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RELATIONSHIP BETWEEN FAMILY SOCIOECONOMIC STATUS
AND THE ACADEMIC ACHIEVEMENT OF STUDENTS IN
JORDAN STATE UNIVERSITIES

DISSERTATION

Presented to the Graduate Council of the
University of North Texas in Partial
Fulfillment of the Requirements

For the Degree of

DOCTOR OF PHILOSOPHY

By

Ibrahim Salman Qudah, B.A., M.A., M.A.

Denton, Texas

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The problem of this study concerned the relationship between the academic achievement of students in Jordan state universities and the socioeconomic status (SES) of their families. A survey composed of questions regarding demographics, SES background, cultural factors, and accumulated grade point average (GPA) was administered by four Jordanian professors in four state universities in Jordan. Of the 620 surveys made, there were 609 usable surveys analyzed using the Statistical Package of Social Science SPSS/PC+.

Data were sorted so that families' SES variables, namely fathers' and mothers' income, occupation, and education, and students' GPA were identified on a 9-point ordinal scale. Pearson's chi-square was used to determine whether relationships existed between parents' SES and with students' GPA. Spearman's correlation was also used to determine the direction and strength of the relationships.

The same data were then compressed from 9 to a 3-point ordinal scale and were used to determine the relationship

between students' GPA and their parents' SES. For this purpose a one-way Analysis of Variance (ANOVA) was used. Five additional related questions concerned relationship between degree of religious commitment of parents, number of siblings, parents' kinship, parents' educational aspiration, and reason for parents' educational aspiration, and students' GPA were identified on a 4-point ordinal scale and also tested using the one-way ANOVA, the Tukey/Kramer method, and the Eta coefficient.

Statistically significant negative relationships were found between students' GPA and their fathers' and mothers' income, occupation, and education. However, the relationships between parents' SES and the students' GPA were weak and without practical significance. On the other hand, the five related questions revealed statistically significant positive relationships between the students' GPA and number of siblings, degree of religious commitment, and degree of kinship between parents. The influence of parents on students' educational aspirations was strong and was attributed to their families' desire that they earn a better living than their parents.

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Finally, I would like to dedicate this humble effort to the spirit of my father who passed away on December 15, 1992, my mother "Om Ibrahim", and my eldest sister "Om Mohammed" who never stopped urging me to advance my education.

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CHAPTER 1

INTRODUCTION

Western scholars, in attempting to determine why some students excel in academics while others do poorly, have examined the influence of the socioeconomic status (SES) of parents on students' performance (Buriel & Cardoza, 1988; Harmon, 1980; Kohn, 1969; Riddell, 1989; Picou, 1973). Although researchers have generally found that the higher the parents' SES, the more likely students are to excel academically (Duncan, 1972; Sewell & Shah, 1973), most of the studies have been conducted on students in elementary and high school; relatively few researchers have examined the performance of college and professional school students. As a result of such research, it is widely accepted in the West that the offspring of political, economic, and social elites are more likely to do well academically than are the offspring of their lower-SES colleagues (Bradley & Caldwell, 1984; Valencia & Henderson, 1985).

Despite the evidence of a close relationship between SES strata and academic achievement, a high degree of variation within classes in regard to such relationship remains unexplained. For instance, studies have revealed that significant variances in academic abilities within

social classes far exceed those found between social classes (Morrison, Block, & Block, 1979). The point seems to be that most researchers focus on "who" the parents are rather than on "how" the parents interact with their sons and daughters within the home. Nevertheless, studies of the relationship between students' SES and their school performance have been helpful in identifying family patterns that promote academic achievement. For example, Douvan (1958) indicated that children of working class, middle class, and upper class parents have different perceptions toward school.

In many developing countries, particularly in the Middle East, this may not be true. Instead, it may be that students who are from poorer, less-privileged families and are desirous of improving their position do as well, or better than, their more fortunate classmates because they are more highly motivated (Al-Ebraheem, 1980; Piel, 1965). This thesis is examined in Jordanian state universities in this study.

Introduction and Theoretical Rationale

Social stratification is understood as a societal process for distributing scarce goods. Positions with similar access to these goods form clusters which, in turn, form a hierarchy of strata. Educational achievement provides opportunities for structural and social change,

thereby helping maintain socioeconomic differences among various groups in society (Alwin & Thornton, 1984). It is possible that the identity of social classes in the West is, to some extent, rooted in economic development resulting from the European Industrial Revolution in the 18th century. It became understood that socioeconomic advantages of a family increase the likelihood of schooling excellence and that, concurrently, a higher number of years completed in school leads to a higher status occupation and a higher paying job. Thus, socioeconomic differences among families in any given industrialized society are perpetuated across generations (Alwin & Thornton, 1984).

Generalizations which are useful to the study of SES in Western societies, however, can be quite misleading when applied to studies of less-developed countries (Johnstone, 1983). Some extraordinarily significant differences exist in political, social, and economic structures as well as the prosperity between developed and developing countries (Foster, 1977). When conducting a study of factors which affect educational achievement, variables such as race, ethnicity, and regional origin are not very important because social diversity in developing countries is much less conspicuous than in Western nations (Foster, 1977). Before the Industrial Revolution, Europe also had a different social strata, which consisted of feudal land lords, peasants, and merchants. In today's situation,

developing countries can be compared, to some extent, to Western nations during feudalism. In an attempt to determine which factor or factors affect academic achievement in developing countries, social background may influence whether or not a child attends school; however, once parents meet the minimum financial requirement to cover the cost of their children's schooling, and have an appreciation for education, they send their children to school and encourage them to continue with a college education. Beyond the minimum level of economic capability, where parents can afford to send their children to schools, the variation between parents' SES background becomes less important in determining the number of years of schooling or the level of achievement of the students (p. 224).

The primacy attributed to SES, according to Heyneman (1976), cannot be generalized beyond industrialized societies. His study of high school students from five districts in Uganda showed that socioeconomic background is not significantly related to academic achievement. The theoretical explanation is that students from low SES families can be highly motivated by the promise that academic achievement means a better occupational future. Cooksey (1981) also found that the highest level of performance for school entrance examination in Uganda was among students who came from the least developed and traditionally poor, rural areas of the country.

Educational inequalities in the West are made possible and acceptable by the operation of a dominant value system in which individuals rather than the system are emphasized (Toomey, 1976). Differences in family environment, according to Toomey, exert an important influence on students' schooling that is relatively independent of differences in wealth (p. 228). Parents can be economically and socially disadvantaged and yet able to provide a stimulating environment for their children (p. 230). Certainly, SES as a phenomenon has some explanatory power to explain students' academic achievement. As research has progressed, however, more and more factors, such as the family socialization process, family interest, and family emotional support, have been found to be as important as purely socioeconomic status (Niles, 1985).

As demonstrated in chapter two, recent studies in Third World countries have indicated that SES and academic achievement are not significantly related. Niles (1985) argued that the absence of positive relationships between family SES and the academic achievement of students is based on three theoretical points. The first is that variation in student achievement among Third World countries is due to differences in language development because individuals in less developed countries (LDCs) generally do not depend heavily on printed material. The second is that parental support among various social status groups in the Third

World does not reflect the same patterns found in the West. In fact, lower SES groups often support education for their sons and daughters more than do parents in upper SES groups. The third point is that a genuine systematic difference in the support of education between social strata in most developing countries has not yet emerged (p. 420). The educational system, as a determinant of one's parents in society, has not fully developed as it has in Western nations. For instance, researchers in countries such as Uganda, Kenya, Somalia, and Ghana have concluded that wealthy students do not perform better or achieve higher levels in schools than do students from less-advantaged families. What makes a difference in students' achievement in LDCs may not be SES, but rather individual family's attitudes and expectations for their children. Less-advantaged parents may push their children harder and expect them to compete with their classmates in order to improve their economic lot (Heyneman, 1980).

Statement of the Problem

The problem of this study concerns the relationship between SES and the academic achievement of students in Jordan state universities.

Purposes

The purposes of this study were:

1. to investigate whether or not specific SES variables such as parent's income, level of education, and occupation are determinants of academic achievement among students of state universities in Jordan;
2. to determine if a relationship exists between parents' SES (as measured by income, education, and occupation) and their sons' and daughters' academic achievement (as measured by GPA in Jordan state universities); and
3. to understand the applicability of selected SES variables in the educational process within the Jordanian culture.

Research Questions

The following research questions were formulated to guide this research:

1. Is there a relationship between the GPA of students in Jordan state universities and their fathers' level of income?
2. Is there a relationship between the GPA of students in Jordan state universities and their mothers' level of income?
3. Is there a relationship between the GPA of students in Jordan state universities and their fathers' occupation?

4. Is there a relationship between the GPA of students in Jordan state universities and their mothers' occupation?

5. Is there a relationship between the GPA of students in Jordan state universities and their fathers' level of education?

6. Is there a relationship between the GPA of students in Jordan state universities and their mothers' level of education?

7. Is there a relationship between the academic achievement of students in Jordan universities as measured by their GPA and their parents' SES as measured by income, occupation, and education?

In addition to these research questions, a number of questions were explored to determine how cultural factors relating to family background affect the academic achievement of students in Jordan's state universities.

These factors are the subject of a series of questions:

(a) number of siblings in the families, (b) degree of religious commitment, (c) mothers' heritage and distance of kinship from the fathers, (d) degree of the families' influence on students' educational aspiration, and (e) reason of the families' influence on students' educational aspirations.

Significance of the Study

This study is significant for the following reasons:

1. The inconsistency of the results of previous research in socioeconomic studies points to a need for additional research, particularly in Third World countries (Carnoy & Thias, 1974; Epstein, 1970; Simon & Sumru, 1972).
2. The lack of research at the college level leaves a gap which this study helps to fill. No researchers have examined how parents' SES affects students' academic achievement in Jordan. No studies have been conducted of the relationship between the socioeconomic background of Jordan state university students' parents and students' achievement.
3. Identification of variables and determinants of academic achievement from various colleges in different geographical locations in Jordan can help clarify the direction of future educational policies.
4. Knowledge of the impact of parents' roles on their sons' and daughters' educational achievement can advance knowledge about families and their influence on children.
5. This research contributes to theory-building in education in Jordan and other developing countries.

Definition of Terms

For the purposes of this study, the following terms are defined:

Students' academic achievement is students' cumulative grade point average (GPA) in college (Hall, 1969). Hall conducted a study of the academic achievement of junior college students in the U.S. using GPA on a 4-point scale during the fall semester of 1967 as a criterion of achievement.

SES is a combination of the level of education, the level of income, and the occupation of students' parents. This definition has been used by scholars such as Neelsen (1975) and Nam and Terrie (1982). Variables of SES, identified and utilized by Picou (1973), include parents' occupation, level of income, and level of education. In a study of high school students in the U.S., Picou used students' GPA to determine their academic achievement. SES in Jordan is defined similarly, and is explained in detail later in the methodology section.

Delimitations

This study is limited to (a) students who attended any of the four Jordanian state universities in 1993 and were ranked as sophomores, juniors, or seniors in the institutions, and (b) students who were willing to participate by completing and returning the questionnaire.

Organization of The Study

This study includes the following five chapters:

Chapter 1 includes a description of the purpose and significance of the study and a review of the theoretical rationale supporting studies of the influence of SES on academic achievement in Western and non-Western societies. Also presented are research questions which guide the research, definitions of terms, and the delimitations of the study.

A review of literature related to the influence of socioeconomic factors on students' academic achievement in developed and developing countries is provided in Chapter 2. This review presents a theoretical framework and includes models and theories of academic achievement and determinants of academic achievement--namely innate ability, motivation, and home environment. The influence of family and social classes on student performance, as well as findings of previous SES studies in developed and less-developed countries, are examined. Jordan and its educational system, including its evolution and the role of education in Jordanian society, are also examined in this chapter.

Chapter 3 provides a description of the methods of analysis used to determine the impact of SES as well as some cultural variables on the academic achievement of students in four state universities in Jordan. The research design; population; selection of the sample; procedures for

collecting data; survey instrument; field test of the instrument; and treatment of the data, including coding and statistical techniques used, are all explained in this chapter.

The findings of the data analysis used to answer the research questions of this study are presented in Chapter 4. Data are presented in both tabular and narrative form.

In Chapter 5, the final chapter, the findings are analyzed and a general conclusion based on the statistical analysis is provided. A summary, discussion of the findings, conclusions, and recommendations for future research are also presented.

CHAPTER 2

REVIEW OF RELATED LITERATURE

Introduction

This chapter includes a review of literature related to the influence of parents' socioeconomic status (SES) on the academic achievement of students and an examination of the Jordanian society, namely the educational system, to see if this influence applies to students in Jordan state universities. The purpose of this chapter is to explicate the theoretical models and theories of academic achievement. Factors that affect academic achievement in general and the impact of SES of students on academic achievement in developed and in less-developed countries are explained in this chapter. Results of case studies from both developed and less-developed countries are shown in order to see how differences in culture affect the achievement of students. These concepts are explained and presented in three sections: (a) theoretical framework of academic achievement; (b) determinants of academic achievement, and (c) selected socioeconomic studies in both developed and less-developed countries. An additional section on the Jordanian society provides a discussion of Jordan's

educational system--both its evolution and its role in the society.

Theoretical Framework of Academic Achievement

The results of most previous research on academic achievement in the West have indicated that the socioeconomic status of parents affects the academic performance of their sons and daughters. Although SES is difficult to define, it is commonly used to denote the relative position of an individual within socially desirable hierarchies in society. For example, Nam and Terrie (1982), stated that SES consists of three interrelated social hierarchies--class, status, and party. Class refers to the social and economic life which an individual holds and depends mainly on the economic wealth of the individual. Status implies the position held by an individual in society and how it is perceived and judged by others. Party is regarded as the accumulation of power to influence others. Power may come from wealth, position, or interaction with others who have these power resources. All of these personal attributes are accumulated in families, who pass them from generation to generation. Social stratification in societies, according to Duncan (1961) is an important factor which helps to predict the academic achievement of students from different SES backgrounds. The higher their SES, Duncan explained, the better students excel in schools.

Education, according to Sorokin (1927), is a mechanism for passing the position of families to their young. It serves as a mechanism for the social testing, selection, and distribution of individuals within different social strata. According to Sorokin, schools basically are a kind of sorting machine. Thus, identifying the properties of different social classes is a matter of great importance. Scholars such as Parsons (1959) have extended the concept of the selection and allocation functions of schools and have noted that other aspects of the family, such as parent-child socialization, teacher-student interaction, home-school interconnectedness, all are important factors which affect academic success. The writings of researchers such as Boyle (1970), Campbell & Parker, (1983), Duncan (1966), Heyneman (1989), and Miller (1970) have also enriched the concept of SES studies and how it affects students' academic success.

As the number of studies pertaining to the importance of SES on academic achievement has increased, so has the number of variations in the basic concepts or theories. The major models and theories that are related to academic achievement and the significance of socioeconomic studies are shown in the following list. These models and theories, as explained by Neelson (1975), are presented in the following sections and in the following list:

Models	Theories
1. Prestige	1. Technical function
2. Occupational-functional	2. Conflict
3. Socioeconomic status	
4. Class	

Models Relating to SES Studies

According to Neelson (1975), there are four commonly used models of social stratification--the prestige, occupational functional, socioeconomic status, and class models. Although these models are interrelated and are difficult to distinguish, they provide a differentiation, according to Neelson, and help clarify the relationship between academic achievement and SES.

The prestige model refers to the differential prestige of various occupations. It assumes that the occupational position that an individual holds determines the prestigious status of the individual in the eyes of others. Positions in hierarchical organizations may be the main determinants of prestigious status, but not necessarily. For example, mayors of cities, judges, or popular singers may have more prestige than a person holding a high position in a hierarchical organization, such as a director of sales or a vice president of a company, even though those in hierarchical organizations earn more money than the mayor or judge. On the other hand, a person, such as a popular

singer, may have a great amount of prestige and a lot of money, and yet have little social class. Prestigious status is most often accompanied by social status, but not necessarily by economic related privileges such as large salaries.

The occupational-functional model holds that an individual's kind of work and related qualifications determine the person's status. The mode and relations of production in a society, according to this model, determine the positions of individuals. Because certain kinds of work depend on academic qualifications, this model stresses education as a factor in determining the position of a person in society.

The SES model is related to the total group of variables that differentiate the ranking of individuals. It combines a person's income, education, and cultural level, as well as level of consumption of goods, which is not necessarily considered in the other two models. It also incorporates the idea of prestige, class, and occupation in a one-dimensional scale.

The class model refers to the differentiation in the amount and sources of income. It is measured and analyzed purely on income level, regardless of occupation, prestige, or social status, which are frequently used interchangeably. Neelsen (1975) argued that the theoretical distinction between the four models cannot be easily made.

Theories Relating to SES Studies

There are also two theories, according to Neelson (1975) that account for the increased schooling required for employment, (i.e., the technical function and conflict theories) (Collins, 1971; Neelson, 1975). Demands for high skills are created by industrialization, according to the technical functional theory. Conflict theory is based on the concept that individuals and groups are in competition for a limited number of positions which provide income, status, and prestige. Both of these theories affect society's perception of education.

The technical-functional theory of education proposes that the educational requirements of jobs in industrial societies continue to increase as new technology is developed. The proportion of jobs requiring a low level of skills decreases, whereas the proportion of jobs requiring a high level of skills increases. As industrialization has progressed, the educational requirements of jobs in Western societies have risen, mainly because of the advances of technology and increased specialization. The technical-function theory further proposes that formal education provides the skills required by changes in technology. Better-educated employees are believed to be more productive than are less-educated employees (Schultz, 1961). This assumption that a higher level of education necessarily

increases productivity, however, is questioned. According to Collins (1971), economic evidence indicates no clear contributions of education to economic development beyond the provision of mass literacy. Higher levels of education than required for a position, in fact, can be counter-productive and can create unhappy workers and additional conflict in the work place. Vocational training skills, which come primarily from work experience, can produce more productive workers than formal education.

Conflict theory propounds that groups and individuals are in competition for a limited number of positions which provide income, status, and prestige. This theory posits that differences between individuals or groups may be the result of differentiation in lifestyles which generally is a reflection of economic, cultural, institutional, or environmental factors. Collins (1971) argued that there is a continual struggle in societies for goods, power, wealth, and prestige. Because economic goods, power, wealth, and prestige are all scarce commodities, individuals, groups, or organizations always want more and are in competition for each.

Conflict theory, Neelsen (1975) explained, reflects a society's sanctions and power. Society constitutes a system of norms and conformity which is enforced by positive and negative sanctions. Both sanctions and norms rest ultimately on power, which shapes and determines the scope

of competition among individuals or groups. A question of power ultimately determines one's place in society. How the technical, functional, and conflict theories affect academic achievement is discussed in the next section.

Determinants of Academic Achievement

The decision to attend college, often depends on such factors as the ability to finance the cost of attending school, pressure from parents, and a willingness to forgo the earnings available if not attending college (Anderson and Thurber, cited in Hirst, Miller, & Wenger, 1992). Achievement in college is determined by several factors. One factor which affects college students' achievement is psychological need for personal satisfaction. Students often pursue an education and work hard in school to satisfy these personal needs. Students frequently seek to earn and gain personal satisfactions such as self-esteem, a sense of accomplishment, and social recognition. Students also are motivated to pursue higher education for future social status and the prestige of having a degree (Clayton & Smith, Cross, Novak & Thatcher, Ross, cited in Hirst, Miller, & Wenger, 1992).

Other general factors, according to Kurtz and Swenson (1951), that affect academic achievement are home conditions, peer relations, physical and mental well being, and aspirations and prospects for the future. The pride,

confidence, and affection instilled by the family, and the degree of interest parents have for their children, all appear to be factors in motivating students to achieve in school. A lack of family cohesiveness, affection, and high expectations for children, on the other hand, tends to demotivate students and thus lead to lower achievement.

Peer relations also affect the level of academic achievement of students (Kurtz & Swenson, 1951, p. 474). Friends who are concerned about doing well in school and who are highly regarded by teachers have a positive impact on their peers, and visa versa. The quality of a student's friends determines to a large degree whether or not a student takes academic activities seriously.

Physical and mental well being influence students' attitudes toward school and, as a result, affect their levels of academic achievement. Appearance, a positive attitude, self-confidence, and a good self-image all are determinants of achievement. On the other hand, students who have a low self-image, are unhappy, or have a poor attitude have symptoms of poor achievement (Kurtz & Swenson, 1951, p. 475).

Finally, a student's aspiration and prospects for the future are important factors that influence the student's desire for education. High achievers, for example, tend to have a greater desire for education to fulfill their future expectations. High achievers appear to see a relationship

between education and their future life and to regard the value of education for more than its immediate benefits (Kurtz & Swenson, 1951, pp. 478-479).

Still other major factors that affect academic achievement in colleges and universities, according to Duncan (1966) and Alwin (1976), are innate ability or genetic intelligence, the home environment, personal motivation, SES, and the quality of the education system. Academic achievement cannot be determined by any one of these factors alone unless the impact of other factors is controlled. Because there are many variables involved in the equation of academic achievement, Alwin suggested that all possible determinants of academic achievement be categorized into three major bundles: innate ability, motivation, and home environment.

Innate Ability

The ability to learn has long been stressed as a major factor affecting academic achievement. Numerous psychological studies have been focused on issues related to measures of ability. Most research has explored basic intelligence and the cognitive ability to learn. Many researchers, such as Perry and Penner (1990) and Marjoribanks (1987), have sought to explain the psychological conditions which indicate and can predict academic achievement.

Academic achievement also has been studied as a social phenomena. Sociological writers have tended to concentrate on the examination of social relationships between students, parents, teachers, and other key individuals or groups and their impact on academic achievement. Such social phenomena as status and parental socialization are important aspects of these studies.

The sociopsychological perspective combines both the psychological and social aspects of academic achievement, and focuses on the interaction between innate ability and the socially induced attitudes of students as they relate to school performance (Marjoribanks, 1987). For example, some researchers have concentrated on psychological disturbances or traumatic events affecting students which result from social factors such as poverty, death of parents, and alcoholism, which can affect academic achievement.

All of these studies support the importance of early childhood development on a student's cognitive ability. A student's ability to learn is strongly affected by his or her cognitive development at an early age and is shaped by the environment of the family (Bradley & Caldwell, 1984a; Valencia & Henderson, 1985). Parenting styles and parents' attitudes and treatment of their children at an in early age greatly influences students' future ability to learn and to be successful in school. The importance of the family environment during early childhood on a student's cognitive

development cannot be over emphasized. SES alone, according to Bradley and Caldwell (1984), does not account for a substantial proportion of the variations in home environments (p. 365). Some families instill a love for learning and motivate children to excel in education more effectively than do others, irrespectively of their SES level. Parents' enhancement of the academic achievement of their sons and daughters does not solely depend on wealth, occupation, or status, but rather on their parenting style. The parenting style of parents may depend on a number of factors other than SES. Obviously, if parents are weighted down with worries about debts or personal insecurities or have little or no interest in education, their parenting behaviors are not likely to motivate their children to excel in school. On the other hand, wealthy parents who are so busy getting ahead or consumed in their own interests may not convey to their children a love of learning. Parenting skills, to a large degree, depend upon the characteristics and personalities of the parents and not solely on whether they are rich or poor.

Motivation

Motivation is another aspect of behavior which affects students' academic achievement (Weiner, 1990). Students who are blessed with high intelligence quotients (IQ) and are privileged to the best educational facilities and

opportunities do not necessarily become high achievers unless they are motivated. Motivational psychologists stress that a number of variables influence motivation.

David McClelland (1955), who systematically studied motivators of academic achievement, concluded that motivation was a psychological state formed by early childhood experiences and by parents who teach their children independent mastery skills, a sense of competition, and a sense of reward. Based on this conclusion, McClelland pointed out that some children are motivated to achieve because of their early childhood experiences, whereas others have no such built-in motivation to achieve. The psychological state of being motivated remains a part of an individual's make-up. This proposition, carried to an extreme, seems to say "once motivated, always motivated." The concept that motivation is learned in early childhood seems to be verified in studies of lower social classes by Castenell (1983) who explained that lower social classes were not motivated by actions involving long-term promises and delayed gratification. Researchers have found that, because delayed gratification is necessary for academic achievement, children of working class parents differ from those of middle- and upper-class families and that they perform less well in academics.

Home Environment

Home environment has a major impact on children. The way children are reared and disciplined, according to Walberg and Marjoribanks (1976), provides a measure for predicting their academic achievement. For example, children in intellectually demanding homes in which rewards are based on daily or weekly achievement tend to score higher than do children who do not come from such an environment. Almost half of the variance in verbal ability between students can be accounted for by sociopsychological factors of the family environment (Walberg & Marjoribanks, 1976).

A number of studies have been conducted since 1955 on the impact of various types of home environment on children's personalities and school achievement. The way parents verbally interact with their children, parental question-asking techniques, discipline and control strategies, and the kind of encouragement of efficacious problem solving all are important in shaping students' ability. The degree to which these variables affect students depends upon parents' beliefs and values, which are influenced by the parents' level of literacy, their expectation of their children's achievement, and their interaction with school activities and teachers (Holloway, 1990).

Children who are raised in a highly regimented and controlled home environment, according to Baldwin (1955),

behave differently from those raised in democratic or interactive home environments. In a study conducted by Fells Research Institute, Baldwin found that children who are not given freedom to express their feelings, to question their parents, to criticize matters at home, to disagree with others, and who live under strict rules and regulations, become more submissive, and less quarrelsome and negative. Their personalities are influenced by their home environment, but their academic achievement is also affected negatively. They do not do as well academically as children who are reared in an interactive, democratic environment.

The conclusion that an interactive, democratic home environment tends to produce better students was challenged, however, by McClelland (1955). McClelland stated that children who are excessively dependent on parents never get a chance to achieve by themselves. He concluded that children with parents who are too helpful or nurturing or friendly tend to have low achievement scores. McClelland based his conclusions on the premise that parents in democratic interactive homes tend to be more helpful, nurturing, and friendly than parents in homes which are more regimented and highly controlled. Home environments which are regimented, he believed, tend to force children to stand on their own feet in order to survive. This motivates students, he suggested, to develop goals to succeed simply

because they care for their future careers. McClelland also contended that well-disciplined children who are placed under stress and are not indulged in their homes become more independent from their parents and score higher in school.

