents**

a. State the number of household items in your home like:

- AC ( )
- TV ( )
- Couchette ( )
- Toys ( )
- Radio/stereo ( )
- Fridge ( )
- Cooker ( )
- DSTV satellite ( )
- Video CD ( )

Others (specify).....

b. What other household items do you have in your home?

- .....
- i.....
- ii.....
- iii.....
- iv.....
- v.....

c. What is the source of water for domestic use in your family home?

- Well ( )
- Pipe borne water from the dam ( )
- Borehole ( )
- River ( )
- Pond ( )

Others (specify).....

d. What is the source of electric power for your family?

- Power Holding Company of Nigeria only ( )
- Home generator only ( )
- Both PHCN and Home generator ( )
- No electricity ( )

Others (specify).....

e. Do you have well equipped home recreational facilities?

- Yes ( )
- No ( )

f. If the answer above is yes, which of the following facilities do you have?

- Lawn ( )

- Swimming Pool ( )
- Garden park ( )
- Children's park ( )
- Others (specify).....

g. Are you generally restricted in the use of the facilities/items mentioned above?

- Yes ( )
- No ( )

h. If the answer is yes above, state reason(s)

.....

.....

.....

**16. Extra lessons**

a. Do your parents engage you in extra lessons outside the normal school curricular activities?

- Yes ( )
- No ( )

b. If yes, how often are you engaged per week

- Very often ( )
- Sometimes ( )
- Almost never ( )
- Never ( )

c. how are you engaged in the organized extra lesson

- During vocation at home ( )
- Only in school ( )
- Both at home and school ( )

**SECTION E: FAMILY RESIDENCE OF THE RESPONDENTS****17. Place of residence**

a. Where do your family live?

Urban area ( )

Semi-urban area ( )

Rural area ( )

b. My home town is far away from school?

Yes ( )

No ( )

c. Do you have good schools in your home town?

Yes ( )

No ( )

d. State the type of school located in your area

No formal school ( )

Primary school ( )

Secondary school ( )

Higher institution ( )

e. State the subjects being studied by institutions located in your area

Arts ( )

Sciences ( )

Commercial ( )

Technical ( )

f. Do you have equipped public library in your home town?

Yes ( )

No ( )

g. Are there public recreational facilities in the area?

Yes ( )

No ( )

h. If yes on question (g) above which of the following do you have?

Amusement park ( )

Children's park ( )

i. State the number of times you visit those place (s) ( )

j. Which of the following sporting facilities are there around your residential area?

Sport complex ( )

Gymnasium ( )

Stadium ( )

k. State the number of times you visit those place (s) ( )

l. Others (specify).....

**18. Area of residence**

a. Where is your family residence located?

GRA residence ( )

Low cost residence ( )

Ghetto area ( )

Others (specify).....

b. Are there access roads and streets in your residential area?

Yes ( )

No ( )

c. Which of the following type of markets are found around your residential area?

Open market ( )

Supermarket ( )

No market ( )

d. Which of the following are found around your residential area?

Clubs and disco house(s) ( )

Cinema ( )

Football watching center ( )

**19. Residential type of respondents**

a. What is the tenancy status of your family house?

privately family own ( )

Living as tenants/public housing ( )

b. Was your family house build on sketched plan?

Yes ( )

No ( )

c. What kind of building materials used to build the house?

Bricks ( )

Concrete blocks ( )

Mud ( )

Corroborated ion ( )

Aluminum ion ( )

Wood and mud ( )

d. What is the physical nature of your family house?

Cluster ( )

Single bungalow ( )

Single flat apartment ( )

e. What is the estimated land size of your family residence?

Very large ( )

Large ( )

Very small ( )

Small ( )

f. Are you living in a rented/government owned apartment?