Later, Miller (1970) challenged McClelland's (1955) findings that a regimented home is more likely to produce children who are high achievers. He found the exact opposite. A home environment that allows freedom of thought, freedom in the choice of friends independent of parents' opinions, and encourages students to become more active leads to high achievement in school, according to Miller. Parental support of children also helps create a high level of confidence and encourages children to be closer to their parents. Unlike McClelland's thesis, Miller contended that students who are culturally, intellectually, and emotionally deprived are not successful in school and have negative attitudes toward school, peers, and life in general.

Another dimension of the home environment involves the family's emphasis on education for future requirements. There are two kinds of families, according to this view, the getting-by and the getting-ahead families. The getting-by families encourage their children to enjoy themselves while they are in school and do not accentuate future needs for education. In contrast, the getting-ahead families encourage their children to work hard and perform well in

school because of the need to get into other educational programs or to get good jobs. Parents in the getting-ahead families expect high grades and good performance from their children, pay a lot of attention to what is happening in school, stress good performance, and attempt to motivate their children to do better.

The SES of a family affects family members' attitudes as well as the academic achievement of children, according to Alwin and Thornton (1984). Sons and daughters in more affluent families, accordingly, experience more success in school, which, in turn, affects students' academic achievement (Alwin & Thornton, 1979). Because more schooling leads to higher occupational status and higher paying jobs, differences in the SES of families in industrialized nations lead to a continuous perpetuation of advantages to the rich. This view, however, is challenged by such writers as Toomey (1976). He asserted that there is a cultural capital--a combination of education, values, and beliefs--which is developed within a family, independent of wealth. Thus, wealth is related only to the labor market and not to the cultural capital. Toomey argued that educational inequalities are made possible and accepted within Western societies by the operation of a dominant value system which is individualistic rather than system-centered. His argument is that the system does not give the successful the advantage because success is determined by the individual.

The individualistic value system holds that anyone can succeed if he or she wants to succeed.

Knowledge of the role of family background as a determinant of academic achievement is still limited, however. For example, Alwin and Thornton (1984) concluded that most significant family influences occur in early childhood, but also influence children in later stages. Furthermore, Duncan (1972) rejected the idea that the effects of low economic status of a family necessarily means that there will be a continuation from generation to generation of economically and educationally deprived students. Accordingly, Duncan purported that a vicious cycle of poverty is not inevitable because an individual has poor parents (p. 785).

Families and Social Classes

The attitudes and approaches of families in rearing children vary according to social class, (Kohn, 1959, 1963; Riddell, 1989). Although individuals in the working and middle classes in the United States share many core values, the emphasis placed on their values differs. Working class families stress values which center on conformity to external proscriptions, whereas middle class families emphasize the value of self-direction and stress internal dynamics of behavior when dealing with their children. Working class families focus more on the manipulation of

things, while middle class families deal more with interpersonal relations and with their children's ideas and symbols (Kohn, 1963). Mothers and fathers of middle class families seem to have equal impact on their children's academic achievement, whereas mothers of working class families have more impact on their children's academic achievement, according to Kohn (1963).

The total process of parent-child interaction tends to involve more tension and anxiety in families with working class backgrounds than in families with middle and high income levels, according to Himmelweit (1955). As a result, poorer students show less ability in the transmission of values between what they learn at home and what they learn in school. This translates into low levels of academic achievement. Himmelweit's study in the U.S., however, was challenged by a study undertaken by the London School of Economics in England. In the England study, which looked at young adolescent boys and their parents, researchers found that working class children, while less pushed academically, were emotionally left alone to fend for themselves. Consequently, the children were more independent, and thus more successful in interpersonal skills, which, in turn, helped them achieve academically at a higher level in later stages. The England study indicated that students from upwardly socially-mobile working class families tried to become more like their middle and higher class peers and to

adapt their values. The differences between the findings in the American and English studies indicate that there may be more differences between cultures than have yet been considered.

Families in the two classes also differ in how they value or emphasize future planning for their children. According to Raynor (1974, 1978), children who set future goals with their parents are more motivated and work harder. Parents from middle and upper social classes tend to be more future-oriented and to stress the need for their children to work harder in order to advance their positions. The issue of future planning, according to Castenell (1983), is stressed much less by the parents of lower social class. Students from the middle income level, because they are more future oriented, are generally perceived as possessing a greater need to achieve than are students from lower income levels.

Communication skills as a variable which affects academic achievement also differs between social classes. According to Jackson (1982), the fact that children from lower income families have fewer verbal interactions within their families affects the children's reading ability and language development. In a study of Hispanic and non-Hispanic white children in the United States, Laosa (1984) found that children from low and middle income classes basically were equal in their reasoning and motor skills,

but that the children from the lower income class scored lower on measures of verbal ability, quantitative ability, and short-term memory.

Within the family, there appears to be variation in the influence of fathers and mothers on children's academic achievement. In the United States, fathers, as the traditional head of the family, seem to be the most important variable affecting students' academic achievement. The socioeconomic background of the father, according to Sewell and Shah (1973), has a substantial relationship to students' college plans. In a randomly selected cohort of 10,318 Wisconsin high school seniors, a correlational path and cross-tabular analysis showed that the fathers' encouragement was the strongest intervening variable affecting high school performance and the desire to attend college in the future. In another study of 2,852 male students in secondary schools at six middle-sized Pennsylvania cities, Picou (1973) found that the fathers' income, occupation, and education level were the most influential factors on children's aspirations for achievement in school. Specifically, he found that the fathers' level of education was the most powerful influential variable on the children's academic achievement.

The mother, however, also influences children's academic achievement. According to Buriel and Cardoza (1988), in some ethnic groups in the United States,

students' mothers, rather than their fathers, are the most influential variable in academic achievement. Buriel and Cardoza, who examined high school data from three generations of Mexican-American high school students, used Duncan's model which utilizes the father's and mother's occupation, income, and education. They found that the mother was a significant factor influencing academic achievement. They also found that parents' education level and behavior within the home were more significant than income or occupation.

Selected Socioeconomic Studies

It is generally accepted in the West that SES partially explains students' academic achievement (Niles, 1985). Students from high SES families are expected to succeed academically more than are students from low SES families. This assumption applies mainly to research in Western countries. Relatively few studies have examined the impact of SES on the academic success in non-Western, developing nations. Literature on this topic is examined in this section.

Relationships Between SES and Academic Achievement in Developed Countries

Students from low SES homes in the United States and other developed countries generally are not expected to perform as well in school as are their more fortunate

classmates, according to Stanfiel (1973). Poor families often live in poor neighborhoods which, in most cases, have poorer quality schools. Thus, students are automatically placed in a disadvantaged position which negatively affects their academic achievement. Despite these students efforts, Duncan (1972) contended, their academic achievement is affected by their families' SES. On the other hand, high SES parents are more likely to send their children to high quality schools and to motivate them to excel, thus resulting in expectations of higher academic achievement. Students from financially advantaged families are expected to receive more family encouragement and to have a better home environment than students from poorer families, which affect the level of students' academic achievement (Duncan, 1972).

The assumption that high SES leads to high academic performance, however, has been questioned by scholars such as Farrell (1974), Marjoribanks (1987), and Thelsen (1983). Academic performance does not necessarily depend on students' SES, according to Farrell, Marjoribanks, and Thelsen. They noted that the SES of a student is not as important as the student's family environment. The family environment, including the parents' attitude, concerns, and aspirations and the encouragement of their children are most important. All three researchers agree that an inadequate SES can be counteracted by the family environment. The

attitude of parents toward the child and education are most important. These researchers insist that SES does not serve as a predictor of school achievement. Many other variables are needed in order to explain achievement, according to Scarr (1981). One of the other variables affecting achievement, according to Scarr, is intellectuality. He states that intellectuality is a key factor in school performance, and that it is shaped by the family environment during the child-rearing period. Intellectuality, or the desire to learn, is not dependent solely on the SES background of parents.

Several empirical studies have supported these scholars' assumptions. According to Valencia and Henderson (1981), socioeconomic background explains only 13% of the common variance in student's achievement. The correlation between socioeconomic background and students' academic achievement, according to Gurin and Epps (1975), is very low and insignificant. Gustafson (1991) went even further with the assertion that it is possible for students from low income level families to do even better than those from families with high incomes. Gustafson indicated that low SES students share similar concerns about their future occupational careers. Home and school are highly valued by the students. On the other hand, high and upper SES students do not value success and achievement in school as much and they value freedom of choice and individualism.

Family and school are not nearly as important in the lives of these students. Gustafson reasoned that low SES students may exceed high SES students as a result of these differences.

Relationship Between SES and Academic Achievement in Developing Countries

The factors affecting academic achievement in Western nations may not be the same those in developing nations. Differences in perceptions, cultural values, and norms are major variables which affect the behavior of people, according to Farrell (1974). Relatively few studies have examined the impact of SES on student achievement in less-developed countries, and findings have varied from one country to another.

Foster (1977) and Johnstone (1983), who found that differences between developed and developing nations exist, reported that the concepts which are of some utility in the study of SES in relation to students' academic achievement in Western societies can be quite misleading when applied to developing nations. The differences between developed and less-developed countries in terms of social structures, educational systems, and job educational related requirements are significant and can cause the concepts to be entirely different. The multiple bases of social and cultural differentiation such as race, ethnicity, regional origin, and religion, which all exist in Western nations,

particularly in the United States, are not applicable in developing countries. At least, such differences do not exist in Jordan, where there is only one language, one ethnic racial group, and one dominant religion.

In developing nations, formal schooling has only recently been instituted for most of the population. Schools and colleges, initially imported institutions, were either brought in by the ruling elites or imposed by colonial rule. Schooling, therefore, is not a true reflection of the social and cultural fabric of the society. As a result, colleges and universities in developing countries, according to Foster (1977), have not yet developed into true learning and experiencing institutions. They often serve as training centers where rote memory rather than analytical skills and reasoning abilities is emphasized.

Because schools and colleges are not part of the cultural heritage of many of these countries, education and college degrees do not determine who obtains key positions in the society. Inherited tribal status or the traditional position of families in the society still largely determines who gets key posts and has prestige, status, and power. Academic achievement in developing countries, as a result, is less dependent on socioeconomic factors. Social background may affect, to some degree, who goes to school,

but once in attendance, other determinants play a more significant role.

Results of socioeconomic studies in developing countries are contradictory; some indicate that SES is a less important influence on achievement than other factors, and other studies indicate that SES is a major factor affecting academic achievement. There are several possible explanations for this contradiction. First, all developing countries are not alike and do not have the same history or cultural patterns. Two other reasons for these differences among developing countries, according to Niles (1985), are the differences in language development and the fact that there is no social gap between the rich and the poor, as is the case in more developed societies. Students' achievement, therefore, is not controlled by the influence of SES boundaries, as in developed countries. As a result, students from poor families in less developed countries may do as well as or better than children of more affluent families.

Language development also influences students' achievement in Third World countries. This is due, in part, to the fact that children, and the society in general, do not have as much exposure to printed materials, television, and radio as do children in developed societies. Financially advantaged students, therefore, are not necessarily given an advantage by being exposed to such

educational tools. In the Third World, parental support among poor families may be even stronger than that of wealthy families, according to Niles (1985). Because poor parents do not want their children's lives to be as harsh as theirs, it is not surprising that students from these families do as well, or better than, students from wealthy families.

Scholars such as Riddell (1989), Cooksey (1981), and Heyneman (1976a, 1976b) found no significant relationship between parents' socioeconomic background and students' academic performance in the countries that they studied. Riddell argued, for example, that SES is less important to school achievement than are other factors, such as the role of the school or teachers. He concluded that the primary attribute to SES cannot be generalized beyond industrial societies. Cooksey (1981), in a study of education in Uganda, found that pupils from the least developed poor rural areas had the highest level of performance on the school entrance examination. Cooksey's research buttressed an early work in Uganda by Heyneman (1976a, 1976b), with basically the same results.

In a later work conducted in eight developing countries, namely Uganda, Kenya, Rhodesia, Ghana, Papua, New Guinea, Somalia, and India, Heyneman (1980) found no relationships between students' achievement and their

parents' SES. According to Heyneman, the conclusion that socioeconomic background has little influence on school performance may be explained by the fact that poor students can be highly motivated because of the belief that doing well in school means achievement of better occupational future. Because of the similarities in language development between the rich and poor in the countries studied, wealth itself did not determine students' achievement. The most influential factor affecting children's achievement in Heyneman's study was the attitudes and expectations of students' families. Poor parents who wanted more for their children demanded that they study hard, score high grades in courses, and pay attention to their homework.

In contrast, however, a number of other scholars, including Carnoy and Leven (1971), Simon and Sumru (1972), Schiefelbein and Farrell (1973), Carnoy and Thias, (1974), Lanzas and Kingstone (1981), and Niles (1985), found that SES influenced students' achievement in the developing countries they studied. For instance, in a study of high school students in Puerto Rico, Carnoy and Leven found a strong relationship between SES and students' academic achievement. Similarly, in Tunisia, Simon found a strong relationship between SES and the academic achievement of high school students. Simon's research was replicated with the same results by Carnoy and Thias in 1974. Carnoy and Thias, who examined the educational system in Tunisia,

reported that academic achievement, presented as GPA, was significantly related to SES, at the .10 level.

Schiefelbein and Farrell reported similar results from their study of primary and high school students in Chile. In another study, of college students in Zaire, Lanzas and Kingstone found a strong relationship between SES and students' academic achievement. They cautioned readers, that their findings may be misleading because of the fact that SES variables were difficult to determine because it is acceptable in Zairian culture for children to move from one family member of the tribe to another for months or years. Such moves may be based on the socioeconomic capabilities of relatives. Thus, the background of a student cannot be clearly documented and the finding of a significant relationship may be misleading. In another study of Sri Lanka, Niles also found a strong relationship between SES and students' academic achievement in high school.

The contradictory findings regarding the significance of the effect of SES on the achievement of students in LDCs has not been fully explained. It is possible that the effects of SES in countries with closer contacts with the West are more similar to those of Western countries than are those of new countries or countries with fewer contacts. This lack of understanding about the significance of SES on achievement encourages a closer look at the importance of families in motivating their children.

To summarize, the literature shows that the SES background of parents generally has a positive significant correlation to students' academic achievement (Harmon, 1980). The parents' education and level of income are the most important factors affecting the academic achievement of their children.

It is contended that when the mother is educated, she is able to play a major role in her child's school performance, according to Stevenson and Baker (1987). She may be active in selecting courses and teachers for her sons or daughters, and may interact formally or informally with school personnel. These findings that the mother's and father's level of education is a strong factor affecting school achievement, however, was challenged by Barham (1984) and Gurin and Epps (1975) who argued that there is no significant direct relationship between the education of either the mother or father and a child's school performance.

High income is believed to foster positive school performance because a place to study, magazines to look at, dictionaries to use, and cultural stimulation are related to parental income (Bloom, 1964; Dave, 1963; Fotheringham & Creal, 1980; Marjoribanks, 1972a, 1972b; Parkinson, Wallis, Prince, & Harvey, 1982; Wolf, 1964). Nevertheless, Scarr and Weinberg (1981) argued that concerned parents who are poor could stimulate their children's school performance

more positively than unconcerned parents who are rich. Thus, the attitude of parents rather than their wealth could determine their influence on children's academic achievement. On the other hand, Spaeth (1976) argued that a direct relationship exists between the effects of economic resources and a child's school performance. Families with more material resources are able to provide a greater variety of stimuli.

Finally, students with less well-educated mothers and less well-employed fathers show a high level of anxiety which may affect their school performance, according to Allen (1981). For students to succeed, they need to receive warmth and financial support from their parents (Astin & Cross, 1981).

The thrust of this literature generally is that SES affects the students' academic achievement in industrialized nations, specifically the United States of America. Parents' occupation, education, and level of income all are influential factors in determining their sons' and daughters' school performance. Parents' education, mainly the fathers' education, has been found to be the major factor determining children's academic achievement. Among minorities, especially in the Mexican-American community, the education of mothers rather than fathers is the main influence on children's academic performance.

Studies of the relationship between SES and students' academic achievement in developing countries, on the other hand, are contradictory. Some show a positive correlation between SES and academic achievement, whereas others show no relationship between SES and students' performance in schools and colleges. Inconsistencies in findings regarding the relationships between SES and students' academic achievement in developing countries may be a result of the various histories and cultural differences in the countries. The lack of SES studies in the Middle Eastern region demonstrates a need for more research because these nations are emerging tribal societies. Because no research on this topic has been undertaken there, the Jordanian society is examined in the following section to determine whether the literature applies in that nation.

Jordan and Its Educational System

Jordan, formally the Hashemite Kingdom of Jordan (HKJ), is a small, Arab developing country bordered by Syria to the north, Israel to the west, Iraq and Saudi Arabia to the east, and Saudi Arabia and the Gulf of Aqaba on the Red Sea to the south. It was established in the post-World War I era (1920-1922) as an Emirate or Principedom under the trusteeship of Great Britain. The East Bank of the River of Jordan, the present site of the State of Jordan, is about 90,649 square kilometers (Gubser, 1983). Jordan is ruled by a hereditary

monarchy of the Hashemite family which originally came from Hejaz, the western province of the present Saudi Arabia, specifically from the holy City of Mecca.

The newly created Kingdom of Jordan is a desert nation with an annual rainfall of only 12 inches per year and a homogenous population of approximately 3 million. Its people are basically Arabs. The few ethnic minorities, such as Circassians, Shishanis, and Armenians, migrated long ago from Northeast Asia and have lived peacefully among the majority of the population (Gubser, 1985). Even today there are no social tensions among Jordanian minority groups (Gubser, 1985, p. 18).

The land which makes up the present Hashemite Kingdom of Jordan was a part of the Ottoman Empire until the end of World War I. After the War, in 1920, the Principedom of Jordan (the East Bank) and Palestine on the West Bank were placed under the British mandate by the League of Nations. The British created separate administrations for the trusteeship, one for Trans-Jordan and another for Palestine (Nyrop, 1979, p. 3). Trans-Jordan gained nominal independence in 1924 with Emir Abdullah Bin Hussein, the grandfather of the present King Hussein of Jordan, as the first officially proclaimed Prince of the new Hashemite Principedom of Trans-Jordan. During the period of the trusteeship to its formal independence as a Kingdom in 1952,

Jordan faced harsh economic conditions and political conflict with neighboring Jews.

Militant organizations of both Jewish and Palestinian Arabs were formed soon after 1924, and actively undertook guerilla activities against each other. The Jewish organizations claimed that Palestine was their promised land described in the Torah, whereas the Palestinian Arabs believed that it was their homeland because they had lived there for eons. Emir Abdullah from Trans-Jordan supported the Arab Palestinians' claim and made it possible for the Jordanian farmers and bedouins to join the Palestinian Arab Organizations in their struggle against the Jews. Palestinian militants were allowed to establish training bases in Trans-Jordan, and Emir Abdullah supported them militarily, economically, and politically. The logic behind his support was that the Arab Palestinians and Jordanians were all brothers as Arabs; therefore, they should help each other against those who would take their lands, the Israelites. In 1938, Prince Abdullah officially met with the heads of Palestinian organizations and the chiefs of major Palestinian tribes to demonstrate the unity between Jordanians and Palestinians and to stress that they should stand together against the Zionists who would take their country. An agreement among these Arab groups lead the Emir to act as if he were the leader of a newly united country which included part of Palestine.

As a result of the agreement between the Arab groups, the British agreed to the union of Trans-Jordan and the West Bank of Palestine in 1938. Later, when the British trusteeship ended, in 1952, the West Bank territory and the area known as Trans-Jordan became the Hashemite Kingdom of Jordan. Accordingly, all inhabitants of the East and the West Banks became Jordanians living in one country with one flag, one currency, and one constitution. Despite the existence of the state of Jordan, the Palestinian Liberation Organization (PLO) was created in 1963 by the Arab league under the influence of Jamal Abdel Nasser of Egypt to be the government in exile for the West Bank and Gaza Strip. The PLO soon began challenging Jordanian rule over the West Bank and undertook attacks on the Jews in Israel from the East Bank. Despite the political uncertainty as a result of the existence of the PLO, Jordan continued to support the West Bank financially until 1989.

Jordan faced severe economic conditions because the economy of Trans-Jordan was based primarily on primitive agricultural techniques, and only 13% of the total land area was arable. The lack of water resources for irrigation, especially after Israel diverted the water from the Jordan river in the 1960s, left the country totally dependent on rain-fed agriculture (Dempsey, 1983). There were no industries in the country except for a few flour mills, two cigarette companies, and several service enterprises such as

transportation and storage facilities. Before 1950, the people eked out a bare subsistence with little hope for improvement. In 1946 the yearly per capita income in Jordan was approximately 50 U.S dollars and most of the country's citizens were illiterate (Mazur, 1979).

The 1948 Arab-Israeli War and its aftermath caused a large influx of Arab Palestinian immigrants to Jordan and revolutionized the country's social, economic, and political environment (Al-Tall, 1979, p. 81). Despite the fact that Palestinian Arabs and Jordanians shared a common background in history, language, and religion, they differed in numerous other aspects. The Palestinians were much more urban and educated and had undergone entirely different experiences than had the East-Bank Jordanians. For instance, during the British mandate of Palestine, the Palestinians had experienced a much more urban, cosmopolitan lifestyle, and had contacted and competed with Jewish settlers, which created differences in their values, norms, and beliefs (Sayigh, 1978, pp. 199-202). Economically, some of the Palestinian immigrants brought with them new skills, know-how, and wealth with which they started new businesses in Jordan. Jordan, as a result, experienced technological innovations which helped change its simple rural economy to an emerging industrial-commercial economy. The traditional economic order based on families, villages, and tribes involved in agriculture gradually lost its dominance and was

replaced by an emerging industrial and worker society with modern associations, such as unions, guilds, clubs, and employment groups.

The challenges to government were also greatly intensified by the flood of in-migration and increases in the population. The nation was faced with the problem of how to make its small and undeveloped governmental system capable of meeting the new challenges of the political and economic system. Demand for greater political participation and a voice in governmental decisions also increased, and national economic planning became necessary.

The consecutive external challenges created by the instability in the region further aggravated Jordan's problems. The Arab-Israeli wars of 1948, 1967, 1974, and 1982 all had a severe impact on Jordan and led to new waves of immigrants from Palestine and Lebanon, which increased the country's population further. Similarly, the 1990-1991 Gulf War complicated Jordan's society because large numbers of Palestinians in Kuwait and the Gulf States were forced to migrate to Jordan. This conflict also caused Jordan to lose a source of employment for many of its people, as well as income from remittances and grants from the oil-rich states. These waves of immigration seriously affected the Jordanian society. Despite all of the changes, however, the basic tribalism and traditional values remain a dominant factor in the society.

As the process of change and modernization occurred, the social classification of people changed and began to overlap. Originally, Jordan's society was divided from a demographic point of view, according to the lifestyle of people. The categorization of nomadic, semi-nomadic, semi-sedentary, and sedentary explained the society. Nomads or bedouins were herdsmen who followed their flocks. They had no permanent houses and lived in tents. The semi-nomadic people also raised livestock which they moved for short distances, but they maintained permanent residences, usually in small towns. Similarly, semi-sedentary people lived in small towns and cultivated more crops than did the nomads or semi-nomads, even though they also raised some livestock. Finally, those categorized as sedentary in their lifestyles lived and worked in towns or cities. Change and modernization altered this categorization of society into a more labor-oriented classification. Some figures concerning Jordan today, which reflects a general idea about the country, are provided in Table 1.

The economic problems faced by Jordan as a result of mass migration and the instability of the country forced many people to change the way they earned their living. Many of the herdsmen and farmers were literally forced to seek work in towns or cities. Because they lacked education and had few or no work skills, they could move only into lower paying, unskilled positions or join the military.

Table 1

National Figures Concerning Jordan

Area	96,000 sq. km.
Population	3,000,000*
Male	52.0%
Female	48.0%
Urban	31.9%
Rural	68.1%
Population growth	3.2%
Labor force	
Male	77.5%
Female	22.5%
Gross domestic product	2,541,000,000 JD
Per capita income	847 JD
Life expectancy	
Male	64.2
Female	67.8
Illiteracy rate (above the age of 15)	19.9
Fertility rate	6.2
Family size (including parents) . . .	8.2

Note. From Statistical Yearbook, United Nations, 1992, pp. 1200-1209.

*1.2 million persons live in Amman.

Other more skilled laborers or small shop owners who lived in larger towns or cities were able to find more skilled positions and to earn better salaries. Still other inhabitants of the towns and cities who had even better education or work experiences were able to acquire white collar positions with the government or to open their own small businesses. This group lived a better life than either of the other two groups. Those at the top of the economic and political ladder, government officials and the military leadership, held the most prestigious and lucrative positions, lived a more comfortable life, and enjoyed high occupational status. The royal family obviously heads this categorization.

Sound data on Jordanian socioeconomic strata does not exist. Some researchers still stratify Jordan's society as urban, rural, and bedouins. Others stratify the people as workers working in towns, farmers (fellah), urbanites, and bedouins (Gubser, 1983). Gubser (1985), who conducted research in the Al-Karak district of Jordan, classified Jordanians into low, middle, and upper social classes. He contended that the role of the family, the tribe, the personalized decision-making processes in private and public businesses and informal groupings in Jordan make it difficult to study social classes in Jordan in the same way social classes are studied in Western nations. The concepts of SES and social classes in Jordan are not identical with

those in the West. As a result, the assumed relations between SES and academic achievement in Jordan may not follow the Western pattern.

Evolution and Role of Public Education in Jordan

The seeming dissimilarities between the patterns of relationships between SES and academic achievement in Jordan and the Western World stems, in part, from differences in the history of Jordan's development, including the evolution of public education. Jordan's history has been one crisis after another. After the 1948 War between the Jews and Arabs, the flood of Arab Palestinian immigrants into Jordan overwhelmed the country's economic ability to absorb this new population. National planning to deal with the host of new challenges was forced upon the government. An appraisal of available natural resources showed that other than people, the nation had little to build on. The possibility of expanding agriculture was seriously limited, and few resources were available except minerals such as potash and phosphates.

An evaluation of human resources showed a similar lack of skills. There was practically no educational system in Jordan before the 1950s. Educational affairs had continued according to education laws of the Ottoman Empire until 1939 when a ministry of education was finally established. Despite the creation of the ministry, the British

administration did very little to promote public education in the country. Expenditures on education actually declined from an average of 6% of the total budget in the 1920s to about 2.5% in the 1940s. A lack of financial resources limited the number of schools. Before the 1950s, there were only 24 schools in Jordan, of which only four were senior high schools. No post-high school of any kind existed in the country during the mandate period. In fact, no college or university existed in the country until 1962.

Primary education in Jordan for the masses was left entirely to religious groups and the Mosques, which taught basic reading and writing for the purpose of understanding the Qora'an (the Holy Islamic Book). A small number of fortunate students were either sent by the government or at their own expense to pursue a college education in other countries such as Syria, Egypt, Lebanon, Iraq, or to the Western countries, mainly to the United Kingdom (Al-Tall, 1979, pp. 41-67). The number of those fortunate enough to receive a college education was so small as to be insignificant. It was common at that time, to find not a single individual in some small towns who could read or write a letter or even write their names. The majority of people were either employed in farming or taking care of cattle, and there was little awareness about the need for education or schooling.

This all changed radically after the 1950s. Investments in human resources became the main focus of the government of Jordan as a result of the need for national development. Human resources were recognized as the country's most important assets. Planners sought to capitalize on the skills and education of Jordanian people (Kanovsky, 1970). Education was seen as an agent for change and a factor of integration to bridge the gap between native Jordanians residing on the East Bank and the new Jordanian immigrants from the West Bank (Al-Tall, 1979, pp. 83-85). Investments in human capital development programs for the period 1964 to 1970 totalled about 148.4 million dollars and more was spent for education in each of the following national plans.

The number of schools in the country rose rapidly, and the total enrollment of students increased from only 12,120 in 1946 to 414,907 in 1966, to 698,205 in 1980, and 987,905 in 1991, while educational expenditures increased from 150,000 dollars to 12.2 million dollars in 1966, and to 145.3 million dollars in 1991. The budget distribution, student enrollment, and faculty members of the four state universities in Jordan are shown in Table 2.

Thirty-two vocational schools were created, with a total enrollment of 3,503 in 1966, and the university of Jordan was opened as the first higher educational

Table 2

Distribution of Budget, Student Enrollment, and Academic Staff for Jordan State Universities as of 1992-1993

Institute	Budget (Jordanian Dinar)*	Student Enrollment	Faculty		
			Male	Female	Total
University of Jordan	19,290,000	23,000	689	115	804
Yarmouk University	13,537,500	16,000	458	67	525
Mo'utah University	21,965,000	2,200	167	0	167
Science and Technology	21,784,500	4,500	248	51	299
TOTAL	76,577,000	45,700	1,562	233	1,795

Note: From Statistic Department Report, Higher Education Ministry, 1993. Amman-Jordan. pp 3-4.

*One Jordanian Dinar was equivalent to 1.49 U.S. dollars (Al-Doustar. 1992, May 17).

institution in the country. As a result of this emphasis on human resource development and education, Jordan today has become the educational leader throughout the Middle Eastern region. This emphasis on human development helped the new nation meet its economic challenges. It enabled a large number of Jordanians to accept positions in oil rich countries such as Saudi Arabia, the Gulf States, and Libya, and other Arab states as well as Western countries and,

consequently, increased the wealth of Jordan through remittances made by these employees to their families at home (Birks & Sinclair, 1980, p. 280).

The literacy rate in Jordan by 1970 had improved to 70%, which was the highest among Middle Eastern Countries. Since the 1970s, student enrollment in all levels of schools has doubled, as shown in Table 3. The literacy rate has continued to improve, to 81%, as of 1992.

In addition, three new state universities were established: Yarmouk University in 1976, Mo'utah University in 1981, and the Science and Technology University in 1988. The number of college graduates from Jordan universities increased from only 167 in 1966 to 6,970 in 1988, and to 8,004 in 1992 (Jordan Ministry of Planning, 1993, pp. 64-65).

Providing jobs for the growing population in Jordan continues to be a major challenge which affects the attitudes of Jordanians toward education. The desire for education and to obtain a college degree is now a part of most Jordanians' goals. Families compete with each other to demonstrate that their children are bright, that they go to school and college, that they obtain college degrees, and that they reach high positions and earn good incomes. Parents consider the achievements of their children as a matter of pride and honor for the entire family.

The distribution of undergraduate and graduate Jordanian students by specialized fields in higher education in 1990-1991 is shown in Table 3.

Table 3

Students in Jordan State Universities by Specialized Fields as of 1990/1991

Profession	Under-graduate Students	Graduate Students	Total
Arts and humanities	4,540	223	4,763
Education	2,223	1,444	3,667
Islamic law	1,348	280	1,628
Law	1,901	108	2,009
Economics and administrative science	6,510	498	7,008
Sciences	5,748	449	6,197
Engineering and technology	3,623	626	4,249
Medicine	784	73	857
Public health and paramedical dentistry	20	0	20
	524	0	524
Nursing	1,028	23	1,051
Pharmacy	837	0	837
Agriculture	1,363	214	1,577
Physical ed	1,023	83	1,166
Anthropology	0	106	106
Languages	0	47	47
Veterinary med	58	0	58
Medical tech	28	0	28
Total	31,558	4,174	35,732

Note. From Higher Education Ministry, Statistic Department's Report, 1991, pp. 3-6.

Economically, education creates a higher rate of employment and increases the level of the labor force's productivity. For example, public education makes it possible for workers and employees to learn new techniques in banking, agriculture, industry, and service sectors. Education has also helped Jordanians to work abroad. Workers such as physicians, engineers, and other highly skilled and trained professionals and managers migrate for a few years to the oil producing Arab countries such as Saudi Arabia, Iraq, and the Gulf States. With the exception of Iraq, these neighboring countries are still in need of foreigners to help fill thousands of governmental and private sector jobs and to help promote development. The migration of skilled Jordanian workers to these countries began in the late 1960s, doubled in the 1970s, and tripled in the early 1980s. Many Jordanian workers held professional and managerial positions with high salaries, and transferred large remittances in hard currencies to Jordan, thus benefiting the national economy.

After the oil-price revolution in the mid 1970s, a flood of Jordanian workers left the country for better-paying jobs in the oil-rich Arab countries. By 1980, the number of Jordanian immigrants to the neighboring rich Arab states reached 305,000, and left the country with a shortage of labor in certain job areas (Dwairi, 1990, p. 246). The shortage of labor in Jordan change it from a labor exporting

country to a labor-importing country as well. An open-door immigration policy made it easy for foreign workers to obtain work permits and to migrate to Jordan. In general, the in-migrating workers filled low-skilled positions such as restaurant waiters and waitresses, domestic help, hotel and motel employees, nurses, and constructions workers. Many of these workers migrated to Jordan from countries such as Egypt, Sri Lanka, Philippines, Syria, and Lebanon.

By the mid-1980s, Jordan was pursuing the two-way labor migration policies which had been made possible by the improved education of its people. Increasingly, Jordanians are expected to go to college, obtain a degree, migrate abroad for a better paying job, and provide remittances for the country while leaving Jordan's labor market with a continuous labor shortage. The importation of labor from the LDCs results in savings because of the less expensive foreign labor. In other words, the opportunity costs of skilled Jordanians migrating abroad are maximized, whereas the costs of low-skilled jobs in the Jordanian labor market are minimized by the use of low cost foreign workers. These two labor conditions serve to the advantage of the Jordanian economy.

Jordanian skilled workers, however, began to be forced to leave the Arab oil rich countries in the Gulf as a result of the Iraq-Iran war in 1982. Later they were almost completely forced out by the Gulf crisis in 1990. Many lost

good employment opportunities and high monthly incomes as a result, and Jordan's economy suffered.

Education in Jordan has also encouraged investment and the establishment of businesses. Before the 1960s, Jordanians were hesitant to invest or to establish or change their own businesses because of the risk involved. There was little entrepreneurial spirit or skill in the country. However, the spread of education changed the attitudes of the people and provided them with the skills and attitudes necessary to save and invest in various projects and businesses.

Their new attitudes helped to create new employment opportunities in the country and, thus, improved the economy. Items such as olives, chickens, apples, grapes, figs, apricots, beans, tomatoes, wheat, and lemons are now being produced. Jordanian farmers no longer see themselves solely as subsistence farmers, but rather see farming as a special type of business.

Education from a social point of view is also significant to modern Jordanians. Education has enabled Jordanians to live a different lifestyle and to aspire for social mobility. Social mobility, which has come from having education in the last 10 years or so, has challenged Jordanians' attitudes toward the tribal system, which long has been dominant. Many of the society's mores also are

being challenged and changed by the increasingly educated youth of the country (Jureidine & McLaurin, 1989).

Increased education of the people has also affected more personal aspects of life. The position and role of Jordanian women, for instance, has been modified, as can be seen in the social habits and customs regarding marriage, education and work, family structure, and political participation.

The increasing level of education in Jordan has not only played a major role in changing economic and social life in Jordan. It has also influenced its political life. Before the 1960s, institutions of government, such as free elections for parliament (people representatives), political parties, free press, protection of civil rights, and the right to vote were undeveloped. The growing pluralism created by the increasing number of Arab immigrants after the various regional events, plus the changes caused by increasing education, the cosmopolitan immigrants, and those who travelled to other Arab states or the Western World, have helped to create greater demands for pluralism and democracy.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

Introduction

Six hundred and twenty students in four Jordanian state universities were surveyed from three selected programs of each institution. A cover letter, shown in Appendix B, and survey instrument, shown in Appendix D, were designed to gather data which were used to determine the relationship between the students' GPA and their families' socioeconomic status (SES). The survey instrument was composed of demographic items, standardized global SES questions used in similar previous research with minor modifications, and five additional questions related to cultural characteristics in Jordan. The surveys were administered by four Jordanian professors between August 7 and October 10, 1993. The Statistical Package for the Social Science-X Personal Computer Plus (SPSS-X/PC+) software program was used to analyze the 609 usable responses; 11 of the surveys returned were not usable. The research design; population; selection of the sample; procedures for collecting data; the instrument used; the field test of the instrument; and treatment of the data, including coding and statistical

techniques and tests used in this study, are also explained in this chapter.

Research Design

Survey research, also called sample survey, was used for this study in order to determine whether or not a relationship exists between the SES of students in Jordan state universities, defined as a combination of parents' income, occupation, and education, and their academic achievement, as measured by GPA. Survey research makes it possible to accurately assess the characteristics of whole populations by studying samples, according to Kerlinger (1986).

The focus of this study was on the socioeconomic variables of students in three groups, low, middle, and high socioeconomic background, with three sub-categories in each group. For instance, the high SES group was subdivided into high-high, high, and low-high; the middle SES group was subdivided into high-middle, middle, and low-middle; and the low SES group was sub-divided into high-low, low, and low-low.

Students' GPAs were also measured on a 9-level scale, where level 9 was the highest achievement and level 1 was the lowest. GPA categories were considered as follow: category 9 (very high) is a grade of 96 to 100, category 8 (high) is a grade of 91 to 95, level 7 (low-high) is a grade

of 86 to 90, category 6 (high-middle) is a grade of 81 to 85, category 5 (middle-middle) is a grade of 76 to 80, category 4 (low-middle) is a grade of a 71 to 75, category 3 (high-low) is a grade of 66 to 70, category 2 (middle-low) is a grade of a 61 to 65, and category 1 is a grade of 60 or below. Thus, the study was designed to determine relationships between 9 levels of GPA, ranging from a low of 60 or less to a high of 96 to 100, and 9 levels of every SES variable, ranging from a very low or low-low to a very high or high-high level, as shown in the questionnaire--question 12 for GPA and questions 1, 2, 3, 4, 5, and 6 for SES. The study design also allowed for determining, on the aggregate, the relationship between students' numerical GPA and their SES as three general levels--level 1 as low-, level 2 as middle-, and level 3 as high-SES.

In addition, the study design allowed for determining the relationships between students' GPA and five cultural variables related to parents' background. These variables were (a) number of siblings, (b) religious commitment, (c) parents' kinship, (d) families' influence; and (e) reason for families' influence on students' educational aspirations. Each variable was rated on a 4-point ordinate scale ranging from "strongly" as the highest to "not at all" as the lowest.

A cover letter, instrument, and the procedures for collecting data were submitted for approval to the

University of North Texas Review Board for the Protection of Human Subjects in Research (IRB). A letter of approval from the chairperson of the IRB was received stating that "the proposal of this project has been approved by the IRB and is exempted from further review under 45 CFR 46.101" (Sandra Terrell, Institutional Review Board, August 23, 1993).

Population

The total number of students enrolled at the four Jordanian state universities in the spring of 1993 was approximately 45,700 students. The University of Jordan in Amman had 23,000 students enrolled, Yarmouk University in Irbid had 16,000 students enrolled, the Science and Technology University in Irbid had 4,500 students enrolled, and Mo'utah University in Al-Karak had 2,200 students enrolled (Higher Education Ministry of Jordan, 1993).

Because freshmen were excluded from the survey, the targeted population was less than the total enrollment. Freshmen were excluded in order to minimize any possible bias in the results caused by the fact that they did not have enough accumulated credit hours to be considered a reliable measure for GPA evaluation. Another reason for excluding freshmen students from this study was that, when holding other variables constant, senior students tend to achieve higher grades than do freshmen. In this sense, the issue of possible grade inflation was avoided. The

population of sophomore, junior, and senior students included approximately 31,000 students. A breakdown of the population included 15,000 students at the University of Jordan, 11,500 at Yarmouk University, 3,000 at Science and Technology University, and 1,500 at Mo'utah University.

Selection of the Sample

Due to the nature of this study, a convenience sampling of selected programs in each of the four Jordanian universities was used. The programs selected were believed to represent the majority of students in the four Jordanian institutions. Convenience sampling is a form of non-probability sampling in which knowledge of strata of the population is used to select sample members who are representative, typical, and suitable for certain research purposes. Convenience sampling has been used in many studies of social strata. Its main purpose is to obtain representative samples by including presumably typical areas of groups in the sample. For instance, Kerlinger (1986, p. 120) stated that "one may take available samples at hand; classes of seniors in high school, sophomores in college, and the like . . . if used with reasonable knowledge and care."

Because the estimated population of sophomore, junior, and senior students at Mo'utah University was the smallest of the four institutions, 1,500 students, the sample from

Mo'utah University was used as the base for the sub-samples from the other three universities. That is, a sample of 30 or $(30/1,500)$ students from Mo'utah University was used as a base for sampling the other universities. Proportional sub-samples were then taken from the other four universities. For instance, 300 subjects were surveyed from the University of Jordan because the computation of 15,000 multiplied by the ration of $30/1,500$ equals 300. Similar computations were made for Yarmouk University and the Science and Technology University. The sample size for Yarmouk University, with an estimated population of 11,500 students, was $(11,500 \times 30)/1,500$, or 230. The Science and Technology University, with an estimated population of 3,000 students, required a sample of $(3,000 \times 30)/1,500$, or 60. The total sample size from the four universities was 620, or $30 + 300 + 230 + 60$. The survey was conducted in such a way as to ensure that subjects came from the major departments of the four universities. The procedures used for collecting data are explained in the next section.

Procedures for Collecting Data

Four professors at the respective colleges assisted in conducting the interviews. Once permission was obtained from the school administration to conduct the interviews, a list of all students in three departments believed to be representative of the entire student body was obtained in

order to proceed with random sampling from within the conveniently selected programs. Students from the random sampling list were then asked to participate, and were interviewed in classrooms on the campuses. In order to ensure the accuracy of information, the subjects were asked to give permission for the surveyors to obtain their GPAs from the registrars' office. Other information pertaining to the SES of their families was accepted at face value, however, because of the belief that sons and daughters in the Jordanian culture would know and report truthfully matters pertaining to the SES of their families.

Because each of the four universities emphasizes a different mission, a system was created to ensure that the students interviewed were reasonably representative of the colleges. Under this system, survey subjects were chosen from the following representative departments:

1. The University of Jordan
 - a. The Department of Economics and Public Administration provided a total of 100 survey subjects.
 - b. The Education Department also provided a total of 100 students.
 - c. The Professional Colleges, including the Medical College, the Engineering College, and the Law School, provided a total sample of 100 subjects.

2. Yarmouk University
 - a. The Department of Economics and Public Administration provided a total of 80 survey subjects.
 - b. The Literature Department also supplied 80 subjects.
 - c. The Business Administration Department furnished 80 students.
3. The Science and Technology University
 - a. The Science Department provided 20 survey subjects.
 - b. The Medical College supplied 20 students.
 - c. The Engineering School furnished another 20 subjects for the survey.
4. Mo'utah University
 - a. The Business Administration Department provided a total of 10 survey subjects.
 - b. The Political Science Department supplied 10 subjects.
 - c. The Science Department furnished another 10 interviewees.

Because the survey was based on a random sampling of conveniently selected departments within the colleges, it was difficult to produce a sample which reflected an equal number from all three categories--high-, medium-, and low-SES families. To ensure that all three SES groups were

reasonably represented in the survey, it was necessary to continue taking random interviews using a non-replacement method. An unequal, but reasonably representative, sub-sample of every SES category thus was obtained.

The subjects ($N = 620$) were surveyed as to their SES classification (high-high, middle-high, low-high, high-middle, middle-middle, low-middle, high-low, middle-low, or low-low) even though the size of the sub-samples was not exactly equal--unequal samples (Hinkle, Wiersma, & Jurs, 1988, pp. 239-286). The total sample of 620 surveys exceeded the theoretical minimum size required for large populations and ensured an even higher degree of accuracy in the results of this study. For instance, a total sample size for a large population is described as 385 or more. McCall (1982) suggested the use of the following formula for determining sample size for a large population.

$$\underline{n} = \pi(1 - \pi)Z^2 / \epsilon^2$$

or

$$\underline{n} = 0.50 (1 - 0.50)(1096)^2 / (0.05)^2 = 385$$

where

- \underline{n} is the estimated number of individuals necessary in the sample for the desired precision confidence,
- π is the preliminary estimate of the proportion in the population parameter,

- z is the two-tailed value of the standardized normal deviate associated with the desired level of confidence, and
- ϵ is the desired precision, acceptable error, or half of the maximum acceptable confidence interval.

When no prior information is available for π , an estimate is required. McCall suggested that the product of $\pi(1 - \pi)$ assumes a maximum value when $\pi = 0.50$. The sample for this study exceeded these minimums.

Four professors were appointed to administer the survey questionnaire. They were Anwar Al-Qura'an, Associate Professor of Economics at Yarmouk University; Musa Al-louzi, Assistant Professor of Public Administration at the University of Jordan; Ghazi Momani, Assistant Professor of Finance at Al-Isra College (a private school), who surveyed the students from the Science and Technology University; and Mr. Osamah Al-Qudah, high school teacher at Al-Hadeithah (a private secondary school in Amman), who surveyed the students from Mo'utah university. A letter of instruction, shown in Appendix A, on how the survey was to be administered was sent to Al-Qura'an who acted as the local coordinator to ensure that the procedures were followed at each of the sites. The instrument used for this research is discussed in the following section.

Instrument for the Study

The instrument used in this study was a five-page survey which was translated into four pages in Arabic. The first page contained an identification code and demographic items. The remaining pages contained the 12 SES questions, including 1 question about students' GPA. The questions for this research were designed to meet the following specific criteria:

1. The questions were related to the research problem and the research objectives.
2. The questions were appropriate to college students in their environment.
3. All items in the questions were clear and unambiguous.
4. The questions were simple to answer.
5. All of the questions were close-ended.
6. Construction of the questions was based upon theoretical premises related to the study.

The demographic data requested included information relative to the students' identification (ID), institution, gender, and social classification. Demographic items were requested to provide a description of the population sampled and to determine if any of the demographic variables were associated with the level of the students' academic achievement. The main purposes for requesting subjects' identification numbers was to enable the surveyors to verify

GPA's in the registrar's office, to use a table of random numbers, and to follow up the respondents for interviews.

Other questions were developed and modified based upon the review of literature related to measures of SES variables used in similar studies in developed and developing countries. Literature about economic, social, and cultural aspects of Jordan society was also examined. For instance, when categorizing income level, measures such as gross national product, per capita income, salary ladder, and family size were all taken into consideration. For occupation, criteria such as employment structure and relatively equal pay within, and ordinal distance between, the nine occupational categories were considered. For the level of education, the years of schooling and the type of degrees in schools and universities in Jordan and abroad were also considered.

The theoretical basis for the questionnaire rested on concepts of SES from previous studies (Alwin, 1976; Duncan, 1961; Neelsen, 1975). Additional questions were raised which were believed to be related to academic achievement in Jordan, such as the kinship distances between mothers and fathers of students, religious practices of parents, number of siblings, mothers' social origin, and the degree of family influence on educational aspirations. Such questions were raised to determine how cultural factors affect students' academic achievement.

Although SES is a universally used concept, it must be adapted to the economies, cultures, and employment structures of various countries. For instance, the average monthly income of a typical middle-class family with five children in Jordan is about 800 Jordanian Dinar, or 1,200 U.S. dollars. This income level enables Jordanian families to live comfortably, to purchase homes and cars, and even to save money. Similarly, other levels of income must be identified in each society before they can be categorized. The employment structures of each country are also different; thus, surveys about occupations must be designed to fit the structure of the society studied. Educational structures vary in the same way. Questions pertaining to SES, therefore, must be posed by individuals who are well-acquainted with the society. The use of various groups and panels of Jordanians in the creation of the questions ensured that the instrument was appropriate for conditions in Jordan.

The theoretical background of measures used in this study was the same as other theoretical backgrounds of measures of SES that are commonly understood and are used in various studies among different countries. For instance, SES is usually composed of three categories: the first is level of income, which is the amount of money earned by parents in a time period, either monthly or annually; the second is occupation, which is a ranking of positions and

jobs based on pay scales; and the third is level of education, which is the number of years completed in schools and colleges (Alwin & Thornton, 1984; Duncan, 1961; Nam & Terrie, 1982). However, because levels of income, employment structure, and the educational system vary from one country to another, it was necessary that they be considered in relation to the social, economic, and educational structures of Jordan. Because such measures reflect the reality of Jordan's social setting, they are reasonably reliable but are not necessarily applicable to other countries. In other words, a high income level individual in Jordan might be considered a low income level individual in the United States.

Low-income individuals in Jordan are those who live with their families in one or two rooms, usually without sewer connections or cars, and sometimes without running water. The income of such families generally does not exceed 500 Jordanian Dinar, or 750 U.S. dollars per month. Low-income Jordanians are those who have few skills, such as farmers, clerks, elementary and secondary school teachers, low-ranking military officers, and individuals working in low-level government jobs.

Middle-income individuals, who are called white-collar workers, either work for the government or in the growing private sector. The income of such families is between 500 and 2,000 Jordanian Dinar, or 750 to 3,000 U.S. dollars per

month. High-income individuals are those who work in the highest management levels for the government, for the army, or who own large firms in the private sector. They are professionals, industrialists, and large land owners. Their average monthly income is above 2,000 Jordanian Dinars (Gubser, 1983, 1985). The income of the elite families is believed to be much higher than 2,000 Jordanian Dinars. Many of their children are sent abroad to study.

GPA has been used as a sole measure for students' academic achievement in a variety of studies (Allen, 1981; Armstrong, 1981; Atkinson & Raynor, 1974; Barham, 1984; Gurin & Epps, 1975; Hall, 1969; Holland & Nichols, 1964; McKeachie, 1976; Richards, 1970; Trachtman, 1975). The decision to use GPA as the only measurement criterion for this study was based upon these studies, and because no other tests or other criteria are used in Jordan universities.

In support of the importance of grades, scholars such as Richards (1970) explain that grades are the most significant indicator of the achievement of college students. Moreover, the grades of college students are often the only indication of students' accomplishments kept in students' permanent college records. Grades are viewed by students, colleges, employers, and society as the most significant assessment of students' achievement and future potential (Richards, 1970, p. 320).

Field Test of the Instrument

Two further steps were taken in the development of the questionnaire for this research. First, a pool of 25 Jordanians residing in the Dallas-Fort Worth area were asked to review and discuss a draft of the questionnaire pertaining to the SES of families of Jordanian students. Questions about the income of upper-, middle-, and lower-income families helped to determine these SES categories. Similarly, questions about the categorization of occupation and education helped in making the survey.

After producing the first draft, the SES questions were modified, revised, and sent for further review by a panel of 10 Jordanian professionals residing in the Dallas-Fort Worth area. Panel members were asked to evaluate the instrument and to suggest changes. Changes were made to the categories after a consensus was reached. The revised questionnaire was then sent to a panel of four Jordanian experts residing in other states for review, reevaluation, and final revision. The questions, approved by the panel of experts, are shown in Appendix C.

All items and instructions in the questionnaire were translated from English into the Arabic language in order to ensure that those administering and taking the survey could easily understand the questions. To ensure that the translation did not change the meaning of concepts, a panel of Jordanians who were fluent in English and Arabic were

asked to assist in the translation process. Questions were translated from English to Arabic and sent to the panelists who reviewed the translation and suggested changes in the translation. Once a revision was made, the questionnaire was returned to the panel for another round of review. In this review, various translations of each of the panel members were evaluated by other panel members. That is, questions translated by individual A were sent to individual B. Suggested corrections were again made and the process continued until a consensus was reached that both the English and Arabic versions conveyed the same idea.

Treatment of the Data

After data from the survey were collected, they were coded and analyzed using several statistical techniques and tests. These are explained in the following section.