Yes ( )

No ( )

**SECTION F: RESPONDENTS' PERCEPTIONS OF FAMILY ROLES**

Show how much your parents think or want about your academic achievement as related to agricultural sciences

Variable	High	Medium	Low
<b>Family Expectation</b>			
a. Parents believe in your self-efficacy			
b. Parents' level of what they think you can score			
c. How much your parents want you to achieve/score			
d. Comparing you with your classmates			
e. Parents' thinking about your future grade			
<b>Family Aspiration</b>			
a. Communication on school and value placed on your educ.			
b. Expression of frustration and anger about your score			
c. Parents being proud of your scores			
d. Setting up standard for academic score			
e. Parents' personal feelings about your school			
<b>Family Obligation</b>			
a. Parents' unconditional love to you			
b. Handling of your problems in good time			
c. Parents' reaching out to your school/teachers			
d. Special support and interaction (e.g. closeness, chatting etc)			
e. Parents' desire to go to more school after this level			
<b>Family Pleasing</b>			
a. Parents' special concerns			
b. Parents' appreciation of your academic score			
c. Parents' believe in the result you obtain			
d. Parental motivational and encouraging practices			
e. Parental special and unexpected gift			
<b>Aversive Influence</b>			
a. Feeling afraid of parents			
b. Parents setting rigid and uncompromised rules & conducts			
c. Parents' doubt about affordability of future education			
d. Parents' disposition to situations			
e. Rigorous homework and choices			

**Appendix 2: Interview schedule for FGDs with parents**

1. What do you think are your major roles to contribute to your children's academic achievement in school?
2. What are the main responsibilities and duties of parents to children toward their education?
3. How do you think your family size, number of children in school and family resources influence your children's education?
4. Do you believe that religion and social engagements promote academic excellence?
5. What is your comment that family residence can have effect on your children's education?
6. Government had established mass literacy centres do you think they are important?
7. How do you consider your children's education as a whole?
8. Do you consider parents-school relationship promote academic achievement of your children?
9. What do you think parents should do to encourage their children to study?
10. Does your involvement in your children's education promote academic achievement?
11. How do you consider standard of education in Katsina state in relation to students' academic excellence?

**Appendix 3: Interview schedule for school principals.**

1. How do you assess your students' academic achievement?
2. Are there school rules that guide parents-children relationship in your school?
3. How do you consider parents-school relationship?
4. How do you comment on possible students' individual differences as regard to their family statuses that might promote or hinder academic excellence?
5. Is there any difference in conducts of parents toward promoting education of their children?
6. What are main areas parents engaged toward promoting academic achievement of their wards?
7. Does parents' involvement encourage your students to study toward achieving good academic performance?
8. What do you think parents should emphasize to promote academic excellence of their wards?

**Appendix 4: List of publication from this thesis**

1. Students' Perceptions of Family Roles Influencing their Academic Achievement in Agricultural Sciences: Implication for Career Agriculture in Nigeria. *African Research Review, an International Multi-disciplinary Journal*, 9(1), No. 36, 2015:169-182. H.A. Abdullahi, <sup>2</sup>M.R.S. Mlozi and <sup>2</sup>G.K. Nzalayaimisi.
2. Family Status and Students' Academic Achievement in Agricultural Sciences. *Annals of Modern Education* 7(1), 2015:80-94. Hussein A. Abdullahi, Gabriel K. Nzalayaimisi and Malongo R.S. Mlozi.
3. Effects of Home Background Characteristics on Secondary School Students' Academic Achievement in Agricultural Sciences in Katsina State, Nigeria. *Journal for Studies in Management and Planning* 1(2), 2015:76-89. H.A Abdullahi, M.R.S Mlozi and G.K Nzalayaimisi.
4. Determinants of Students' Academic Achievement in Agricultural Sciences: A Case Study of Secondary Schools in Katsina State, Nigeria. *African Educational Research Journal* 3(1), 2015:80-88. H.A. Abdullahi, M.R.S. Mlozi and G.K. Nzalayaimisi.
5. Comparative Analysis of Family Structure and Students' Academic Achievement: Lessons from Nigeria (Submitted). H.A Abdullahi, MRS Mlozi and GK. Nzalayaimisi.
6. The Role of Parents' Involvement and students' Academic Achievement in Agricultural Sciences in Nigeria (in press). H.A Abdullahi, GK. Nzalayaimisi and MRS Mlozi.