Coding

All items in the questionnaire were coded and recorded in ordinal form. Numbers from 1 to 9 were assigned to all items in the questionnaires. In other words, 9 was higher than 8, 8 was higher than 7, and so on. All items in the questionnaire were written in rank order. For example, items 9, 8, and 7 of every question indicated the status of high SES parents, in which item 9 indicated a high-high level, item 8 indicated a high level, and item 7 indicated a low-high level of SES. Similarly, items 6, 5, and 4 of

every question indicated the status of middle SES parents, in which item 6 indicated a high-middle level, item 5 indicated a middle level, and item 4 indicated a low-middle level of SES. Items 3, 2, and 1 of every question indicated the status of low SES parents, in which item 3 indicated a high-low level, item 2 indicated a low level, and item 1 indicated a low-low level.

Statistical Techniques

Data for the 609 respondents were scored in ordinal form and transferred to tables for analysis. All seven research questions were tested at the 0.05 level. The first six research questions, including fathers' and mothers' income, occupation, and education, were tested separately using Pearson's chi-square of goodness-of-fit test between the expected and observed frequencies of students' GPA. As explained in the SPSS-X' manual (Norusis, 1992), this is the most commonly used test for non-parametric studies and is often described for $R \times C$ contingency tables.

All SES expected percentages were distributed along with the percentages of the actual GPA in a 9-by-9 contingency table and were compared with the observed frequencies. Data were tested using Pearson's chi-square with 64 degrees of freedom and the formula $(r-1) \times (c-1)$ or $(9-1) \times (9-1) = 64$. This means that once the expected frequencies in any 63 of the categories were determined, the

expected frequency for the 64th category was uniquely determined.

In order to determine whether or not there were relationships between parents' SES variables and the students' GPAs, the Pearson chi-square goodness-of-fit as a measure of association was used. In this case, the income, occupation, and education of both parents were categorized into nine levels and the students' GPAs were divided into nine categories as well (Hinkle et al., 1988, p. 555). As shown in Appendix E, there were six contingency tables with 81 cells for each. The 81 cells were the product of 9 rows by 9 columns with 64 degrees of freedom, which was the product of $(c-1)(r-1)$ or $(9-1)(9-1)$.

Pearson's chi-square is recognized as a useful first step in determining whether or not a relationship exists between any two variables. However, the result of the Pearson chi-square fails to allow for the quantifying or determining of the direction and strength of the relationships. For this reason, another test, the Spearman's correlation, which measures both the direction and the extent of association between the variables involved in the study, was considered. The first six research questions were also retested using Spearman's correlation coefficient.

Spearman's correlation was chosen over other statistical tests because it seemed to be the most

reasonable test and because all the variables for testing the first six questions were listed in ordinal form in which a test for comparing ranked ordinal scores is possible. In this case, and because of the ranked ordinal scores of this study, the Spearman correlation, also called a Spearman rho coefficient, was used. Another reason for using the Spearman's correlation was to test for direction and strength of relationships.

The one-way ANOVA was used for testing the seventh research question, which determined whether, on the aggregate, a relationship existed between the means of students' GPA coded in numerical values and parents' SES coded as only three groups--high, middle, and low. For testing this specific question, all subjects were rearranged and divided into three groups based upon the average score of all items in all questions of mothers' and fathers' SES combined.

The one-way ANOVA was the most reasonable technique for testing differences between the three SES groups because the data for GPA were also gathered in numerical values. The one-way ANOVA was chosen over the two-way ANOVA because there was one independent variable with three levels for the SES levels in question seven. The two-way ANOVA, for example, is appropriate when two or more independent variables with various levels exist (Hinkle et al., 1988). The one-way ANOVA was also chosen over the t-test because

the t -test is appropriate when there is only one independent variable with only one or two levels. For instance, in the seventh question, there were three groups of parents' SES; thus, the t -test was not appropriate.

The one-way ANOVA was also used to test five other cultural questions, which were stated in chapter one. These questions concerned (a) number of siblings in families; (b) religious background; (c) kinship of parents; (d) families' educational aspirations; and (e) reason for families' educational aspirations for students. These five cultural questions consisted of four categories each and were rated on a 4-point ordinate scale with the assumption that nonlinear relationships existed between the categories of every question and the GPAs of students. Therefore, the Eta (η) coefficient was chosen to test for relationships between these variables and students' GPA (Hinkle et al, 1988. pp. 540-542). Eta's coefficient was the appropriate measure for this purpose because the students' GPA as a dependent variable was measured on an interval scale and the aforementioned five variables as independent variables were measured on ordinal scale (Norusis, 1992. pp 200-201).

Next, because the one-way ANOVA was not appropriate for determining which groups' mean differed significantly, the Tukey/Kramer method was applied. The Tukey/Kramer method was chosen over the Tukey and the Newman/Keuls because the three groups' size differed. For instance, the Tukey and

the Newman/Keuls methods are both appropriate for pairwise comparisons following significant F -ratios in the ANOVA when the groups' size is equal.

One-way analysis of variance, as a statistical technique, has been successfully used in similar studies (Hall, 1969). The use of an F -ratio made it possible to determine whether or not there was a difference between group means.

In addition, two ratio computations were used to determine the average GPA of gender and social class, whether they were farmers, bedouins, or urbanites. These computations were based on the ratio between the sub-sample of every group and the total sample of the survey for this study.

CHAPTER 4

FINDINGS

Introduction

As shown in Appendix F, the data were analyzed using the Statistical Package for the Social Sciences-Personal Computer Plus (SPSS-X/PC+). Of the 620 responses received from students in the four state universities in Jordan, 609, shown in Appendix E, were usable. The remaining 11 surveys were not used because information in more than one question of each survey was missing. In notes on 2 of the 11 unusable surveys the respondents stated that the survey was only an attempt to collect information for hidden political purposes.

The survey of this study was administered between August 7 and October 10, 1993 by four Jordanian professors teaching at these universities who are former colleagues of the researchers. The survey was completed and returned for analysis by October 10, 1993 and an excellent sample was obtained. The actual rate of return of the survey was 98% which was the product of 609 usable surveys divided by the total of 620. Reasons for such a high actual rate of usable return were that an important target determined in the design of the study was to receive 620 surveys. The

individuals who administered the survey continued surveying students until this objective was obtained. The survey of this study, furthermore, was administered by professors in the four universities and was not a mail survey. As a result, the goal of obtaining 609 usable surveys did not present a problem. The fact that the individuals who administered the survey of this study were faculty members at these universities help achieve a very high level of control because of their status among students. Of the 620 returned, 609 usable surveys were analyzed using the Statistical Package for Social Science-Personal Computer Plus (SPSS-X/PC+) software.

The main objective of this study was to investigate whether or not there was a relationship between the academic achievement of students in four state universities in Jordan and their parents' socioeconomic background. To achieve the objectives of this study, the relationships between students' GPA and the fathers' and mothers' socioeconomic status (SES) were tested, and were represented by six variables; (a) fathers' income, (b) mothers' income, (c) fathers' occupation, (d) mothers' occupation, (e) fathers' education and (f) mothers' education. Relationships between these variables and the students' GPAs on a 9-ordinate-scale level were tested separately. They were then tested as one combined variable of the SES of parents on a three-level basis, namely low, middle, and high

SES. The objective of this study embodied seven purposes which were tested using both the Pearson chi-square and the Spearman's correlation, with only one exception. The exception was for purpose seven, which purports "to test, on the aggregate, the three SES levels versus the numerical values of GPA." Purpose seven then was tested using the one-way analysis of variance technique (one-way ANOVA).

Another five related questions were tested using the one-way ANOVA, the Tukey/Kramer method, and the Eta's correlation coefficient. Two demographic questions, gender and social life style, were also explained using the ratio computations' method. In the following section, the results from these statistical tests are drawn. The statistical results of the other five related questions, concerning number of siblings, degree of religious commitment, parents' kinship, degree of family influence, and reason of family influence, are also drawn. Results from ratio computations concerning demographic data, gender and social class based on life style, are also listed later in this chapter.

Relationship Between Fathers' Income and Students' GPA

The first purpose of this study was to investigate whether or not there was a relationship between the fathers' income and the students' GPA in four state universities in Jordan. All respondents were asked the same question pertaining to the fathers' income, which was then divided on

a 9-point scale from level 1 as low-low to level 9 as high-high. The frequencies at all levels of the fathers' income and the number of students with GPAs within each category are shown in Table 4. As can be seen, 67 fathers had a high-high income level; 38, low-high; 36, high-middle; 53, middle-middle; 55, low-middle; 98, high-low; 134, middle-low; and 82, low-low. Income levels were categorized as low-low up to high-high and were rated on an ordinal scale with 9 points from 1 to 9. Likewise, GPA categories were divided into nine categories and rated on an ordinal scale with 9 points from 1 to 9. Therefore, the number of observed frequencies of high-high GPA or the points of 9s on the ordinal scale were paired with a high-high income level of fathers and were found, as shown in Table 4.

As shown in Table 4, of the 67 (11.0%) whose fathers had a high-high income level, none received a high-high level of GPA. Similarly, as shown in Table 4, the number of students with fathers in the various income categories and the frequency their GPA are in a similar ranking as well as the percentage those in the total income category.

Table 4Students' GPA by Fathers' Income

Level of Income	Frequency	Percent	Frequency of GPA in Category
9	67	11.00	0
8	38	6.20	0
7	46	7.60	0
6	36	5.90	0
5	53	8.70	0
4	55	9.00	0
3	98	16.10	1
2	134	22.00	0
1	82	13.50	2
Total	609	100.00	3

The Pearson chi-square was used to determine whether or not a relationship existed between the fathers' level of income and the students' GPA. The computed value of the Pearson chi-square was found to be 91.95, whereas the critical value of chi-square under 64 degrees of freedom, with a 0.05 level of significance was found to be 79.08. Because the computed value of the Pearson chi-square (91.95) exceeds the critical value from the table, which is 79.08, the null hypothesis that there was no relationship between the fathers' income and the students' GPA is rejected. This implies that the alternative hypothesis that there was a

relationship between the fathers' income and the students' GPA is accepted.

However, in order to determine the direction and the strength of the relationship between fathers' income and students' GPA, Spearman's correlation statistical test was applied. It was found that the value of Spearman's correlation r is -0.15. As shown in Table 5, the observed significance level ($p = 0.0001$, two-tailed) was less than the accepted significance level for this study (0.05, two-tailed); therefore, it was concluded that the relationship between the fathers' income and the students' GPA was negative, and statistically significant at the 0.05 level.

Table 5

Pearson's Chi-Square and Spearman's Correlation of Students' GPA by Fathers' Income

Statistic	Value	DF	2-Tail Probability
Pearson's chi-square	91.95*	64	0.01
Spearman's correlation	-0.15*		0.0001

Note. *significant at 0.05 level.

Relationship Between Mothers' Income and Students' GPA

The second purpose of this study was to investigate whether or not a relationship existed between the mothers' income and the students' GPA. All respondents were asked the same question pertaining to their mothers' income, which was then divided on a 9-point scale from level 1 as low-low up to level 9 as high-high. The frequencies at all levels of the mothers' income and the number of student's GPA within each category are shown in Table 6. As can be seen, 44 mothers had a high-high income level; 24, middle-high; 28, low-high; 17, high-middle; 21, middle-middle; 21, low-middle; 34, high-low; 152, middle-low; and, 268, low-low. Income levels were categorized as low-low up to high-high and were rated on a ordinal scale with 9 points from 1 to 9. GPA categories were also divided into nine categories and rated on an ordinal 9-point scale from 1 to 9. Therefore, the number of observed frequencies of high-high GPA or the points of 9s on the ordinal scale were paired with the high-high income level of mothers, as shown in Table 6.

As shown in Table 6, 7.21% of the 44 students whose mothers had a high-high income level, none had a high-high level of GPA. Similarly, the number of students with mothers in the various income categories and the frequency their GPA are in a similar ranking, as well as the

Table 6

Students' GPA By Mothers' Income

Level of Income	Frequency	Percent	Frequency of GPA in Category
9	44	7.30	0
8	24	3.90	0
7	28	4.60	0
6	17	2.80	0
5	21	3.40	0
4	21	3.40	0
3	34	5.60	1
2	152	25.00	0
1	268	44.00	2
Total	609	100.00	3

percentages those in the total income category are also shown in Table 6.

Pearson's chi-square was used to determine whether or not a relationship existed between the mothers' level of income and the students' GPA. The computed value of Pearson's chi-square was found to be 85.88, whereas the critical value of chi-square under 64 degrees of freedom with .05 level of significance was found to be 79.08. Because the computed value of Pearson's chi-square exceeds the critical value, and because the significance level ($p = 0.04$, two-tailed) is less than the significance level of

this study (0.05, two-tailed), the null hypothesis that there was no relationship between the mothers' income and students' GPA is rejected. This implies that the alternative hypothesis that there was a relationship between the mothers' income and the students' GPA is accepted.

However, in order to determine the direction and the strength of the relationship between the mothers' income and the students' GPA, Spearman's correlation statistical test was applied. The value of Spearman's correlation r was -0.15. As shown in Table 7, the observed significance level ($p = 0.01$, two-tailed) was less than the significance level set for this study (0.05, two-tailed); therefore, it was concluded that the relationship between the mothers' income and the students' GPA was negative and was statistically significant at 0.05.

Table 7

Pearson's Chi-Square and Spearman's Correlation of Students' GPA by Mothers' Income

Statistic	Value	DF	2-Tail Probability
Pearson's chi-square	85.88*	64	0.04
Spearman's correlation	-0.09*		0.0001

Note. *significant at 0.05 level.

Relationship Between Fathers' Occupation
and Students' GPA

The third purpose of this study was to investigate whether or not there was a relationship between the fathers' occupation and students' GPA. All respondents were asked the same question pertaining to their fathers' occupation, which was then divided on a 9-point scale from level 1 as low-low to level 9 as high-high. The frequencies at all levels of the fathers' occupations and the number of students with GPAs within each category are shown in Table 8. As indicated in the table, 27 fathers had a high-high level occupation; 76, middle-high; 60, low-high; 62, high-middle; 45, middle-middle; 166, low-middle; 50, high-low; 18, middle-low; and 105 low-low. Levels of occupation were categorized as low-low to high-high and were rated on an ordinal 9-point scale from 1 to 9. Likewise, GPA categories were divided into nine categories and rated on an ordinal scale with 9 points, from 1 to 9. Therefore, the number of observed frequencies of high-high GPA or the points of 9s on the ordinal scale were paired with the high-high occupation level of the fathers and were found as shown in Table 8.

As shown in Table 8, of the 27 students who made up 4.4% of the total respondents and whose fathers had an high-high level of occupation, none was found to be in the high-high level of GPA. Of the 76 students (12.5%) whose fathers had an middle-high level occupation, none was found to be in the middle-high GPA category.

Table 8

Students' GPA by Fathers' Occupation

Level of Occupation	Frequency	Percent	Frequency of GPA in Category
9	27	4.40	0
8	76	12.50	0
7	60	9.90	0
6	62	10.10	0
5	45	7.40	1
4	166	27.30	0
3	50	8.20	0
2	184	3.00	0
1	105	17.20	2
Total	609	100.00	3

Pearson's chi-square was used to determine whether or not a relationship existed between the fathers' level of occupation and the students' GPA. The computed value of the Pearson chi-square was found to be 118.81, whereas the critical value of chi-square under 64 degrees of freedom with a 0.05 level of significance was found to be 79.08. Because the computed value of Pearson's chi-square exceeds the critical value and because the significance level ($p = 0.00004$, two-tailed) is less than the significance level of this study (0.05, two-tailed), the null hypothesis, that there was no relationship between the fathers' occupation

and the students' GPA, was rejected. This implies that the alternative hypothesis, that a relationship existed between the fathers' occupation and the students' GPA, is accepted.

However, to determine the direction and the strength of the relationship between the fathers' occupation and the students' GPA, the Spearman's correlation statistical test was applied. The value of Spearman's correlation r is -0.18. As shown in Table 9, the observed significance level ($p = 0.00002$, two-tailed) is less than the accepted significance level for this study (0.05, two-tailed); therefore, it was concluded that the relationship between the fathers' occupation and the students' GPA is negative, and is statistically significant at 0.05.

Table 9

Pearson's Chi-Square and Spearman's Correlation of Students' GPA by Fathers' Occupation

Statistic	Value	DF	2-Tail Probability
Pearson's chi-square	118.81*	64	0.0004
Spearman's correlation	-0.18*		0.0000

Note. *significant at 0.05 level.

Relationship Between Mothers' Occupation
and Students' GPA

The fourth purpose of this study was to investigate whether or not a relationship existed between the mothers' occupation and the students' GPA. All respondents were asked the same question pertaining to their mothers' occupation, which was then divided on a 9-point scale from level 1 as low-low up to level 9 as high-high. The frequencies at various levels of the mothers' occupation and the number of students with GPAs within each category are shown in Table 10.

Table 10

Students' GPA by Mothers' Occupation

Level of Occupation	Frequency	Percent	Frequency of GPA in Category
9	16	2.60	0
8	27	4.40	0
7	13	2.10	0
6	19	3.10	0
5	26	4.30	0
4	13	2.20	0
3	55	9.00	1
2	345	56.70	0
1	95	15.60	2
Total	609	100.00	3

As shown in Table 10, 16 mothers had a high-high occupation level; 27, middle-high; 13, low-high; 19, high-middle; 26, middle-middle; 13, low-middle; 55, high-low; 345, middle-low; and 95, low-low. Occupation levels were categorized as low-low to high-high and rated on an ordinal scale with 9 points, from 1 to 9. Therefore, the number of observed frequencies of a high-high GPA or the points of 9s on the ordinal scale were paired with the high-high level of occupation of mothers and were found, as shown in Table 10. As also shown in Table 10, none of the 16 students who made up 2.6% of the total respondents and whose mothers had a high-high occupation level received a high-high level GPA.

The Pearson chi-square was used to determine whether or not a relationship existed between the mothers' level of occupation and the students' GPA. The computed value of the Pearson chi-square was found to be 86.96, whereas the critical value of chi-square under 64 degrees of freedom with a 0.05 level of significance was found to be 79.08. Because the computed value of Pearson's chi-square exceeds the critical value, and because the significance level ($p = 0.002$, two-tailed) is less than the significance level of this study (0.05, two-tailed), the null hypothesis that there was no relationship between the mothers' occupation and the students' GPA is rejected. This implies that the alternative hypothesis that a relationship existed between the mothers' occupation and the students' GPA is accepted.

However, to determine the direction and the strength of the relationship between the mothers' occupation and the students' GPA, Spearman's correlation statistical test was applied. It revealed that the value of the Spearman's correlation r is -0.14. As shown in Table 11, the observed significance level ($p = 0.0004$, two-tailed) was less than the accepted significance level for this study (0.05, two-tailed); therefore, it was concluded that the relationship between the mothers' occupation and the students' GPA was negative, and was statistically significant at the 0.05 level.

Table 11

Pearson's Chi-Square and Spearman's Correlation of Students' GPA by Mothers' Occupation

Statistic	Value	DF	2-Tail Probability
Pearson's chi-square	86.96*	64	0.02
Spearman's correlation	-0.14*		0.0004

Note. *significant at 0.05 level.

Relationship Between Fathers' Education
and Students' GPA

The fifth purpose of this study was to investigate whether or not a relationship existed between the fathers'

education and the students' GPA. All respondents were asked the same question pertaining to their fathers' education, which was then divided on a 9-point scale from level 1 as low-low to level 9 as high-high. The frequencies at various levels of the fathers' education and the number of students with GPAs within each category are shown in Table 12. As shown in Table 12, 19 fathers had a high-high education level; 35, middle-high; 168, low-high; 52, high-middle; 111, middle-middle; 78, low-middle; 55, high-low; 53, middle-low; and 38, low-low. Education levels were categorized as low-low to high-high and rated on an ordinal scale with 9 points from 1 to 9. Likewise, GPA categories were divided into 9 categories and rated on an ordinal scale with 9 points from 1 to 9. Therefore, the number of observed frequencies of a high-high GPA or the points of 9s on the ordinal scale were paired with a high-high education level of fathers and were found, as shown in Table 12. As also shown in Table 12, only 1 of the 19 students (3.1%) whose fathers had a high-high education level was found in the high-high GPA category.

The Pearson chi-square was used to determine whether or not a relationship existed between the fathers' education and the students' GPA. The computed value of the Pearson chi-square was found to be 104.19, whereas the critical value of chi-square with 64 degrees of freedom, at 0.05

Table 12

Students' GPA by Fathers' Education

Level of Education	Frequency	Percent	Frequency of GPA in Category
9	19	3.10	1
8	35	5.70	1
7	168	27.60	0
6	52	8.50	0
5	111	18.30	1
4	78	12.80	0
3	55	9.10	0
2	53	8.70	0
1	38	6.20	0
Total	609	100.00	3

level of significance, was found to be 79.08. Because the computed value of the Pearson chi-square exceeds the critical value, and because the significance level ($p = 0.001$, two-tailed) is less than significance level of this study (0.05 , two-tailed), the null hypothesis that there was no relationship between the fathers' education and the student's GPA is rejected. This implies that the alternative hypothesis that there was a relationship between the fathers' education and the students' GPA is accepted.

However, in order to determine the direction and the strength of the relationship between the fathers' education

and the students' GPA, Spearman's correlation statistical test was applied. The value of Spearman's correlation r was found to be -0.02. As shown in Table 13, the observed significance level ($p = 0.04$, two-tailed) exceeds the accepted significance level of this study (0.05, two-tailed); therefore, it was concluded that the relationship between the fathers' education and the students' GPA was negative, but not statistically significant at the 0.05 level of significance.

Table 13

Pearson's Chi-Square and Spearman's Correlation of Students' GPA by Fathers' Education

Statistic	Value	DF	2-Tail Probability
Pearson's chi-square	104.19*	64	0.001
Spearman's correlation	-0.02		0.540

Note. *significant at 0.05 level.

Relationship Between Mothers' Education
and Students' GPA

The sixth purpose of this study was to investigate whether or not a relationship existed between the mothers' education and the students' GPA. All respondents were asked the same question pertaining to their fathers' education,

which was then divided on a 9-point scale from level 1 as low-low up to level 9 as high-high. The frequencies at various levels of the mothers' education and the number of students with GPAs within each category are shown in Table 14. As can be seen, 8 mothers had a high-high education level; 22, middle-high; 53, low-high; 71, high-middle; 137, middle-middle; 94, low-middle; 44, high-low; 67, middle-low; and 113, low-low. Education levels were categorized as low-low up to high-high and rated on an ordinal scale with 9 points from 1 to 9. GPAs were also divided into 9 categories and were rated on an ordinal scale with 9 points, from 1 to 9. Therefore, the number of observed frequencies of a high-high GPA or the points of 9s on the ordinal scale were paired with a high-high education level of mothers and were found, as shown in Table 14. As also shown in Table 14, none of the 8 students (1.3%) whose mothers had a high-high education level was found in the high-high GPA category.

The Pearson's chi-square was used to determine whether or not a relationship existed between the mothers' education and the students' GPA. The computed value of the Pearson chi-square was found to be 89.82, whereas the critical value of chi-square under 64 degrees of freedom with a 0.05 level of significance was found to be 79.08. Because the computed value of the Pearson chi-square exceeds the critical value, and because the significance level ($p = 0.01$, two-tailed)

Table 14

Students' GPA by Mothers' Education

Level of Education	Frequency	Percent	Frequency of GPA in Category
9	8	1.30	0
8	22	3.60	0
7	53	8.70	0
6	71	11.70	0
5	137	22.50	0
4	94	15.40	0
3	44	7.20	1
2	67	11.00	0
1	113	18.60	2
Total	609	100.00	3

is less than the significance level of this study ($p = 0.05$, two-tailed), the null hypothesis that there was no relationship between the mothers' education and the students' GPA is rejected. This implies that the alternative hypothesis that there was a relationship between the mothers' education and the students' GPA is accepted.

However, to determine the direction and the strength of the relationship between the mothers' education and the students' GPA, the Spearman's correlation statistical test was applied. It was found that the value of the Spearman's correlation r is -0.09 . As shown in Table 15, the observed

Table 15

Pearson's Chi-Square and Spearman's Correlation of Students' GPA by Mothers' Education

Statistic	Value	DF	2-Tail Probability
Pearson's chi-square	89.82*	64	0.01
Spearman's correlation	-0.09*	0.01	0.01

Note. *significant at 0.05 level.

significance level ($p = 0.01$, two-tailed) is less than the accepted significance level of this study ($p = 0.05$, two-tailed); therefore, it was concluded that the relationship between the mothers' education and the students' GPA was negative, and statistically significant at the 0.05 level.

Relationship, on the Aggregate, Between Students' SES Background and Their GPA

The seventh purpose of this study was to investigate, on the aggregate, whether a relationship existed between the parents' SES and the students' GPA. For this purpose, the 9 levels of the parents' SES were reduced and encompassed into 3 SES levels in which the former levels 1, 2, and 3 were all considered as low SES levels and were rated as level 1. Similarly, levels 4, 5, and 6 were combined and rated as middle, or level 2. Levels 7, 8, and 9 also were combined and rated as level 3. Therefore, testing the seventh

research question, the GPA was considered to be three levels, level 1--low, level 2--middle, and level 3--high. All were analyzed with the GPA's numerical values rather than with the GPA's class interval. One-way analysis of variance (ANOVA) was applied to determine whether or not a significant difference existed between the means of the three groups.

Of the total number of 609 respondents, 299 students from a low SES background had a GPA with a mean of 72.39; 233 students from a middle SES background had a GPA with a mean of 70.08; and 77 students from a high SES background had a GPA, with a mean of 67.93. The results of the one-way ANOVA show that the computed F ratio is 10.29. The critical value from the table under the degrees of freedom 2 and 605 at a 0.05 level of significance, is 3.00. Because the computed value of the F ratio exceeded the critical value, the null hypothesis that the three group means did not differ is rejected. The results of the one-way ANOVA, including the F ratio, are shown in Table 16.

To determine which group means differed significantly, the Tukey/Kramer method was applied. The results of the Tukey/Kramer method are shown in Table 17. As can be seen, the mean GPA of group 1 (low SES) differs significantly from the mean GPA of groups 2 and 3 (middle and high SES). The mean GPA of group 2 (middle SES) differed but not significantly from that of GPAs of group 3 (high SES).

Table 16

One-Way Analysis of Variance of GPA by Low-, Middle-, and High-SES Students' Background

Source	DF	Sum of Square	Mean Square	F Ratio	F Probability
Between groups	2	54.19	27.09	10.29*	.0000
Within groups	606	1595.30	2.63		
Total	608	1649.49			

Note. * Significant at 0.05 level.

Table 17

Post Hoc Test for Unequal n's: The Tukey/Kramer Method

Mean Score	Group	3	2	1
67.93	3			
70.08	2			
72.39	1	*	*	

Note. Group 1 = Low SES, Group 2 = Middle SES, Group 3 = High SES;

*Pairs of means which differ from each other at the 0.05 level.

From the analysis using both the one-way ANOVA and the Tukey/Kramer method, it was concluded that a negative relationship existed between the parents' SES and the

students' GPA. As also shown in Table 17, the mean GPA of group 1 (low SES) was higher than both of the mean GPAs of groups 2 (middle SES) and 3 (high SES). The mean of group 2 (middle SES) was also higher than that of group 3 (high SES).

Examination of the data presented in Table 17 reveals that the mean of the GPAs in the low SES is significantly higher than the mean of the GPAs of both the middle and high SES groups. As also shown in Table 17, the mean of the GPAs in the middle SES group was not significantly higher than the mean of GPA of the high SES group.

Findings of Other Related Questions and Demographic Data

Frequencies and statistics for the demographic variables of survey respondents are provided in Appendix F. Using these data, a profile of the average survey respondent was drawn.

Five additional questions were answered from responses to the survey in order to determine how other factors relating to family backgrounds affect the academic achievement of students in Jordan's state universities. These questions concerned (a) number of siblings, (b) degree of religious commitment, (c) degree of the father's and mother's kinship, (d) degree of family influence on the student's educational aspirations, and (e) reason for families' influence on the student's educational

aspirations. Results of the responses to these questions are explained below.

Number of Siblings in the Respondents' Families

The portion of the survey used for this purpose asked respondents to indicate the number of siblings in their families. Respondents were provided with the following four choices for indicating the number of siblings in their families: "The number of siblings in my family is 2 or less." "The number of siblings in my family is from 3-5." "The number of siblings in my family is from 6-7." "The number of siblings in my family is 8 or more."

Of the 609 respondents, 76 stated that the number of siblings in their families was two or fewer, 174 stated that the number of siblings in their families was from two to three, 146 stated that the number of siblings in their families was from six to seven, and 213 respondents stated that the number of siblings in their families was eight or more. Results of the survey concerning the number of siblings in the respondents' families are presented in Table 18.

As shown in Table 18, the 76 students (12.5 %) who had two or fewer siblings in their families had an average GPA of 69.05, with a standard deviation of 7.54. The 174 students (24.0 %) who had from three to five siblings in

Table 18

Students' GPA by Number of Siblings in the Respondents' Families

Number of Siblings	Frequency	Percent	Mean of GPA	SD
2 or less	76	12.40	69.05	7.54
3-5	174	28.60	69.52	7.14
6-7	146	24.00	71.41	8.11
8 or more	213	35.00	72.40	9.22
Total	609	100.00		

their families had an average GPA of 69.52, with a standard deviation of 7.14. The 146 students (24.0 %) who had from six to seven siblings in their families had an average GPA of 71.49, with a standard deviation of 8.11. And, the 213 students (35.0 %) who had eight or more siblings had an average GPA of 72.40, with a standard deviation of 9.22.

One-way analysis of variance was used to determine whether or not significant differences existed between the four groups' mean. The one-way analysis of variance indicated that the computed F ratio was 5.54. The critical value of F distribution from the table with 3 and 605 degrees of freedom was 2.60. In order to reject or retain the null hypothesis, a comparison of the computed and the critical values of F ratio was made. Because the computed

value of F ratio exceeded the critical value, the null hypothesis that the four groups' mean did not differ is rejected. This implies that the alternative hypothesis, that the four group means differ significantly, is accepted. The result of the one-way ANOVA can be seen in Table 19.

Table 19

One-Way Analysis of Variance of GPA by Number of Siblings as Four Groups

Source	DF	Sum of Square	Mean Square	F Ratio	F Probability
Between groups	3	1118.29	372.76	5.54*	.0009
Within groups	605	40700.91	67.27		
Total	608	41819.21			

Note. *Significant at 0.05 level.

To determine which groups' means differed significantly, the Tukey/Kramer method was applied. The results of the Tukey/Kramer are shown in Table 20. As shown in the table, the mean of group 1 differed significantly from that of group 3 and group 4, but did not differ from the mean of group 2. The mean of group 2 did not differ significantly from the mean of group 3 or that of group 4.

Table 20

Post Hoc Test for Unequal n's: The Tukey/Kramer Method

Mean Score	Group	4	3	2	1
69.05	4				
69.52	3				
71.49	2				
72.40	1	*	*		

Note. Group 1 = 8 siblings or more, Group 2 = 5-7 siblings, Group 3 = 3-4 siblings, and Group 4 = 2 or fewer.

*Pairs of means which differ from each other at the 0.05 level.

And, the mean of group 3 did not differ significantly from the mean of group 4.

Religious Commitment of the Respondents' Families

In this section of the survey, the respondents were asked to mark the item that was applicable to their situation concerning the degree of their families' religious commitment. Four items were included in the question concerning religion: "My family is not religious at all." "My family is moderately religious." "My family is religious." "My family is strongly religious." Of the total 609 respondents, 41 stated that their families were not religious at all, 232 stated that their families were moderately religious, 249 stated that their families were

religious, and 87 stated that their families were strongly religious. Results of the survey concerning the religion of the respondents' families are presented in Table 21.

Table 21

Students' GPA by the Degree of Religious Commitment of Respondents' Families

Religious Commitment	Frequency	Percent	Mean of GPA	SD
Not religious at all	41	6.70	67.97	7.49
Moderately religious	232	38.10	69.31	7.10
Religious	249	40.90	70.89	7.35
Strongly religious	87	14.30	76.83	11.04
Total	609	100.00		

As shown in Table 21, the 41 students (6.7%) who came from nonreligious families had an average GPA of 67.97, with a standard deviation of 7.49. The 232 students (38.1) who came from moderately religious families had an average GPA of 69.31, with a standard deviation of 7.10. The 249 students (40.9%) who came from religious families had an average GPA of 70.89, with a standard deviation of 7.35. The 41 students (14.3%) who came from strongly religious

families had an average GPA of 76.83, with a standard deviation of 11.04.

One-way analysis of variance was used to determine whether or not significant differences existed between the four groups' mean. The one-way analysis of variance indicated that the computed value of F ratio was 21.31. The critical value of F distribution from the table with 3 and 605 degrees of freedom was 2.60. Because the computed value of the F ratio exceeded the critical value, the null hypothesis that the four groups' mean did not differ is rejected. This implies that the alternative hypothesis that the four groups' mean differ significantly is accepted. The results from one-way ANOVA can be seen in Table 22.

Table 22

One-Way Analysis of Variance of GPA by Degree of Families' Religious Commitment of Respondents as Four Groups

Source	DF	Sum of Square	Mean Square	F Ratio	F Probability
Between groups	3	3998.02	1332.67	21.31*	.0000
Within groups	605	37821.19	62.51		
Total	608	41819.21			

Note. *Significant at 0.05 level.

To determine which groups' means differ significantly, the Tukey/Kramer method was applied. The results of the Tukey/Kramer method are shown in Table 23. As can be seen, the mean of group 1 differs significantly from that of group 2, group 3, and group 4. The mean of group 2 does not differ significantly from that of group 3 or group 4. The mean of group 3 also does not differ significantly from the mean of group 4.

Table 23

Post Hoc Test for Unequal n's: The Tukey/Kramer Method

Mean Score	Group	4	3	2	1
67.97	4				
69.31	3				
70.89	2				
76.83	1	*	*	*	

Note. Group 1 = Strongly religious, Group 2 = Religious, Group 3 = Moderately religious, and Group 4 = Not religious at all.

*Pairs of means which differ from each other at the 0.05 level.

Kinship of the Survey Respondents' Parents

For this purpose of the study, respondents were asked to indicate the item that was applicable to their parents concerning the degree of their fathers and mothers' kinship. Four items were provided under the question concerning the

parents' kinship: "My mother came from outside the Arab world." "My mother came from another Arab country." "My mother came from Jordan but from a different tribe." "My mother came from Jordan, same tribe as father."

Of the total 609 respondents, 70 stated that their mothers came from outside the Arab world, 95 stated that their mothers came from another Arab country, 217 stated that their mothers came from Jordan but from a different tribe, and 226 stated that their mothers came from the same tribe as father. Results of the survey concerning the degree of kinship of the respondents' parents are presented in Table 24.

Table 24

Students' GPA by Degree of Kinship Between Mothers and Fathers

Mothers' Origin	Frequency	Percent	Mean of GPA	SD
Outside Arab world	70	11.60	72.62	10.55
Another Arab country	95	15.70	70.84	8.07
Jordanian, different tribe	217	35.60	70.74	7.86
Jordanian, same tribe as father	226	37.10	70.66	8.00
Total	609	100.00		

As shown in Table 24, the 70 students (11.5%) whose mothers came from outside the Arab world, had an average GPA of 72.62, with a standard deviation of 10.55. The 95 students (15.6%) whose mothers came from another Arab country had an average GPA of 70.84, with a standard deviation of 8.07. The 217 students (35.6%) whose mothers came from Jordan but from a different tribe had an average GPA of 70.74, with a standard deviation of 7.86. And, the 226 students (37.1%) whose mothers came from the same tribe as the father had an average GPA of 70.66, with a standard deviation of 8.00.

One-way analysis of variance was used to determine whether or not significant differences existed between the four groups' mean. As shown in Table 25, the one-way analysis of variance indicated that the computed value of F ratio was 1.09. The critical value of F distribution from the table with the 3 and 604 degrees of freedom was 2.60. Because the computed value of the F ratio was less than the critical value, the null hypothesis that the four groups' mean did not differ significantly is retained. This implies that the alternative hypothesis, that there were significant differences between the four groups' means was not accepted. Thus, there was no need to use the Tukey/Kramer method.

Table 25

One-Way Analysis of Variance of GPA by Parents' Kinship

Source	DF	Sum of Square	Mean Square	F Ratio	F Probability
Between groups	3	225.68	75.22	1.09	0.35
Within groups	604	41592.63	68.86		
Total	607	41818.31			

Degree of Family Influence on Respondents' Educational Aspirations

The portion of the survey used for this purpose asked respondents to indicate the item that was applicable to their situation regarding the degree of family influence on their education. Four items were provided on the question concerning family influence on the student's education:

"Family influence on my educational aspirations is great."

"Family influence on my educational aspirations is moderate." "Family influence on my educational aspirations is not much." "There is no family influence on my educational aspiration at all."

Of the 609 respondents, 432 stated that family influence was great, 130 stated that family influence was moderate, 27 stated that family influence was not much, and 20 stated that there was no family influence on their

educational aspirations at all. Results of the survey concerning the influence of families on the students' educational aspirations are presented in Table 26.

Table 26

Students' GPA by Families' Influence on Students' Educational Aspirations

Families' Influence	Frequency	Percent	Mean of GPA	SD
Great	432	70.90	71.25	7.88
Moderate	130	21.30	69.44	8.53
Not much	27	4.40	71.85	8.71
Not at all	20	3.40	72.90	12.98
Total	609	100.00		

As shown in Table 26, the 432 students (70.9%) whose families greatly influenced their educational aspirations had an average GPA of 71.25, with a standard deviation of 7.88. The 130 students (21.3%) whose families moderately influenced their educational aspiration had an average GPA of 69.44, with a standard deviation of 8.53. The 27 students (4.4%) whose families did not have much influence on their educational aspirations had an average GPA 71.85, with a standard deviation of 8.71. And, the 20 students (3.3%) whose families did not influence their educational

aspirations at all had an average GPA of 72.90, with a standard deviation of 12.98.

One-way analysis of variance was used to determine whether or not significant differences existed between the four groups' means. As shown in Table 27, the one-way analysis of variance indicated that the computed value of the F ratio was 2.09. The critical value of F distribution from the table with 3 and 605 degrees of freedom was 2.60. Because the computed value of the F ratio was less than the critical value, the null hypothesis that the four groups' mean did not differ significantly is retained. This implies that the alternative hypothesis, that there were significant differences between the four groups' mean, is not accepted. Thus, there was no need to use the Tukey/Kramer method.

Table 27

One-Way Analysis of Variance of GPA by Degree of Families' Influence on Respondents' Educational Aspirations

Source	DF	Sum of Square	Mean Square	F Ratio	F Probability
Between groups	3	430.88	143.62	2.09	0.09
Within groups	605	41388.33	68.41		
Total	608	41819.21			

Reason for Families' Influence on Students' Educational Aspirations

The portion of the survey used for this purpose of the study asked respondents to indicate the item that was applicable to their situation concerning family influence on their educational aspirations. Four items were included in the question concerning family influence on the students' education: "My family expected me to do as well as my mother and father." "My family wanted me to get a college degree just for pride's sake." "My family expected me to earn a better living than my father and mother." "My family wanted me to get a college degree so I could get a job and survive."

Of the total 609 respondents, 121 stated that their families expected them to do as well as their mothers and fathers, 275 stated that their families wanted them to have college degrees for pride's sake, 84 stated that their families wanted them to have college degrees to enable them to earn a better living than their fathers and mothers, and 129 stated that their families wanted them to earn college degrees in order to get jobs and survive. Results of the survey concerning the reasons families influenced the students' educational aspirations are presented in Table 28. As shown in Table 28, the 121 students (19.9%) whose families expected them to do as well as their mothers and fathers had an average GPA of 72.81, with a standard

Table 28

Students' GPA by the Reason for Families' Influence on Educational Aspirations

Reason for Families' Influence	Frequency	Percent	Mean of GPA	SD
To do as well as parents	129	21.20	70.95	9.00
Just for pride's sake	84	13.80	69.59	6.81
To earn a better living than parents	275	45.20	70.53	7.99
To get a job and survive	121	19.80	72.81	8.87
Total	609	100.00		

deviation of 8.87. The 275 students (45.2%) whose families wanted them to earn college degrees for pride's sake had an average GPA of 70.53, with a standard deviation of 7.99. The 84 students (13.8%) whose families wanted them to get college degrees in order to earn a better living than their fathers and mothers had an average GPA of 69.59, with a standard deviation of 6.81. And, the 129 students (21.2%) whose families wanted them to receive college degrees in order to get jobs and survive had an average GPA of 70.95, with a standard deviation of 9.00.

One-way analysis of variance was used to determine whether or not significant differences existed between the four groups' means. As shown in Table 29, the one-way analysis of variance indicated that the computed value of the F ratio was 3.05. The critical value of F distribution from the table with the 3 and 605 degrees of freedom was 2.66. Because the computed value of the F ratio exceeded the critical value, the null hypothesis that the four groups' means did not differ significantly is rejected. This implies that the alternative hypothesis that the four groups' means differed significantly is accepted.

Table 29

One-Way Analysis of Variance of GPA by Reasons of Parents' Educational Aspirations on Respondents

Source	DF	Sum of Square	Mean Square	F Ratio	F Probability
Between groups	3	624.76	208.25	3.05*	0.027
Within groups	605	41194.44	68.09		
Total	608	41819.21			

Note. *Significant at the 0.05 level.

The Tukey/Kramer method was used to determine which groups' means differed significantly at the 0.05 level.

The results of the Tukey/Kramer method are shown in Table 30. As can be seen, the mean of group 1 differed significantly from that of group 3. The differences between the means of group 1, group 2, and group 4 were not statistically significant at the 0.05 level. The differences between the means of group 2, group 3, and group 4 also were not statistically significant at the 0.05 level. The difference between group 3 and group 4 was not statistically significant at the 0.05 level.

Table 30

Post Hoc Test for Unequal n's: The Tukey/Kramer Method

Mean Score	Group	4	3	2	1
70.95	4				
69.59	3				
70.52	2				
72.81	1		*		

Group 1 = To get a job and survive, Group 2 = To earn a better living than parents, Group 3 = Just for pride sake, and Group 4 = To do as well as parents.

*Pairs of means which differ from each other at the 0.05 level.

Finally, the Eta (η) coefficient was used in order to test relationships between respondents' GPA and these variables, the number of siblings, the religious commitment, the parent kinship, the families' influence, and the reason

for parents' influence on the students' educational aspirations. Results of the Eta coefficient are shown in Table 31. As indicated, there were positive relationships between students' GPA and all of the five variables. For instance, the relationship between students' GPA and the number of siblings in the families was 0.16, the relationship between students' GPA and the degree of religious commitment in the families was 0.30, the relationship between students' GPA and the parents' kinship was 0.07, the relationship between students' GPA and the families' influence on students' educational aspirations was 0.10, and the relationship between students' GPA and the reasons for families' educational aspirations was 0.12. A review of the relationships indicates that religion had the strongest positive association with the students' GPA, whereas families' influence on students' educational aspiration had the weakest influence. However, relationships between all of the variables and the students' GPA were relatively weak.

Summary of Findings

The relationships between students' GPA in Jordan state universities and their fathers' and mothers' income, occupation, and education were negative and statistically significant at the 0.05 level with one exception. That exception was the relationship between students' GPA and

fathers' education, which was also negative, but not statistically significant at the 0.05 level.

Table 31

Eta (n) Coefficient of GPA by Number of Siblings in Families, Religious Commitment, Kinship, Families' Aspiration, and reasons for Families' Aspirations

Variable	Eta Coefficient
Number of siblings	0.16
Religious commitment	0.30
Parents' kinship	0.07
Families' educational aspirations	0.10
Reason for educational aspirations	0.12

Note. Eta (n) coefficient takes a value from zero to 1.00. It indicates whether or not there are associations between dependent and independent variables.

The Spearman's correlation coefficients of these relationships were: fathers' income = - 0.15; mothers' income = - 0.09; fathers' occupation = - 0.18; mothers' occupation = - 0.14; fathers' educations = - 0.02; and, mothers' education = - 0.09.

All SES variables were combined and compressed to three levels, namely high, middle, and low SES background. One-way analysis of variance and the Tukey/Kramer method were used to determine whether or not significant differences existed between the mean GPA of the low-, middle-, and high-SES groups. The mean GPA of students from the low SES was

higher than were the mean GPA of those from middle and high SES backgrounds. The mean GPA of students from the middle SES was also higher than the mean GPA of those from the high SES background. Results from one-way analysis of variance indicate that the mean GPA of students from the low SES differed significantly from that of students from middle and high SES backgrounds, at the 0.05 level. The mean GPA of students from middle SES did not, however, differ significantly from the mean GPA of students from the high SES background.

Eta correlation was used to determine whether or not relationships existed between students' GPAs and such variables as number of siblings, religious commitment, parents' kinship, families' influence on students' educational aspirations, and reasons for families' influence on students' educational aspirations. Positive relationships were found between students' GPA and all these variables. The Eta coefficients were: number of siblings = 0.16; religious commitment = 0.30; parents' kinship = 0.07; families' educational aspiration = 0.10; and reason for families educational aspirations = 0.12.

Finally, the average GPA of the total respondents was 70.94, with a standard deviation of 8.29. Of the 609 usable responses, 347 (57.0%) were from males, and 262 (43.0%) were from females. The average GPA of males as a group was 70.53, with a standard deviation of 8.77; the average GPA of

females as a group was 71.48, with a standard deviation of 7.59. Of the 609 usable responses, 197 (32.3%) students' fathers were farmers (fallah), 104 (17.1%) were bedouins, and 308 (50.6%) were urbanites. The average GPA of students whose parents were farmers was 71.64, with a standard deviation of 8.97; the average GPA of students whose parents were bedouins was 71.32, with a standard deviation of 9.37; and the average GPA of students whose parents were urbanites was 70.36 with a standard deviation of 7.38.

CHAPTER 5

SUMMARY, DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

All aspects of this study are summarized in this chapter--the research design, the implementation of the study, and findings concerning relationships between the socioeconomic status (SES) of students' families and the GPAs of students in the four state universities in Jordan. The findings are discussed, as they relate to the purposes of this study and whether they are consistent with previous research studies on similar subjects. The conclusions, including answers to the research questions of this study, are explained. Recommendations for future research are presented, along with possible applications for the findings in similar studies of college students' performance, particularly in small developing countries similar to Jordan.

Summary

The academic achievement of college students has frequently been studied by comparing students' GPA with a number of factors related to the SES of their parents. Many previous researchers have sought to explain the motivational factors which cause students to succeed. Factors normally

considered are the psychological needs of students, home environment, and parents' SES background.

Psychological needs and the need for personal satisfaction may act as a motivating factor for students as they attempt to gain self-esteem, a sense of accomplishment and social recognition by excelling in school. Students' home environment is also considered to be a factor in motivating scholastic achievement. Such aspects of the home environment as the way parents interact with their sons and daughters, the type of discipline and control strategies used, and encouragement of efficacious problem solving have been studied as variables that affect students' academic achievement.

Parents' SES is considered a major factor which affects students' academic achievement. Parents' beliefs and values, which are influenced by their level of income, occupation, and education, affect their children's academic achievement. This implies that the higher the parents' SES the higher the students' academic achievement. This finding is particularly prevalent in the West.

Factors affecting academic achievement in the West, however, are not necessarily the same as those in developing nations. Differences in perceptions, cultural values and norms, and economic capabilities are important variables which can affect individuals' behavior and their attitudes toward education. Such differences can also affect the way

individuals are academically motivated. That is, what motivates an average person in a developed country may not be the same as for a typical individual in a developing country. Therefore, SES can have a different impact on students' academic achievement in the West than in Third World countries. Results from previous research in developing nations concerning the impact of SES on academic achievement, however, have been inconclusive.

This study was designed to determine the relationship between students' academic achievement in four Jordanian state universities and their parents' SES. Specifically, the study was designed to determine, on the aggregate, the relationship between students' academic achievement from these universities and their parents' SES. Academic achievement was defined in this study as students' GPA. Parents' SES was defined as fathers' and mothers' income, occupation, and education.

The population surveyed included a total of 620 students from the four state universities in Jordan. Only sophomore, junior, and senior students were surveyed. The three largest departments of each institution were selected for the study. A total of 620 students from these conveniently selected departments were randomly surveyed.

A survey instrument was developed by identifying and using questions from instruments used in similar research. This instrument was then adapted to Jordanian culture with

the advice and approval of a panel of Jordanian experts. The 12 questions in the survey all concerned parents' SES and their family's situations related to their sons' and daughters' academic achievement. To make sure that the respondents understood the questions, the survey instrument was translated into the Arabic language and the panel of experts was asked to verify that the meaning of the questions was the same in the English and Arabic versions.

The statistical tests used to determine the impact of parents' SES on students' academic achievement were Pearson's chi-square, Spearman's correlation, one-way analysis of variance, and the Tukey/Kramer method. The level of significance was set at 0.05 for all of the statistical tests. Fathers' and mothers' income, occupation, and education, as well as the students' GPA, were measured on a 9-point ordinate scale. The 9 points were used in both the Pearson's chi-square and Spearman's correlation.

Pearson's chi-square showed a significant relationship between fathers' income and students' GPA at the 0.05 level. A significant relationship was also found between fathers' occupation and fathers' education and students' GPA. Pearson's chi-square also showed a significant relationship between mothers' income and students' GPA. A significant relationship was found between mothers' occupation and mothers' education and students' GPA.

Spearman's correlation, which provides a double test of such relationships between students' GPA and their fathers' and mothers' income, occupation, and education, was used to determine the direction and strength of the relationships. Both the Pearson chi-square and Spearman's correlation showed significant relationships between the SES variables and students' GPA. The results from Spearman's correlation also showed that the significant relationships between such variables were negative and were statistically significant at the 0.05 level, with one exception. The exception was between the fathers' education and the students' GPA, which was negative but not statistically significant at 0.05 ($r = -0.2$ with prob = 0.054).

Next, a one-way analysis of variance was used to determine the relationship, on the aggregate, between students' GPA and parents' SES. For this purpose, fathers' and mothers' income, occupation, and education were compressed from nine to three categories--low, middle, and high parents' SES. Numerical GPA scores, rather than the ordinal ranking scale used in the Pearson chi-square and Spearman's correlation, were used in the one-way analysis of variance. The results of one-way analysis of variance indicated that differences existed between the means of the students' GPAs in the three groups of parents--low, middle, and high SES parents.

The Tukey/Kramer method, which was used to determine if the mean GPA of the three SES groups (low, middle, and high) differed significantly, revealed that the mean GPA of group 1 (low SES, $\bar{x}_1 = 72.93$) differed significantly from the mean GPA of both the middle ($\bar{x}_2 = 70.08$) and the high SES ($\bar{x}_3 = 67.93$). The mean GPA of group 2, the middle SES, also differed from the mean GPA of group 3, high SES, but not significantly at the 0.05 level.

One-way analysis of variance, the Tukey/Kramer method, and the Eta correlation coefficients were also used to determine the relationships between students' GPA and five cultural variables related to their parents' environment. The five cultural variables were (a) number of siblings in families, (b) degree of religious commitment, (c) parents' kinship, (d) degree of families' influence on students' educational aspirations, and (e) reason for families' influence on students' educational aspirations. Significant differences were found between the means of all four categories of number of siblings, degree of religious commitment, and reason for families' influence on students' educational aspirations at the 0.05 level. However, no significant differences were found between the means of all four categories of the remaining cultural variables, namely the parents' kinship and the family influence on students' educational aspirations.

Next, all categories of the cultural variables were combined and then examined in order to determine whether or not relationships existed between them and the students' GPA. Results from Eta correlation coefficient indicated that all relationships between students' SES and these variables were positive. The values of Eta correlation coefficients were (a) number of siblings = 0.16, (b) religious commitment = 0.30, (c) parents' kinship = 0.07, (d) families influence on students' educational aspiration = 0.10, and (e) reason for families influence on students' educational aspirations = 0.12.

Discussion

As of subjects' characteristics of this study, it can be seen in Appendix F that there were 347 (57.0%) males and 262 (43.0%) females. Of the 609 usable responses, there were 197 (32.3%) whose parents were farmers, 104 (17.1%) whose their parents were bedouins, and 308 (50.6%) whose parents were urbanites. The categories from families of high, middle, and low SES were 77, 233, and 299 students respectively. Whether or not some of the students from low SES families who participated in this survey have received grants from the government is not known. This question was not asked in the survey. There are, however, a limited number of not more than 100 scholarships given by the government every year to outstanding high school graduates

so that they attend colleges in Jordan state universities. The chance of this survey to include more than a few students is very slim and is improbable.

The negative relationships found between the SES variables and students' GPAs in Jordan state universities are contrary to the findings of research in western nations, as well as the results of similar studies in some other developing countries. It has generally been found that the relationship between parents' SES and the students' GPA in the west is positive. That is, students with more economically privileged parents excel better in school than their less fortunate classmates. The argument is that materially privileged students whose parents have a high status occupation, have more education, receive high income, have better amenities in the home as well as more material possessions, do better academically than a student not so privileged (Barham, 1984; Belmont & Marolla, 1973; Gurin & Epps; Harmon, 1980; and Kunz & Peterson, 1972). For instance, Allen cited in Barham (1981, p.40), noted that in the west, parents' education and occupation are all important factors for high academic achievement of college students.

Father's and mother's education and income are important correlates of students' educational progress (Gurin & Epps, 1975). A study on this subject in the U.S.A done by Harmon (1980, pp. 105-128) found that all parents'

SES variables positively correlated with the college students' GPA with one exception. The exception was that mothers' occupation negatively correlated with students' academic achievement. He reported that correlations between students' GPA and their fathers' and mothers' education and occupation were (a) fathers' education = .28, (b) fathers' occupation = .15, mothers' education = .24, mothers' occupation = -.07, and all parents' SES combined explained .31 of total achievement variation. In contrast to these findings, however, Gurin and Epps (1975) reported that there was no significant correlation between fathers' and mothers' education separately or combined, and any of the measures of college students' performance. They noted further that in the west, parents' SES mattered less in aspirations and students' achievement that is sometimes believed to be true.

Meanwhile, similar studies in the west which included family size as a possible determinant of college students' achievement showed inconsistent results. For example, it was reported by Belmont and Marolla (1973) that as family size increased, level of students' achievement declined. On the other hand, Kunz and Peterson (1972) found that no significant relationships between family size and grades of the university students in their study were found.

The findings of this study in Jordan also contradicted most of the results on the subject in developing countries which showed inconsistent findings (Al-Ebraheem, 1980;

Barham, 1984; Heyneman, 1980; and Lanzas & Kingston, 1981). For instance, in his study about the university of Kuwait, Al-Ebraheem (1980) found that students from lower SES families performed better than their more economically privileged classmates in secondary and college levels in Kuwait. He reported that the University of Kuwait had to apply a double admission policy so that sons and daughters of parents from high SES groups could have a better chance to enter college. The policy was that a lower standard of admission was made for those who were highly privileged Kuwaiti students whose parents and grandparents were born of Kuwaiti national origin so that they will be able to enter colleges in spite of their low grades in high school standardized test. On the other hand, a high standard of admission for less privileged students who were Kuwaitis by naturalization, not by birth, was applied.

Furthermore, it was reported that there were no significant relationships between parents' SES and the college students' GPA in developing countries (Barham, 1984). In his study about Jamaican college students, he reported that fathers' education had no significant direct effect on college students in his sample. In support of such findings, similar studies in eight developing countries by Heyneman (1980) also reported that wealthy students did not perform better than their less privileged classmates to any meaningful degree. He stated that "...evidence that the

difference in language, schooling value, and self-confidence are smaller between poor and privileged students in some developing countries points to the time that it takes for an economically privileged group within a industrializing society to evolve into a social class..."

In support to Heyneman's findings, Lanzas and Kingston (1981) stressed that recent research in a variety of settings indicated that families' SES had very little, if any, effect on the students' academic achievement. They reported that correlation between the overall parents' SES and the students' performance was .07 and was not statistically significant.

The findings of a study done by Niles (1985), however, indicated that there were high positive correlations between families' SES and the GPA of high school students in Sri Lanka. In his study, Niles (1985) reported that the correlations between students' performance in Sri Lanka and the fathers' and mothers' income, occupation, and education were (a) fathers' income 0.44, (b) fathers' occupation 0.52, (c) fathers' education 0.47, (d) mothers' occupation 0.67, (e) fathers' and mothers' income combined 0.44, and (f) fathers' and mothers' education combined 0.48 (Niles 1985, p.423). He explained further, that in the Third World countries, more than 30 percent of students' performance was accounted for by schools' effect rather than home influence (Niles, 1985, p. 422).

The finding of a negative relationship between families' SES and the college students in Jordan, therefore, differs from that of similar studies in both developed and developing countries. The lack of agreement in the results of the studies particularly in developing countries may signify that various cultural factors, as well as the process of development and change affect the findings of such results.

Although the findings of this study in Jordan is tentative, it may point to important topics for future concern. In particular, further research should be done so that reasons for such negative relationship in this sample as contrasted to the positive relationship in the west and the inconsistent positive and neutral relationships in the developing countries, could be explained. Is there an economic pressure on students from lower SES families in Jordan to excel in colleges or is it a cultural apparition which causes the sons and daughters of the wealthy to be psychologically relaxed and less motivated by education? Does the fact that the wealth of the families comes from ownership of land or natural resources rather than from entrepreneurial skills and the operation of businesses change the impact of the SES variables on students? It is possible that SES variables of families in different societies do not have the same meaning as SES variables indicate for Western families. We can not tell from this

single limited study, however, if a similar study of Jordanian high school students would show similar findings. Further research is needed on this point.

An examination of the statistical findings of this study indicates that students from low SES families in four Jordanian state universities have greater academic success than do students from higher SES backgrounds. The findings of this study in Jordan may strengthen a point was brought up by Gustafson (1991) that, in his opinion, it is possible that students from low SES background value school and be more concerned about their future occupational careers than their more fortunate classmates. His theory was that students from low SES perceive academic achievement in school as the only hope for them to succeed in their future life. Therefore, they study harder because they are more motivated.

Furthermore, the findings of this study in Jordan are quite dramatic and raise a number of questions which require further research. For instance, if students of lower SES families in Jordan are motivated by economic needs to work harder in college, why is this not true in other developing countries, and in the West? Is there something in the Arab culture, specifically in Jordanian culture, which explains this finding? Could similar negative relationships be found in other Arab countries? Further research is needed to answer these questions.

The statistical findings of the other five cultural questions in this study also raise some interesting questions. The fact that students from larger families have higher GPA than students from smaller families may indicate that students who have a larger number of siblings recognize that they must excel in college in order to find their place in society. Being from a larger family, in this sense, would motivate students to pursue higher academic achievement. Large families in Jordan are the norm for strong families. The extended family of parents, grand parents, other relatives, and the children work together to promote each individual so as to make the family stronger. If this is true in Jordan, why is it not true in other developing nations? No research with negative findings, such as those of this study, from developing nations is available for comparison. This point needs to be further examined.

The statistical finding that students from families with a higher degree of religious commitment scored higher in college than did students from families of a lower commitment also raises interesting questions. The degree of religiousness of the family in Jordan to a large degree also reflects the strength of the family. Stronger families tend to be these families with ties to religion. Is this true in other Arab countries? In other developing countries? The perception in the West is that students from more

cosmopolitan, secular families are more likely to excel than are students from very religious families. No research has been conducted on this point. Without additional research, no conclusions can be drawn.

Another statistical finding was that the further the mother and father were in kinship, the higher the GPA of students. This may indicate that the environment outside a single tribe or an extended family results in a more cosmopolitan family, which stimulates students to be more open to new ideas and concepts and, therefore, better students in college. As the tribal society in Jordan is transformed, spouses are more likely to be from outside a single tribe. If this is the case, more serious students should be a result of these new families. Again this issue needs to be researched further.

The findings that there were positive relationships between students' GPA and their cultural values, such as number of siblings, religious commitment, kinship, families' influence, and reason for families' influence on students' educational aspirations, also raise an important cultural research question. This may indicate that the home environment and the cultural values of college students are more important than their SES background. Again this issue needs to be researched further and it will probably require more field research similar to what cultural anthropologists use in these studies.

The great emphases on the strength and pride of the family in Jordan may be another cultural aspect affecting students' academic motivation. The stronger the feeling of family pride, the more students may be motivated to excel in school. This is the first study of the relationship between the academic achievement of college students in Jordan state universities and their parents' SES. Therefore, the results provide useful information about the subject. It would not be reasonable to interpret this information as a far reaching trend for such relationships between students' GPA and their parents' SES. Although the findings show a significant negative relationship between the various SES variables and students' achievement in college, the limited strength of the findings raises a number of questions. Does the negative relationship indicate that the more affluent families are less industrious, and motivated less to work because of their positions in society similar to feudal barons in the past? Without further research this can not be answered.

The weak negative relationship, however, may indicate that Jordan is experiencing a dramatic change of its culture. The growing urbanization and internationalization of the society may be changing the old traditional tribal patterns which did not stress SES factors of families. A test of this hypothesis can only be made in the future. If in a decade or so a similar study shows a positive

relationship between SES and students' achievement it then might be reasoned that the society has changed from what it is today.

Conclusions

The conclusions reached as a result of this study are as follow:

1. The SES statistical findings that negative relationships exist between fathers' and mothers' income, occupation, and education and the students' GPA in Jordan state universities may indicate that high SES of parents creates a sense of economic, social, and psychological security for sons and daughters that cause them not to take their studies very seriously. It could be that they are too relaxed to adequately prepare for college. Parents with lower SES, on the other hand, leave their sons and daughters with no other options or alternatives except for them to study hard in order to achieve in college so that they will be able to compete for higher level jobs and enhanced positions in life.

2. An examination of the other statistical findings of this study that positive relationships exist between parents' cultural variables such as religion, family size, kinship, and educational aspirations and students' GPA suggests that cultural, not SES variables, are the primary determinants affecting academic achievement in Jordan.

3. Because the correlations between students' GPA and their parents SES (negative) as well as their cultural variables (positive) are relatively low, it may be that there are other factors that ought to be considered as determinants for academic achievement. The rapid economic and social change occurring in Jordan may be causing a societal change which prevents the researcher from discovering the true determinants of academic achievement.

4. Perhaps the most important conclusion of this study is that the relationship between students' GPA in Jordan state universities and their parents' SES is not applicable to that of the western nations.

Recommendations

The following recommendations are based on the findings and conclusions of this study.

1. As this SES study was the first ever done in Jordan state universities, it is suggested that additional studies focus on selected cultural variables to determine how these variables are related to the level of students' academic achievement in Jordanian colleges.

2. As the findings of this limited study indicated that there was a negative relationship between parents' SES and the college students' GPA, it is suggested that additional studies should be done in Jordan at the secondary

school level to see if a negative relationship between SES and students' achievement exists throughout the nation.

3. Because the findings of this study in Jordan disagree with the findings of all Western studies, and because similar studies have not been made in other Middle-Eastern nations, it is recommended that similar studies be conducted in other Arab countries to determine if the results are the same throughout the Middle East.

4. If it is found that a negative relationship exists between the SES of parents and students' college achievement in the Arab cultures, studies should be designed to determine which cultural variables cause these differences.

5. If cultural variables are found to influence the effect of SES factors in the Middle East, similar studies of cultures should be made in other civilizations throughout the world to help explain why some ethnic and cultural groups consistently excel in college, whereas other cultural groups do not excel.

6. If future research indicates that other cultural variables affect students' academic achievement in college, a new interpretation of SES in the West should be considered. It is possible that cultural conditions in the West and the Middle East contribute differently to the constant relationships found when testing the SES factors.

APPENDIX A
LETTER OF INSTRUCTION

July 15, 1993

Dr. Anwar Al-Qura'an
Economic Department
Yarmouk University
Irbid - Jordan

Dear Dr. Al-Qura'an

Thank you for accepting the responsibility as chief research assistant for the data collection of my future dissertation study. Enclosed are the questionnaires for surveying students in four Jordanian institutions, namely Yarmouk University, Technology University, Mo'utah University, and the University of Jordan. The other three volunteers in Jordan, namely Dr. Mosa Al-Louzi, Mr. Osamah Al-Qudah, and Mr. Ghazi Momani, have already had the opportunity to examine the questionnaire and make suggestions on its content. The survey has also been evaluated by a panel of Middle Eastern experts in the United States. Would you please follow the following procedural steps in administering these surveys.

1. Survey a total of 620 students from the four institutions. The number of students to be surveyed at each of the universities is as follows:
 - (a). Yarmouk university, a total of 230
 - (b). Technology university, a total of 60
 - (c). Mo'utah university, a total of 30
 - (d). University of Jordan, a total of 300
2. Administer the survey to sophomore, junior, and senior students at each of these institutions. Note that freshmen students are not to be surveyed.
3. Administer an equal number of surveys to each of the three levels (i.e., sophomore, junior, and senior students at each institution).
4. Attempt to get a sample that reflects all levels of SES backgrounds (i.e., very high, high, low-high, high middle, middle, low-middle, high-low, low, and very low). The number of subjects in these nine levels does not necessarily have to be equal.

This is a random sample taken from convenience sampling, therefore, you have flexibility in surveying

as many students as you need to obtain the number of subjects that is needed for all SES categories. In the study itself, there is a breakdown into nine levels of family backgrounds. It might be possible to obtain such categories.

5. Please ask all surveyors to follow these procedures:
 - (a). Provide students with the copy of the questionnaire and the attached authorization to obtain their GPA.
 - (b). Explain the nature of the study to the students. Ensure them that the study will in no way identify their personality or their families. Explain that their signatures and ID numbers on the attached sheet only authorize us to receive their current GPA from the university registrar and can not be used for any other purposes.
 - (c). Obtain the GPA of all students surveyed and include this information with the questionnaire when you send it to me.
 - (d). Please return all materials as soon as possible to the following address.

Please call me collect if there are any problems or questions about the survey. My telephone number is XXX XXX-XXXX. Do not hesitate to include all expenses incurred related to this survey so that I can reimburse you in the near future. Thank you again for agreeing to help me.

Sincerely yours,

Ibrahim S. Qudah
P.O. Box 331953
Forth Worth, Texas 76163
The United States of America

APPENDIX B
QUESTIONNAIRE COVER LETTER

July 15, 1993

Dear University Student;

I am a Jordanian citizen conducting a scientific study of the influence of family background on academic achievement. I want to solicit your help by completing this questionnaire. This is part of a study about students in Jordan universities. There are no right or wrong answers. The questionnaire consists of 12 questions and will take approximately five minutes to complete. Your completion and return of this questionnaire will be greatly appreciated. Confidentiality of information will be maintained. At no time will your identity be related to any of your responses on the questionnaire you complete.

When you are through, please return the questionnaire to the person administering the survey. Make sure that your Identification number (ID) is listed on the questionnaire. A separate sheet with your ID and signature is attached for you to authorize the university registrar to provide us with a transcript of your GPA. Thank you for your participation.

Sincerely,

Ibrahim S. Qudah

APPENDIX C
LETTER TO PANEL OF EXPERTS

July 21, 1993

To: Panel of Experts
From: Ibrahim S. Qudah
Subject: Validity of Questionnaire

My committee had questions about my survey questions. They wanted me to have the panel verify the various categories of all socioeconomic status (SES) for parents. Second, they wanted to be sure that the rank order as to income, occupation, and education present a true picture of Jordanian society. Will you please review these questions and let me know your final opinion. Please sign at the bottom of the page if you concur with the questions.

Thank you for your help.

1. My father's monthly income is

- a. _____ More than 1250 Jordanian Dinar
- b. _____ 1,100-1,250 Jordanian Dinar
- c. _____ 950-1,100 Jordanian Dinar
- d. _____ 800-950 Jordanian Dinar
- e. _____ 650-800 Jordanian Dinar
- f. _____ 500-650 Jordanian Dinar
- g. _____ 350-500 Jordanian Dinar
- h. _____ 150-350 Jordanian Dinar
- j. _____ less than 150 Jordanian Dinar

2. My mother's monthly income is

- a. _____ More than 240 Jordanian Dinar
- b. _____ 220-240 Jordanian Dinar
- c. _____ 200-220 Jordanian Dinar
- d. _____ 180-200 Jordanian Dinar
- e. _____ 160-180 Jordanian Dinar
- f. _____ 140-160 Jordanian Dinar
- g. _____ 120-140 Jordanian Dinar
- h. _____ 100-120 Jordanian Dinar
- j. _____ Less than 100 Jordanian Dinar

3. My father's occupation is
- a. _____ Governmental official (e.g. cabinet or parliament member, professional staff to these offices)
 - b. _____ Business executive (e.g. chief executive officer, banker, large land owner)
 - c. _____ Military officer (major or above), top public or business administrator (e.g. state, regional, hospital, or school administrator)
 - d. _____ Skilled professional (e.g. physician, surgeon, engineer, lawyer, judge, university professor, airline pilot or navigator)
 - e. _____ Military officer (below rank of captain), journalist, writer/publisher, radio personnel, public school principal
 - f. _____ Trader, salesperson, miner, machinist, mechanic, technician, non-commissioned military personnel, public employee (state, city, hospital) including police and firemen
 - g. _____ Teacher, nurse and medical personnel, small merchant and shop owner, junior college professor
 - h. _____ Imam or other religious leader
 - j. _____ Enlisted military personnel; farmer; secretary; clerk; driver of bus, truck, or taxi; laborer
 - k. _____ If none of the above, please specify his occupation
4. My mother's occupation is
- a. _____ Governmental official (e.g. cabinet or parliament member, professional staff to these offices)
 - b. _____ Business executive (e.g. chief executive officer, banker, large land owner)
 - c. _____ Military officer (major or above), top public or business administrator (e.g. state, regional, hospital, or school administrator)

- d. _____ Skilled professional (e.g. physician, surgeon, engineer, lawyer, judge, university professor, airline pilot or navigator)
- e. _____ Military officer (below rank of captain), journalist, writer/publisher, radio personnel, public school principal
- f. _____ Trader, salesperson, miner, machinist, mechanic, technician, non-commissioned military personnel, public employee (state, city, hospital) including police and firemen
- g. _____ Teacher, nurse and medical personnel, small merchant and shop owner, junior college professor
- h. _____ Housewife
- j. _____ Enlisted military personnel; farmer; secretary; clerk; driver of bus, truck, or taxi; laborer
- k. _____ If none of the above, please specify her occupation

5. My father's educational level is

- a. _____ Specialized professional degree or Ph.D.
- b. _____ Professional or MA degree
- c. _____ College degree (4 years)
- d. _____ 2 year junior college
- e. _____ High school
- f. _____ Junior or senior high school
- g. _____ Sixth grade
- h. _____ Able to read and write alphabetical letters and numbers
- j. _____ Literate

6. My mother's educational level is

- a. _____ Specialized professional degree or Ph.D.
- b. _____ Professional or MA degree
- c. _____ College degree (4 years)
- d. _____ 2 year junior college
- e. _____ High school
- f. _____ Junior or senior high school
- g. _____ Sixth grade
- h. _____ Able to read and write alphabetical letters and numbers
- j. _____ Literate

7. Number of siblings (brothers and sisters) in the family
(do not count yourself)
- a. _____ 2 or less
 - b. _____ 3-5
 - c. _____ 6-7
 - d. _____ eight or more
8. In the area of religion
- a. _____ I do not follow religious practices at all
 - b. _____ I am not a strongly religious person
 - c. _____ I practice religious ceremonies and pray, but
not always
 - d. _____ I am a strongly religious person
9. My mother came from
- a. _____ Foreign origin (i.e., European, American,
Chinese, etc.)
 - b. _____ Another Arab country
 - c. _____ Jordan, but from different tribe from father
 - d. _____ Jordan, same tribe as father
10. How much do you think your family has influenced your
educational aspirations
- a. _____ Greatly
 - b. _____ Moderately
 - c. _____ Not Much
 - d. _____ Not at all
11. Please indicate why you believe your family has
influenced your educational aspirations
- a. _____ Expectations to do as well as father and
mother
 - b. _____ To give parents the pride of having a son or
daughter with a college degree
 - c. _____ Expectation to earn a better living than
father and mother
 - d. _____ To be able to get a job and survive

12. My cumulative grade point average (GPA) in college is

- a. _____ 96-100
- b. _____ 91-95
- c. _____ 86-90
- d. _____ 81-85
- e. _____ 76-80
- f. _____ 71-75
- g. _____ 66-70
- h. _____ 61-65
- j. _____ 60 or less

I have reviewed the grouping and ranking with the modifications I have suggested and agree that this represents a valid picture of the socioeconomic status in Jordan.

Signature

Title

Signature

Title

Signature

Title

Signature

Title

APPENDIX D
QUESTIONNAIRE

QUESTIONNAIRE

Please complete the following questionnaire. Each question has two or more choices. For each question, please check only the one item that is applicable to you.

My ID number is: _____
 _____ Male _____ Female

My field of study is: _____

My age is:
 _____ Less than 20 years
 _____ 20-24 years
 _____ 25-29 years
 _____ 30-34 years
 _____ 35 years or older

My cumulative GPA in college is (_____)

The name of my university is:
 _____ University of Jordan
 _____ Yarmouk University
 _____ Technology University
 _____ Mo'utah University

I am a:
 _____ Sophomore student
 _____ Junior student
 _____ Senior student

I am a son/daughter of
 a. _____ Fallah
 b. _____ Bedouin
 c. _____ Urbanite

1. My father's monthly income is
 a. _____ More than 1250 Jordanian Dinar
 b. _____ 1,100-1,250 Jordanian Dinar
 c. _____ 950-1,100 Jordanian Dinar
 d. _____ 800-950 Jordanian Dinar
 e. _____ 650-800 Jordanian Dinar
 f. _____ 500-650 Jordanian Dinar
 g. _____ 350-500 Jordanian Dinar
 h. _____ 150-350 Jordanian Dinar
 j. _____ less than 150 Jordanian Dinar

2. My mother's monthly income is
- a. _____ More than 240 Jordanian Dinar
 - b. _____ 220-240 Jordanian Dinar
 - c. _____ 200-220 Jordanian Dinar
 - d. _____ 180-200 Jordanian Dinar
 - e. _____ 160-180 Jordanian Dinar
 - f. _____ 140-160 Jordanian Dinar
 - g. _____ 120-140 Jordanian Dinar
 - h. _____ 100-120 Jordanian Dinar
 - j. _____ Less than 100 Jordanian Dinar
3. My father's occupation is
- a. _____ Governmental official (e.g. cabinet or parliament member, professional staff to these offices)
 - b. _____ Business executive (e.g. chief executive officer, banker, large land owner)
 - c. _____ Military officer (major or above), top public or business administrator (e.g. state, regional, hospital, or school administrator)
 - d. _____ Skilled professional (e.g. physician, surgeon, engineer, lawyer, judge, university professor, airline pilot or navigator)
 - e. _____ Military officer (below rank of captain), journalist, writer/publisher, radio personnel, public school principal
 - f. _____ Trader, salesperson, miner, machinist, mechanic, technician, non-commissioned military personnel, public employee (state, city, hospital) including police and firemen
 - g. _____ Teacher, nurse and medical personnel, small merchant and shop owner, junior college professor
 - h. _____ Imam or other religious leader
 - j. _____ Enlisted military personnel; farmer; secretary; clerk; driver of bus, truck, or taxi; laborer
 - k. _____ If none of the above, please specify his occupation

4. My mother's occupation is
- a. _____ Governmental official (e.g. cabinet or parliament member, professional staff to these offices)
 - b. _____ Business executive (e.g. chief executive officer, banker, large land owner)
 - c. _____ Military officer (major or above), top public or business administrator (e.g. state, regional, hospital, or school administrator)
 - d. _____ Skilled professional (e.g. physician, surgeon, engineer, lawyer, judge, university professor, airline pilot or navigator)
 - e. _____ Military officer (below rank of captain), journalist, writer/publisher, radio personnel, public school principal
 - f. _____ Trader, salesperson, miner, machinist, mechanic, technician, non-commissioned military personnel, public employee (state, city, hospital) including police and firemen
 - g. _____ Teacher, nurse and medical personnel, small merchant and shop owner, junior college professor
 - h. _____ Housewife
 - j. _____ Enlisted military personnel; farmer; secretary; clerk; driver of bus, truck, or taxi; laborer
 - k. _____ If none of the above, please specify her occupation
5. My father's educational level is
- a. _____ Specialized professional degree or Ph.D.
 - b. _____ Professional or MA degree
 - c. _____ College degree (4 years)
 - d. _____ 2 year junior college
 - e. _____ High school
 - f. _____ Junior or senior high school
 - g. _____ Sixth grade
 - h. _____ Able to read and write alphabetical letters and numbers
 - j. _____ Literate

6. My mother's educational level is
- _____ Specialized professional degree or Ph.D.
 - _____ Professional or MA degree
 - _____ College degree (4 years)
 - _____ 2 year junior college
 - _____ High school
 - _____ Junior or senior high school
 - _____ Sixth grade
 - _____ Able to read and write alphabetical letters and numbers
 - _____ Literate
7. Number of siblings (brothers and sisters) in the family (do not count yourself)
- _____ 2 or less
 - _____ 3-5
 - _____ 6-7
 - _____ eight or more
8. In the area of religion
- _____ I do not follow religious practices at all
 - _____ I am not a strongly religious person
 - _____ I practice religious ceremonies and pray, but not always
 - _____ I am a strongly religious person
9. My mother came from
- _____ Foreign origin (i.e., European, American, Chinese, etc.)
 - _____ Another Arab country
 - _____ Jordan, but from different tribe from father
 - _____ Jordan, same tribe as father
10. How much do you think your family has influenced your educational aspirations
- _____ Greatly
 - _____ Moderately
 - _____ Not Much
 - _____ Not at all
11. Please indicate why you believe your family has influenced your educational aspirations
- _____ Expectations to do as well as father and mother
 - _____ To give parents the pride of having a son or daughter with a college degree
 - _____ Expectation to earn a better living than father and mother
 - _____ To be able to get a job and survive

12. My cumulative grade point average (GPA) in college is
- a. _____ 96-100
 - b. _____ 91-95
 - c. _____ 86-90
 - d. _____ 81-85
 - e. _____ 76-80
 - f. _____ 71-75
 - g. _____ 66-70
 - h. _____ 61-65
 - j. _____ 60 or less

APPENDIX E

RAW DATA

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SPSS/PC+

11/1/93

SUBJECTS	G S												MORIGIN	R P A	G P A N U M	S E S L E V	S E S T O T	S E S A V G		
	R	S	C	C	C	C	C	C	C	C	C	C								
1	2	3	2	5	4	2	6	5	2	2			1	4	1	3	70	4.00	24.00	2.00
2	1	1	3	1	5	2	5	2	1	3			2	3	2	2	64	3.00	18.00	1.00
3	2	3	5	2	7	2	7	5	2	3			2	4	4	2	63	4.67	28.00	2.00
4	2	3	9	9	4	8	8	7	3	3			2	4	2	3	68	7.50	45.00	3.00
5	1	1	2	1	1	2	2	1	1	1			1	4	1	2	64	1.50	9.00	1.00
6	1	1	1	1	1	1	2	2	1	2			3	4	2	2	61	1.33	8.00	1.00
7	2	3	3	1	4	2	6	5	2	3			3	4	2	1	67	3.50	21.00	1.00
8	1	2	2	1	1	2	2	1	2	4			2	4	2	3	69	1.50	9.00	1.00
9	1	3	3	1	6	2	8	5	2	1			3	4	3	2	64	4.17	25.00	2.00
10	1	3	6	1	7	2	6	4	2	2			1	3	1	3	67	4.33	26.00	2.00
11	2	3	7	1	4	2	5	4	3	2			1	3	1	3	69	3.83	23.00	2.00
12	1	3	3	3	4	3	5	6	3	2			2	4	4	3	71	4.00	24.00	2.00
13	2	3	3	7	4	2	5	5	3	2			2	4	2	3	71	4.33	26.00	2.00
14	1	3	7	7	7	3	5	6	3	3			3	4	2	1	58	5.83	35.00	2.00
15	2	3	6	1	4	1	2	1	4	2			3	3	2	1	60	2.50	15.00	1.00
16	1	3	3	5	7	7	7	4	1	2			2	3	1	4	73	5.50	33.00	2.00
17	1	2	2	2	5	3	6	6	2	2			1	4	2	2	61	4.00	24.00	2.00
18	1	1	1	1	1	2	2	1	1	1			1	4	2	9	96	1.33	8.00	1.00
19	1	1	3	3	2	2	3	3	1	1			4	4	1	8	95	2.67	16.00	1.00
20	2	2	1	1	1	2	3	3	1	2			1	4	2	5	78	1.83	11.00	1.00
21	1	3	9	8	8	2	7	6	3	2			3	4	2	1	59	6.67	40.00	3.00
22	1	2	2	1	8	2	3	2	1	1			1	3	2	3	67	3.00	18.00	1.00
23	1	1	1	1	1	1	1	1	1	1			1	2	2	9	97	1.00	6.00	1.00
24	1	3	7	1	8	2	7	6	3	2			2	4	1	2	62	5.17	31.00	2.00
25	1	3	3	1	4	2	2	2	1	2			3	4	1	2	66	2.33	14.00	1.00
26	2	3	2	1	4	2	4	4	3	2			2	4	3	4	71	2.83	17.00	1.00
27	1	2	2	1	2	2	1	3	3				2	4	2	2	62	1.50	9.00	1.00
28	1	3	6	1	4	2	7	7	4	2			2	3	2	1	58	4.50	27.00	2.00
29	2	3	6	4	6	4	7	7	4	3			3	4	2	3	66	5.67	34.00	2.00
30	1	3	4	1	9	2	8	5	3	3			3	4	3	3	69	4.83	29.00	2.00
31	2	3	4	3	9	3	7	5	3	3			2	4	3	2	65	5.17	31.00	2.00
32	2	2	9	9	8	2	6	5	3	2			2	4	1	2	63	6.50	39.00	3.00
33	2	3	5	1	4	2	7	5	3	3			1	4	3	3	68	4.00	24.00	2.00
34	1	1	1	1	1	2	3	1	1	2			1	3	1	1	57	1.50	9.00	1.00
35	1	2	4	1	4	2	4	1	1	2			1	4	2	2	60	2.67	16.00	1.00
36	1	1	3	4	1	2	5	5	3	2			3	4	4	3	69	3.33	20.00	1.00
37	2	1	4	1	7	2	6	5	3	2			1	4	2	4	72	4.17	25.00	2.00
38	1	3	5	1	6	2	8	5	3	4			2	4	4	2	64	4.50	27.00	2.00
39	1	2	1	1	4	2	6	1	1	3			1	4	1	3	66	2.50	15.00	1.00
40	2	2	9	9	6	8	7	5	2	2			2	4	3	1	60	7.33	44.00	3.00
41	2	3	6	1	4	2	5	4	2	2			2	4	3	3	70	3.67	22.00	1.00
42	2	3	2	1	4	2	7	5	3	3			3	4	1	3	67	3.50	21.00	1.00
43	1	1	3	1	3	2	5	6	2	3			1	4	1	3	70	3.33	20.00	1.00
44	1	2	1	1	1	2	2	1	1	2			2	3	2	1	60	1.33	8.00	1.00
45	1	2	4	7	8	8	5	3	2	2			1	4	3	3	70	5.83	35.00	2.00
46	1	1	7	1	8	1	5	6	3	3			1	4	2	2	62	4.67	28.00	2.00
47	1	1	8	1	4	2	5	5	4	2			1	4	2	3	70	4.17	25.00	2.00

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SUBJECTS	G S											MORIGIN	E P						
	R	S	C	C	C	C	C	C	C	C	C		R	P	A	GPANUM	SESLEV	SESTOT	SESAVG
48	1	2	2	2	4	2	4	3	2	2		1	4	2	5	78	2.83	17.00	1.00
49	1	2	1	1	1	2	5	1	1	3		2	4	2	3	70	1.83	11.00	1.00
50	2	3	7	1	4	2	5	4	3	2		1	4	1	3	69	3.83	23.00	2.00
51	1	1	4	1	4	1	4	1	1	3		2	4	4	2	62	2.50	15.00	1.00
52	1	1	3	1	1	2	4	4	2	3		1	4	2	5	76	2.50	15.00	1.00
53	2	3	2	1	1	2	4	4	4	1		1	4	2	4	75	2.33	14.00	1.00
54	1	3	2	1	4	2	3	1	1	3		3	3	2	1	54	2.17	13.00	1.00
55	1	3	3	2	3	2	7	5	3	3		1	4	4	2	64	3.67	22.00	1.00
56	1	1	2	2	4	2	4	1	1	2		1	4	2	3	69	2.50	15.00	1.00
57	2	3	9	9	7	5	9	7	4	3		1	4	4	2	63	7.67	46.00	3.00
58	2	3	2	2	4	2	4	3	1	2		2	4	3	3	66	2.83	17.00	1.00
59	2	3	8	8	8	2	7	5	3	3		2	3	3	1	57	6.33	38.00	3.00
60	2	3	7	1	8	2	7	3	3	2		3	4	4	2	65	4.67	28.00	2.00
61	2	3	4	6	6	6	8	7	3	2		3	3	2	3	70	6.17	37.00	2.00
62	2	3	3	2	4	2	6	5	2	3		2	4	2	4	72	3.67	22.00	1.00
63	1	3	2	2	1	2	4	2	3	3		1	3	4	2	61	2.17	13.00	1.00
64	2	3	1	1	2	2	4	2	1	2		2	4	1	4	71	2.00	12.00	1.00
65	2	1	1	1	1	2	2	1	1	2		1	4	1	2	67	1.33	8.00	1.00
66	1	2	9	7	8	2	5	1	1	2		2	4	3	3	68	5.33	32.00	2.00
67	2	3	2	1	4	2	3	2	1	3		2	4	2	3	69	2.33	14.00	1.00
68	1	3	5	2	4	2	5	4	3	3		3	4	4	3	70	3.67	22.00	1.00
69	2	1	1	1	3	1	5	4	3	3		3	3	2	4	73	2.50	15.00	1.00
70	2	1	6	6	7	3	7	6	1	3		1	4	4	5	80	5.83	35.00	2.00
71	1	3	9	9	4	3	5	6	4	3		3	4	2	2	64	6.00	36.00	2.00
72	1	1	1	1	1	1	1	1	1	1		1	3	1	3	67	1.00	6.00	1.00
73	2	3	2	1	4	2	5	5	3	3		3	3	2	3	69	3.17	19.00	1.00
74	2	1	9	9	6	2	7	5	3	2		1	4	3	2	64	6.33	38.00	3.00
75	2	3	5	5	9	3	7	6	3	2		2	4	4	4	74	5.83	35.00	2.00
76	1	1	2	2	4	2	4	3	2	2		1	4	2	2	63	2.83	17.00	1.00
77	1	3	9	2	9	2	7	5	4	2		1	4	2	2	61	5.67	34.00	2.00
78	1	3	8	2	8	2	5	2	1	2		4	4	2	2	61	4.50	27.00	2.00
79	1	3	4	2	7	2	6	4	1	2		1	4	4	4	69	4.17	25.00	2.00
80	2	3	5	7	4	2	5	5	3	2		3	4	3	3	70	4.67	28.00	2.00
81	2	3	7	1	7	2	4	1	1	3		1	4	1	3	68	3.67	22.00	1.00
82	1	1	4	1	6	2	9	4	1	2		2	4	2	3	70	4.33	26.00	2.00
83	1	2	1	1	1	2	1	1	1	3		1	4	2	1	58	1.17	7.00	1.00
84	2	1	1	1	3	2	1	1	1	1		2	4	2	5	78	1.50	9.00	1.00
85	2	3	2	1	1	2	7	7	4	3		2	4	1	1	59	3.33	20.00	1.00
86	2	3	2	2	4	2	4	4	2	3		4	4	1	4	74	3.00	18.00	1.00
87	2	3	1	1	2	2	3	1	1	2		2	4	1	5	78	1.67	10.00	1.00
88	2	2	3	1	4	2	3	1	1	3		1	4	2	4	71	2.33	14.00	1.00
89	1	1	1	1	7	2	3	2	1	1		1	4	3	3	70	2.67	16.00	1.00
90	1	1	5	2	6	2	9	7	2	3		2	4	1	4	64	5.17	31.00	2.00
91	1	3	2	1	4	2	2	2	1	3		3	3	2	3	67	2.17	13.00	1.00
92	1	2	1	1	1	2	3	1	2	2		2	4	1	3	66	1.50	9.00	1.00
93	1	3	3	7	4	5	7	6	2	2		4	4	2	4	73	5.33	32.00	2.00
94	1	2	1	1	1	2	1	1	1	1		1	4	3	2	62	1.17	7.00	1.00

SUBJECTS	G S											MORIGIN	R P A	GPANUM	SESLEV	SESTOT	SESAVG	
	E O																	
	F M																	
	N	C	F	M	F	M	E	E	E	S	R							E P
D	L	I	I	O	O	D	D	S	R	N	U	G						
E	S	N	N	C	C	C	U	U	I	E	C	R	P					
R	S	C	C	C	C	C	C	C	B	L	R	P	A					
95	2	1	3	1	7	2	7	5	2	2	1	3	4	2	62	4.17	25.00	2.00
96	1	1	3	1	5	2	5	1	1	2	1	3	1	4	71	2.83	17.00	1.00
97	1	3	2	1	4	2	2	1	1	3	1	3	2	5	76	2.00	12.00	1.00
98	1	1	1	1	1	2	2	2	3	2	2	4	2	5	80	1.50	9.00	1.00
99	1	2	1	1	1	1	2	1	1	1	1	4	1	7	88	1.17	7.00	1.00
100	2	1	9	1	8	2	7	6	2	3	2	4	4	1	59	5.50	33.00	2.00
101	2	3	5	9	9	9	9	9	3	2	2	4	2	5	76	8.33	50.00	3.00
102	2	3	4	7	4	3	6	7	4	4	4	4	2	4	72	5.17	31.00	2.00
103	2	3	6	2	7	2	7	4	3	1	2	4	3	2	65	4.67	28.00	2.00
104	2	1	6	2	4	2	4	6	2	3	1	4	2	2	65	4.00	24.00	2.00
105	1	3	8	2	6	2	7	4	3	3	1	4	2	1	59	4.83	29.00	2.00
106	1	2	7	3	7	2	7	5	2	2	1	4	4	1	60	5.17	31.00	2.00
107	2	3	5	7	7	2	7	5	4	3	4	4	2	1	58	5.50	33.00	2.00
108	2	1	2	2	2	2	2	4	2	3	2	3	1	3	68	2.33	14.00	1.00
109	2	3	8	2	7	2	8	5	2	2	3	4	2	3	68	5.33	32.00	2.00
110	2	3	9	2	4	2	7	3	1	3	1	4	2	3	67	4.50	27.00	2.00
111	1	3	7	9	8	8	8	7	4	3	2	4	2	3	68	7.83	47.00	3.00
112	1	3	3	2	7	2	5	6	2	2	3	4	2	2	65	4.17	25.00	2.00
113	2	3	8	1	4	2	5	6	2	2	2	4	3	3	67	4.33	26.00	2.00
114	1	2	8	9	9	9	7	7	1	3	1	3	4	1	51	8.17	49.00	3.00
115	2	1	4	3	7	3	5	6	2	2	1	4	2	3	68	4.67	28.00	2.00
116	2	3	3	2	8	3	7	6	2	2	2	4	2	5	80	4.83	29.00	2.00
117	2	3	2	4	4	2	7	5	4	2	3	4	2	4	71	4.00	24.00	2.00
118	2	1	2	3	4	3	5	6	2	3	2	4	4	5	77	3.83	23.00	2.00
119	1	3	1	2	6	2	5	4	1	3	1	4	2	3	69	3.33	20.00	1.00
120	2	3	4	1	4	2	4	2	3	3	1	4	2	4	74	2.83	17.00	1.00
121	1	2	1	1	1	2	3	2	1	2	1	3	1	4	71	1.67	10.00	1.00
122	2	2	1	1	2	4	1	1	2	2	1	3	1	6	84	1.67	10.00	1.00
123	1	2	1	2	1	2	4	4	1	1	2	4	2	4	73	2.33	14.00	1.00
124	1	3	9	2	6	2	7	1	1	3	3	4	2	2	62	4.50	27.00	2.00
125	2	3	3	1	4	1	4	2	2	2	1	4	2	3	69	2.50	15.00	1.00
126	2	3	7	2	6	2	7	5	3	2	2	4	2	3	70	4.83	29.00	2.00
127	1	2	1	1	2	2	1	1	4	3	1	4	2	5	79	1.33	8.00	1.00
128	1	3	8	7	8	2	9	7	3	3	2	4	4	3	65	6.83	41.00	3.00
129	1	3	9	9	9	8	8	8	2	2	3	4	4	7	90	8.50	51.00	3.00
130	1	3	8	4	4	3	7	6	3	3	1	4	2	2	61	5.33	32.00	2.00
131	1	3	2	1	4	2	7	1	1	3	3	4	2	4	73	2.83	17.00	1.00
132	2	3	3	6	5	5	6	6	3	2	1	4	1	4	72	5.17	31.00	2.00
133	1	2	4	1	4	2	4	2	2	2	1	4	2	4	73	2.83	17.00	1.00
134	1	1	2	1	1	2	1	1	1	3	2	4	3	2	62	1.33	8.00	1.00
135	2	3	2	2	4	2	2	1	2	3	4	4	2	3	70	2.17	13.00	1.00
136	1	1	2	1	5	2	4	1	2	2	1	4	2	2	65	2.50	15.00	1.00
137	1	2	1	1	1	2	3	1	1	1	1	4	4	4	74	1.50	9.00	1.00
138	1	1	2	1	6	2	7	5	1	3	4	4	2	6	81	3.83	23.00	2.00
139	2	3	9	1	4	2	3	4	3	3	3	3	2	1	60	3.83	23.00	2.00
140	1	3	4	2	5	2	5	5	3	3	2	3	2	1	58	3.83	23.00	2.00
141	1	1	2	1	1	2	2	1	1	3	1	4	3	4	71	1.50	9.00	1.00

SUBJECTS	G S E O N C F M F M E E D L I I O O D D S R E S N N C C U U I E											E P N U G C R P			MORIGIN	R P A	GPANUM	SESLEV	SESTOT	SESAVG
	R	S	C	C	C	C	C	C	C	B	L	R	P	A						
142	1	3	2	1	4	2	2	1	1	2		2	4	2	4	75	2.00	12.00	1.00	
143	2	2	5	7	4	2	4	1	1	3		2	3	3	3	68	3.83	23.00	2.00	
144	1	3	2	1	4	1	2	2	1	3		2	4	2	3	67	2.00	12.00	1.00	
145	1	2	1	1	1	2	3	1	1	2		1	4	1	2	61	1.50	9.00	1.00	
146	1	1	9	2	4	2	7	5	2	2		1	3	3	1	58	4.83	29.00	2.00	
147	1	1	2	2	4	2	5	2	1	3		2	4	2	3	70	2.83	17.00	1.00	
148	1	1	1	1	1	1	3	3	2	1		1	4	2	2	62	1.67	10.00	1.00	
149	2	3	7	2	4	2	5	5	2	3		9	4	3	3	70	4.17	25.00	2.00	
150	1	1	3	1	7	2	5	5	3	4		2	4	2	2	62	3.83	23.00	2.00	
151	2	3	9	9	8	8	7	5	2	2		2	4	4	3	69	7.67	46.00	3.00	
152	1	1	3	2	5	2	5	2	1	1		4	4	2	9	97	3.17	19.00	1.00	
153	2	2	3	2	1	2	3	1	1	2		2	3	3	3	67	2.00	12.00	1.00	
154	1	3	2	2	1	2	4	1	3	3		1	3	4	2	61	2.00	12.00	1.00	
155	1	2	1	1	1	2	2	2	1	3		2	3	2	1	60	1.50	9.00	1.00	
156	2	3	6	2	4	2	5	4	2	2		2	4	3	3	69	3.83	23.00	2.00	
157	2	3	7	8	5	3	8	7	3	3		2	4	1	3	70	6.33	38.00	3.00	
158	1	1	2	2	4	2	5	3	3	2		2	4	2	3	70	3.00	18.00	1.00	
159	2	3	5	9	7	8	7	5	4	2		3	4	2	3	70	6.83	41.00	3.00	
160	2	3	3	2	7	2	7	2	3	1		2	4	2	3	70	3.83	23.00	2.00	
161	2	3	3	1	8	2	6	3	2	1		2	4	4	2	62	3.83	23.00	2.00	
162	2	3	2	2	3	2	5	1	1	3		1	3	2	2	64	2.50	15.00	1.00	
163	2	1	2	1	1	1	4	2	1	1		1	4	2	4	72	1.83	11.00	1.00	
164	2	1	2	1	1	1	1	1	1	2		1	3	3	4	73	1.17	7.00	1.00	
165	1	3	3	2	9	2	7	5	2	2		1	4	1	2	70	4.67	28.00	2.00	
166	1	1	9	2	8	2	9	5	4	3		3	4	2	1	60	5.83	35.00	2.00	
167	1	1	2	1	1	2	3	2	3	3		1	4	1	4	72	1.83	11.00	1.00	
168	2	1	1	1	4	2	6	1	1	1		1	1	3	4	71	2.50	15.00	1.00	
169	2	3	2	2	1	2	5	5	1	2		2	4	2	3	67	2.83	17.00	1.00	
170	2	2	3	1	1	2	3	1	1	2		1	4	1	5	76	1.83	11.00	1.00	
171	2	1	2	1	4	1	3	2	2	2		1	4	3	2	63	2.17	13.00	1.00	
172	2	3	7	1	7	2	7	5	3	2		2	4	2	6	81	4.83	29.00	2.00	
173	2	3	5	7	8	8	7	8	4	3		4	4	4	4	71	7.17	43.00	3.00	
174	2	3	5	2	4	2	5	5	3	3		2	4	3	5	78	3.83	23.00	2.00	
175	2	3	5	1	4	2	6	5	3	2		1	4	2	3	70	3.83	23.00	2.00	
176	1	1	3	1	4	2	2	2	1	3		2	4	2	3	70	2.33	14.00	1.00	
177	2	3	9	1	8	2	5	5	1	3		2	4	3	2	61	5.00	30.00	2.00	
178	2	3	7	4	7	3	5	5	3	2		2	4	2	2	64	5.17	31.00	2.00	
179	2	1	1	1	1	2	1	1	3	3		2	3	2	2	64	1.17	7.00	1.00	
180	2	3	7	8	7	2	7	5	2	2		2	4	2	3	66	6.00	36.00	2.00	
181	2	3	2	6	7	7	7	7	4	3		3	4	4	3	68	6.00	36.00	2.00	
182	2	3	5	3	1	2	5	5	1	3		3	4	3	3	69	3.50	21.00	1.00	
183	1	1	2	2	3	2	4	1	1	2		1	4	2	2	64	2.33	14.00	1.00	
184	1	3	5	1	8	2	5	5	4	4		4	4	2	2	62	4.33	26.00	2.00	
185	2	3	8	2	3	2	5	5	2	2		2	3	3	6	83	4.17	25.00	2.00	
186	2	1	2	2	1	2	7	2	2	2		1	4	2	6	83	2.67	16.00	1.00	
187	2	3	3	1	5	3	6	5	2	2		1	4	2	3	68	3.83	23.00	2.00	
188	2	2	5	7	4	2	4	1	1	3		2	3	3	3	68	3.83	23.00	2.00	

SUBJECTS	G S											MORIGIN	R P A	GPANUM	SESLEV	SESTOT	SESAVG		
	E O																		
	F M																		
	N	C	F	M	F	M	E	E	E	S	R							E	P
D	L	I	O	O	D	D	S	R			N	U	G						
E	S	N	N	C	C	C	C	C	C	B	L	C	R	P					
189	1	1	7	9	9	8	7	7	2	2		2	4	4	3	67	7.83	47.00	3.00
190	2	3	3	1	8	2	5	5	3	2		1	4	2	5	77	4.00	24.00	2.00
191	2	3	4	8	2	2	3	3	3	3		3	4	2	2	65	3.67	22.00	1.00
192	2	3	4	6	6	6	8	8	3	2		3	3	2	3	70	6.33	38.00	3.00
193	1	3	8	5	8	3	4	7	1	2		2	4	4	2	61	5.83	35.00	2.00
194	1	3	8	2	4	2	5	5	3	3		3	4	2	2	64	4.33	26.00	2.00
195	1	3	4	1	6	1	7	5	3	2		2	4	4	1	51	4.00	24.00	2.00
196	1	2	3	1	1	2	3	1	1	2		3	3	2	4	71	1.83	11.00	1.00
197	1	2	1	1	1	2	2	4	2	1		1	4	3	3	69	1.83	11.00	1.00
198	2	3	4	9	4	2	5	4	4	3		3	4	2	4	71	4.67	28.00	2.00
199	1	1	5	2	6	2	8	5	3	2		1	3	4	3	66	4.67	28.00	2.00
200	1	1	2	1	1	2	6	6	3	2		3	4	2	2	65	3.00	18.00	1.00
201	1	1	2	1	4	2	5	5	3	2		1	2	2	2	65	3.17	19.00	1.00
202	1	3	6	1	8	2	7	6	3	3		2	4	2	5	77	5.00	30.00	2.00
203	2	1	5	1	8	2	7	5	2	2		4	4	1	6	85	4.67	28.00	2.00
204	1	3	3	9	4	3	7	7	4	2		2	4	1	5	78	5.50	33.00	2.00
205	2	3	3	9	8	2	5	6	1	2		2	4	2	2	70	5.50	33.00	2.00
206	2	2	3	5	6	7	8	5	3	3		3	4	4	3	65	5.67	34.00	2.00
207	2	3	7	2	6	5	8	7	4	3		1	4	4	3	68	5.83	35.00	2.00
208	1	1	3	1	1	2	1	1	1	2		1	4	3	4	72	1.50	9.00	1.00
209	2	2	8	9	9	9	5	6	2	2		2	2	2	3	70	7.67	46.00	3.00
210	1	2	1	1	1	2	1	1	1	2		2	4	3	3	68	1.17	7.00	1.00
211	1	3	2	1	4	2	4	4	4	3		1	4	2	4	71	2.83	17.00	1.00
212	1	2	2	1	5	2	5	1	2	2		1	4	2	5	76	2.67	16.00	1.00
213	2	3	1	1	3	2	2	2	1	3		2	3	2	4	74	1.83	11.00	1.00
214	2	1	4	1	7	1	7	1	3	3		1	4	4	6	81	3.50	21.00	1.00
215	1	2	2	1	1	2	3	1	2	2		1	4	2	4	72	1.67	10.00	1.00
216	2	3	1	1	4	2	3	4	1	2		2	4	2	3	70	2.50	15.00	1.00
217	2	3	2	1	4	2	5	5	2	3		1	4	2	4	71	3.17	19.00	1.00
218	2	1	3	2	1	2	4	1	2	3		2	4	2	4	72	2.17	13.00	1.00
219	2	3	7	1	7	2	7	4	1	2		2	4	2	3	68	4.67	28.00	2.00
220	2	3	4	3	4	2	5	4	1	3		1	4	4	3	67	3.67	22.00	1.00
221	1	3	6	7	8	5	7	7	4	2		4	4	4	6	84	6.67	40.00	3.00
222	1	3	3	7	7	3	7	7	3	2		1	4	4	4	71	5.67	34.00	2.00
223	2	2	4	1	1	2	1	1	1	2		1	3	2	4	75	1.67	10.00	1.00
224	2	2	6	2	8	3	7	7	3	1		3	4	4	7	87	5.50	33.00	2.00
225	1	1	2	1	4	2	7	4	3	2		1	4	3	3	69	3.33	20.00	1.00
226	1	1	2	1	1	1	5	3	1	2		2	3	1	3	66	2.17	13.00	1.00
227	1	2	9	9	8	8	5	3	2	3		1	4	3	4	73	7.00	42.00	3.00
228	1	3	5	9	6	8	7	7	4	3		2	4	3	3	65	7.00	42.00	3.00
229	2	3	8	2	8	2	7	7	4	2		3	3	2	6	85	5.67	34.00	2.00
230	2	1	6	1	8	2	5	5	1	3		1	4	2	2	64	4.50	27.00	2.00
231	1	2	1	1	1	2	1	1	1	1		1	2	2	3	69	1.17	7.00	1.00
232	2	2	5	2	5	2	7	4	1	3		2	4	2	3	68	4.17	25.00	2.00
233	2	3	4	2	4	2	4	1	3	3		1	4	2	3	67	2.83	17.00	1.00
234	2	1	3	1	7	2	5	1	1	1		1	3	4	2	65	3.17	19.00	1.00
235	1	3	1	1	4	2	5	5	3	2		1	4	2	2	63	3.00	18.00	1.00

SUBJECTS	G S											MORIGIN	R P A	GPANUM	SESLEV	SESTOT	SESAVG			
	E O																			
	F M																			
	D	L	I	I	O	O	D	D	S	R								E P		
E	S	N	N	C	C	C	C	C	C	B	L	N U G								
	R	S	C	C	C	C	C	C	C	C	B	L	C	R	P					
236	2	1	1	1	1	2	1	1	2	3			2	4	2	4	71	1.17	7.00	1.00
237	1	2	1	1	1	2	2	1	2	3			1	4	2	1	56	1.33	8.00	1.00
238	1	2	7	3	9	3	7	6	4	3			2	2	2	1	57	5.83	35.00	2.00
239	1	1	3	1	4	2	7	4	2	2			2	4	2	6	82	3.50	21.00	1.00
240	1	1	3	1	5	2	4	4	3	2			1	4	2	2	63	3.17	19.00	1.00
241	2	3	7	1	8	2	7	1	1	1			1	3	4	3	70	4.33	26.00	2.00
242	2	3	9	2	4	1	6	1	3	3			1	3	2	4	72	3.83	23.00	2.00
243	2	1	3	2	5	3	4	5	3	2			1	4	2	2	65	3.67	22.00	1.00
244	2	1	2	2	4	2	6	5	1	2			3	4	3	3	70	3.50	21.00	1.00
245	2	3	5	9	4	2	7	6	4	2			1	4	4	3	69	5.50	33.00	2.00
246	2	1	6	3	8	2	7	5	2	2			3	3	3	3	67	5.17	31.00	2.00
247	2	3	2	7	9	1	8	7	4	2			2	4	4	3	70	5.67	34.00	2.00
248	2	3	9	2	6	2	9	5	2	2			2	4	4	3	68	5.50	33.00	2.00
249	1	3	5	2	6	2	7	5	3	3			2	4	4	1	60	4.50	27.00	2.00
250	2	1	1	1	1	1	2	2	3	1			1	4	4	2	61	1.33	8.00	1.00
251	2	3	1	2	4	1	5	5	3	3			1	4	4	5	78	3.00	18.00	1.00
252	2	3	3	2	4	2	5	2	1	2			2	4	4	5	76	3.00	18.00	1.00
253	1	1	3	4	6	5	7	7	3	3			2	2	2	2	62	5.33	32.00	2.00
254	2	3	9	9	8	9	9	8	4	3			2	4	4	3	68	8.67	52.00	3.00
255	2	1	2	2	5	2	4	2	4	2			1	4	4	3	69	2.83	17.00	1.00
256	2	3	2	2	9	2	5	2	1	2			1	3	3	4	72	3.67	22.00	1.00
257	2	2	3	2	7	2	5	1	3	3			1	4	4	3	70	3.33	20.00	1.00
258	2	1	5	1	4	2	5	4	2	2			1	3	3	3	70	3.50	21.00	1.00
259	2	3	6	4	6	2	7	7	3	2			3	4	4	3	66	5.33	32.00	2.00
260	2	3	7	2	8	2	5	5	4	3			1	4	4	3	67	4.83	29.00	2.00
261	2	1	1	1	1	1	3	1	1	1			1	4	4	7	87	1.33	8.00	1.00
262	2	1	2	2	2	3	7	6	2	2			2	4	2	6	81	3.67	22.00	1.00
263	1	3	3	3	3	3	6	6	1	1			1	4	2	5	77	4.00	24.00	2.00
264	1	3	9	2	4	2	7	5	4	1			4	4	2	4	72	4.83	29.00	2.00
265	1	2	3	2	4	2	3	1	1	3			1	4	2	5	78	2.50	15.00	1.00
266	1	1	9	8	8	3	5	5	2	2			1	4	2	5	78	6.33	38.00	3.00
267	1	1	8	1	4	2	6	2	3	1			1	4	2	5	77	3.83	23.00	2.00
268	1	3	1	1	4	1	7	5	2	3			3	4	2	5	78	3.17	19.00	1.00
269	1	3	9	1	8	2	5	4	3	3			3	4	4	5	78	4.83	29.00	2.00
270	1	3	9	3	8	2	7	5	3	2			3	4	2	5	79	5.67	34.00	2.00
271	2	3	5	9	5	2	7	5	3	3			4	4	4	5	79	5.50	33.00	2.00
272	2	1	9	2	4	2	5	5	1	2			3	4	2	5	76	4.50	27.00	2.00
273	2	1	9	5	7	2	7	4	3	3			2	4	1	5	76	5.67	34.00	2.00
274	1	3	9	1	5	1	4	4	4	2			3	4	3	6	82	4.00	24.00	2.00
275	2	3	2	2	6	2	7	5	2	2			3	3	4	6	81	4.00	24.00	2.00
276	1	1	4	1	1	2	1	1	1	3			3	4	1	6	81	1.67	10.00	1.00
277	1	2	2	1	4	2	7	5	1	2			1	3	2	2	65	3.50	21.00	1.00
278	1	3	9	4	4	2	7	5	1	2			1	3	4	5	77	5.17	31.00	2.00
279	1	3	3	3	4	3	7	5	3	3			1	3	2	6	83	4.17	25.00	2.00
280	1	3	3	1	4	2	5	3	3	1			2	4	4	7	89	3.00	18.00	1.00
281	1	3	9	1	4	1	3	2	1	1			1	4	4	6	83	3.33	20.00	1.00
282	1	1	8	3	4	2	6	5	4	3			1	4	2	7	87	4.67	28.00	2.00

SUBJECTS	G S											MORIGIN	R P A	GPANUM	SESLEV	SESTOT	SESAVG	
	E O																	
	F M																	
	N	C	F	M	F	M	E	E	E	E	E							E
D	L	I	I	O	O	D	D	S	R	R	N	U	G					
E	S	N	N	C	C	U	U	I	E	E	C	R	P					
R	S	C	C	C	C	C	C	C	B	L	R	P	A					
283	1	1	3	6	1	2	7	3	2	2	2	4	4	3	69	3.67	22.00	1.00
284	1	3	8	1	4	2	5	5	3	2	2	4	1	5	80	4.17	25.00	2.00
285	1	3	3	1	3	2	7	4	2	3	3	4	4	5	79	3.33	20.00	1.00
286	1	1	2	1	4	2	3	3	1	1	1	4	4	5	80	2.50	15.00	1.00
287	1	3	9	7	4	4	5	4	3	2	2	3	3	4	73	5.50	33.00	2.00
288	1	1	3	1	4	2	2	1	2	1	1	4	2	5	76	2.17	13.00	1.00
289	1	2	2	1	5	1	3	3	3	3	3	4	1	4	72	2.50	15.00	1.00
290	1	3	4	1	3	1	7	3	1	2	2	4	1	7	88	3.17	19.00	1.00
291	1	1	9	1	4	1	3	2	1	2	2	3	2	3	77	3.33	20.00	1.00
292	1	1	9	2	6	2	6	5	2	3	3	4	3	4	72	5.00	30.00	2.00
293	1	1	8	1	6	2	6	3	1	3	3	3	1	2	62	4.33	26.00	2.00
294	2	1	9	9	4	8	5	5	1	3	3	4	1	5	79	6.67	40.00	3.00
295	1	1	1	1	1	2	6	4	3	1	1	4	1	5	80	2.50	15.00	1.00
296	1	1	4	1	4	2	7	5	2	3	3	4	2	4	73	3.83	23.00	2.00
297	2	3	3	1	6	2	7	5	2	3	3	4	3	4	75	4.00	24.00	2.00
298	1	3	4	3	7	3	8	6	3	2	2	4	4	2	65	5.17	31.00	2.00
299	2	1	2	2	3	2	4	3	2	2	2	4	2	4	72	2.67	16.00	1.00
300	2	3	2	2	3	2	7	4	3	3	3	4	2	2	63	3.33	20.00	1.00
301	2	3	9	6	6	8	7	6	2	3	3	4	2	3	71	7.00	42.00	3.00
302	2	3	4	2	7	2	7	5	3	2	2	4	2	3	68	4.50	27.00	2.00
303	1	3	9	3	4	3	4	6	3	4	2	3	3	2	62	4.83	29.00	2.00
304	2	3	8	8	6	5	9	7	2	2	2	4	1	4	72	7.17	43.00	3.00
305	2	3	7	8	7	6	9	8	3	3	3	3	1	4	75	7.50	45.00	3.00
306	2	3	2	2	3	2	7	5	2	2	2	4	3	4	74	3.50	21.00	1.00
307	2	3	2	2	1	2	2	3	4	2	2	4	1	3	67	2.00	12.00	1.00
308	2	3	4	2	7	2	7	5	3	2	2	4	2	5	79	4.50	27.00	2.00
309	2	3	9	9	6	5	7	6	3	3	3	4	2	3	66	7.00	42.00	3.00
310	2	3	1	2	3	2	7	5	3	2	2	4	2	3	66	3.33	20.00	1.00
311	1	3	6	2	4	2	7	5	1	3	3	4	4	3	69	4.33	26.00	2.00
312	1	1	4	1	3	2	7	5	2	4	2	4	2	7	87	3.67	22.00	1.00
313	2	3	9	2	7	2	7	6	3	2	2	4	2	5	77	5.50	33.00	2.00
314	2	3	7	2	4	2	7	5	3	2	2	4	4	4	73	4.50	27.00	2.00
315	2	3	8	2	4	2	7	4	1	2	2	4	2	5	78	4.50	27.00	2.00
316	1	3	9	2	6	2	4	4	1	4	2	4	3	2	64	4.50	27.00	2.00
317	1	1	1	1	5	2	2	1	1	2	2	3	1	4	75	2.00	12.00	1.00
318	2	1	2	2	9	3	6	6	1	3	2	4	2	2	65	4.67	28.00	2.00
319	1	3	4	3	7	3	7	6	1	3	3	4	4	3	68	5.00	30.00	2.00
320	1	1	2	2	9	3	7	6	1	2	2	4	2	3	66	4.83	29.00	2.00
321	2	3	8	2	8	8	2	5	3	2	2	4	2	3	70	5.50	33.00	2.00
322	1	3	5	9	6	9	8	8	4	3	3	4	1	2	62	7.50	45.00	3.00
323	1	1	2	2	8	2	1	1	1	3	2	1	1	2	64	2.67	16.00	1.00
324	2	3	3	2	4	2	5	4	3	3	3	4	3	4	71	3.33	20.00	1.00
325	1	3	7	1	9	2	7	3	2	3	2	4	4	3	69	4.83	29.00	2.00
326	1	3	2	9	5	2	7	5	3	3	2	4	4	3	68	5.00	30.00	2.00
327	1	3	2	2	4	1	3	1	1	2	2	3	2	3	69	2.17	13.00	1.00
328	1	3	1	1	4	2	4	1	1	3	2	3	1	4	71	2.17	13.00	1.00
329	1	1	1	2	1	2	1	1	1	2	2	4	1	2	65	1.33	8.00	1.00

SUBJECTS	G S											MORIGIN	R P A	GPANUM	SESLEV	SESTOT	SESAVG	
	E O																	
	F M																	
	N	C	F	M	F	M	E	E	E	S	R							E P
D	L	I	I	O	O	D	D	S	R	N U G								
E	S	N	N	C	C	C	U	U	I	E	C R P							
R	S	C	C	C	C	C	C	C	B	L								
330	1	3	7	2	8	2	7	5	3	3	1	4	1	3	67	5.17	31.00	2.00
331	1	3	5	2	6	2	7	4	1	4	3	4	1	3	68	4.33	26.00	2.00
332	1	3	7	2	3	2	7	4	3	3	2	4	2	3	66	4.17	25.00	2.00
333	1	3	2	2	4	2	4	3	1	3	2	3	2	3	68	2.83	17.00	1.00
334	1	3	3	1	4	1	5	2	3	3	2	3	1	2	65	2.67	16.00	1.00
335	1	1	3	2	1	2	4	4	2	4	4	3	3	2	63	2.67	16.00	1.00
336	1	1	3	1	4	2	4	4	1	3	2	4	2	2	64	3.00	18.00	1.00
337	1	1	2	1	5	2	1	1	3	2	2	1	4	2	64	2.00	12.00	1.00
338	1	1	5	1	1	2	4	4	1	2	2	3	2	3	70	2.83	17.00	1.00
339	1	1	2	2	1	3	2	2	2	2	1	4	1	2	61	2.00	12.00	1.00
340	1	3	4	1	8	2	7	7	1	2	2	4	2	3	67	4.83	29.00	2.00
341	2	3	9	2	4	2	4	4	3	3	1	4	3	3	66	4.17	25.00	2.00
342	2	3	6	1	5	2	5	5	1	2	1	4	1	2	62	4.00	24.00	2.00
343	2	3	8	1	4	1	7	7	3	2	3	4	2	4	71	4.67	28.00	2.00
344	1	3	8	4	4	3	6	6	1	2	1	3	1	2	65	5.17	31.00	2.00
345	1	1	4	1	1	2	1	1	4	3	1	3	1	1	59	1.67	10.00	1.00
346	1	1	1	1	1	2	1	1	2	2	1	4	2	2	65	1.17	7.00	1.00
347	1	1	1	1	1	2	1	1	1	1	1	2	1	5	76	1.17	7.00	1.00
348	1	1	2	1	1	1	4	4	1	2	1	4	4	3	69	2.17	13.00	1.00
349	1	3	3	1	4	2	2	4	3	4	3	3	2	1	58	2.67	16.00	1.00
350	1	1	2	1	1	1	4	1	1	3	2	4	2	4	72	1.67	10.00	1.00
351	2	3	2	1	2	1	5	4	3	3	2	4	2	3	68	2.50	15.00	1.00
352	2	3	7	2	8	2	2	2	1	3	2	4	1	2	63	3.83	23.00	2.00
353	1	3	2	2	4	3	5	5	3	3	1	4	2	3	70	3.50	21.00	1.00
354	2	3	2	1	4	2	6	5	2	2	1	4	4	5	79	3.33	20.00	1.00
355	1	3	2	3	4	3	7	6	3	2	2	4	4	7	88	4.17	25.00	2.00
356	1	3	5	1	3	3	5	6	4	4	2	4	1	5	79	3.83	23.00	2.00
357	1	3	9	4	4	3	6	5	3	2	1	4	1	3	67	5.17	31.00	2.00
358	1	3	3	9	8	2	7	9	3	3	2	4	4	4	71	6.33	38.00	3.00
359	1	3	4	3	8	3	7	5	2	3	2	3	1	3	69	5.00	30.00	2.00
360	1	3	9	1	8	1	7	6	3	4	1	3	3	5	78	5.33	32.00	2.00
361	1	3	9	9	8	8	7	5	2	4	2	3	3	2	63	7.67	46.00	3.00
362	1	3	3	1	7	1	5	5	3	3	1	4	2	4	71	3.67	22.00	1.00
363	2	3	5	1	5	1	7	5	3	3	1	4	2	5	76	4.00	24.00	2.00
364	1	3	5	1	4	1	5	5	1	3	2	2	1	1	60	3.50	21.00	1.00
365	2	3	6	1	4	1	5	4	3	2	1	4	2	4	74	3.50	21.00	1.00
366	1	3	3	1	4	1	6	5	3	4	1	4	2	4	72	3.33	20.00	1.00
367	1	1	1	1	1	1	4	1	1	2	2	4	2	2	63	1.50	9.00	1.00
368	1	1	2	1	3	1	1	1	4	2	1	3	2	3	67	1.50	9.00	1.00
369	1	1	4	1	1	1	5	4	2	4	2	3	2	3	67	2.67	16.00	1.00
370	1	2	2	1	1	2	3	2	2	3	2	3	2	4	74	1.83	11.00	1.00
371	1	1	3	1	3	1	7	4	1	2	1	3	1	4	71	3.17	19.00	1.00
372	1	1	2	1	4	1	5	3	2	1	4	4	4	4	72	2.67	16.00	1.00
373	1	3	3	1	4	1	5	5	3	3	1	4	2	3	68	3.17	19.00	1.00
374	1	3	7	1	4	1	4	3	4	2	3	4	2	3	69	3.33	20.00	1.00
375	2	1	4	1	1	1	4	2	2	3	1	4	2	3	70	2.17	13.00	1.00
376	2	3	2	1	7	1	5	2	3	2	2	4	3	5	76	3.00	18.00	1.00

SUBJECTS	G S E O N C F M F M E E D L I I O O D D S R E S N N C C U U I E											E P N U G C R P						
	R	S	C	C	C	C	C	C	B	L	MORIGIN	R	P	A	GPANUM	SESLEV	SESTOT	SESAVC
377	2	3	2	1	4	1	4	2	3	2	2	4	2	4	75	2.33	14.00	1.00
378	2	3	9	9	8	8	5	5	3	2	1	4	1	4	72	7.33	44.00	3.00
379	1	3	3	1	5	1	5	4	1	4	1	4	2	2	64	3.17	19.00	1.00
380	2	3	9	1	8	1	5	6	3	2	2	3	2	3	66	5.00	30.00	2.00
381	1	1	4	3	4	5	4	6	1	3	1	4	2	2	61	4.33	26.00	2.00
382	1	2	3	1	3	1	7	4	1	3	3	4	2	5	77	3.17	19.00	1.00
383	1	3	8	1	4	1	2	2	1	3	2	4	3	4	72	3.00	18.00	1.00
384	1	3	2	1	3	1	2	1	1	4	2	4	1	2	61	1.67	10.00	1.00
385	1	1	2	2	4	2	4	4	1	3	1	4	2	3	69	3.00	18.00	1.00
386	1	3	2	3	4	1	5	5	3	3	1	4	2	6	83	3.33	20.00	1.00
387	1	2	2	2	7	2	5	4	2	4	1	4	1	2	65	3.67	22.00	1.00
388	1	3	9	2	4	1	3	4	4	3	2	2	3	3	66	3.83	23.00	2.00
389	1	1	2	2	4	2	4	1	2	3	2	4	1	2	65	2.50	15.00	1.00
390	2	3	4	1	8	1	3	4	2	3	1	4	2	2	63	3.50	21.00	1.00
391	2	3	4	1	4	1	2	1	1	2	1	3	2	2	65	2.17	13.00	1.00
392	2	3	3	1	3	1	7	4	2	3	2	2	1	4	72	3.17	19.00	1.00
393	1	3	3	2	1	2	1	4	4	3	2	4	3	2	65	2.17	13.00	1.00
394	1	3	2	1	4	3	7	6	3	2	2	4	2	1	57	3.83	23.00	2.00
395	1	3	5	1	8	2	7	7	3	3	3	4	4	4	74	5.00	30.00	2.00
396	2	3	7	2	8	2	5	6	1	2	2	4	3	3	66	5.00	30.00	2.00
397	2	1	7	1	8	1	5	5	2	3	3	4	2	3	68	4.50	27.00	2.00
398	1	2	4	1	4	2	5	2	2	2	4	2	2	5	76	3.00	18.00	1.00
399	1	1	4	2	6	2	8	5	2	2	1	4	2	5	76	4.50	27.00	2.00
400	2	3	2	6	3	3	7	6	2	3	2	4	2	5	78	4.50	27.00	2.00
401	1	3	2	6	3	3	7	6	2	2	2	4	1	3	69	4.50	27.00	2.00
402	1	3	2	2	3	2	7	1	2	3	1	4	1	4	71	2.83	17.00	1.00
403	1	3	3	1	8	3	7	6	3	3	3	4	4	2	64	4.67	28.00	2.00
404	1	1	2	1	1	2	8	4	4	2	3	4	2	3	70	3.00	18.00	1.00
405	1	1	3	8	9	9	9	7	1	3	2	3	1	5	80	7.50	45.00	3.00
406	2	1	9	9	8	9	8	7	2	2	2	4	4	5	77	8.33	50.00	3.00
407	1	1	1	1	1	1	1	1	1	3	1	4	2	1	57	1.00	6.00	1.00
408	1	1	1	2	5	2	4	4	1	3	1	3	2	2	62	3.00	18.00	1.00
409	2	1	9	8	8	2	6	5	3	2	2	4	4	2	63	6.33	38.00	3.00
410	1	3	3	1	3	2	4	4	2	2	2	4	2	5	78	2.83	17.00	1.00
411	1	3	2	2	3	2	7	5	3	3	3	4	4	5	78	3.50	21.00	1.00
412	1	3	2	1	4	1	5	4	1	3	3	3	2	2	62	2.83	17.00	1.00
413	1	3	2	5	5	3	8	6	3	2	1	4	4	3	69	4.83	29.00	2.00
414	1	3	5	1	6	2	9	4	3	2	2	3	4	4	75	4.50	27.00	2.00
415	2	3	2	1	4	1	3	5	1	2	2	4	2	5	76	2.67	16.00	1.00
416	2	3	3	1	1	1	6	3	4	1	2	3	4	5	77	2.50	15.00	1.00
417	2	1	2	1	5	1	7	5	2	3	2	4	2	4	71	3.50	21.00	1.00
418	2	1	9	1	7	2	3	4	1	2	1	4	2	4	75	4.33	26.00	2.00
419	2	3	2	1	5	1	3	1	3	3	2	3	2	3	66	2.17	13.00	1.00
420	2	3	3	1	8	2	6	5	2	2	2	4	2	3	67	4.17	25.00	2.00
421	2	2	1	1	5	2	1	1	1	2	2	3	2	5	80	1.83	11.00	1.00
422	2	1	2	1	4	2	4	4	2	2	2	3	1	5	78	2.83	17.00	1.00
423	1	3	3	1	5	2	5	4	1	3	1	4	2	3	68	3.33	20.00	1.00

SUBJECTS	G S											MORIGIN	R P A	GPANUM	SESLEV	SESTOT	SESAVG		
	R	S	C	C	C	C	C	C	C	C	B							L	
424	1	1	1	2	3	1	1	1	1	1	1	4	4	2	7	86	1.50	9.00	1.00
425	1	2	2	2	2	1	2	2	1	1	1	4	4	2	5	78	1.83	11.00	1.00
426	2	1	3	1	1	1	2	2	1	1	1	4	4	2	7	90	1.67	10.00	1.00
427	2	3	4	3	1	1	2	2	1	2	1	4	4	2	8	91	2.17	13.00	1.00
428	1	3	1	5	1	1	3	3	1	2	1	4	3	2	7	88	2.33	14.00	1.00
429	1	1	7	2	2	4	3	3	1	3	1	3	3	2	6	85	3.50	21.00	1.00
430	2	1	5	4	2	4	3	3	1	1	1	2	2	3	6	82	3.50	21.00	1.00
431	1	2	2	2	2	2	1	1	1	1	1	2	4	3	6	83	1.67	10.00	1.00
432	1	2	1	2	3	2	4	1	1	1	1	1	3	2	2	62	2.17	13.00	1.00
433	1	2	1	2	4	2	1	3	1	1	1	4	3	1	7	88	2.17	13.00	1.00
434	2	2	1	2	5	2	1	4	1	1	1	4	3	1	8	93	2.50	15.00	1.00
435	2	1	1	2	6	3	1	5	1	3	1	3	4	1	6	82	3.00	18.00	1.00
436	1	1	9	5	8	7	6	9	4	4	4	4	1	4	4	62	7.33	44.00	3.00
437	2	2	8	5	7	7	6	9	3	4	4	4	4	3	2	72	7.00	42.00	3.00
438	1	1	7	4	7	8	5	9	3	4	4	1	3	4	4	61	6.67	40.00	3.00
439	1	2	6	3	7	6	5	8	2	4	2	1	2	2	2	71	5.83	35.00	2.00
440	1	3	5	7	6	5	4	7	1	4	1	2	2	2	3	60	5.67	34.00	2.00
441	2	3	9	8	6	6	6	4	3	4	4	2	2	4	1	65	6.50	39.00	3.00
442	2	1	9	9	6	6	7	6	4	3	3	4	3	2	2	67	7.17	43.00	3.00
443	1	1	8	7	6	6	6	6	4	3	3	4	4	3	3	59	6.50	39.00	3.00
444	2	1	8	1	1	4	4	5	2	3	2	4	4	4	1	58	3.83	23.00	2.00
445	2	2	7	2	3	3	4	5	1	2	2	4	2	1	1	61	4.00	24.00	2.00
446	1	3	1	3	3	2	5	4	2	1	1	1	1	1	2	67	3.00	18.00	1.00
447	2	1	2	4	5	1	1	3	2	2	2	2	1	1	2	92	2.67	16.00	1.00
448	2	3	5	3	4	1	3	4	2	3	3	2	1	1	1	93	3.33	20.00	1.00
449	2	3	6	5	3	4	5	6	3	4	4	3	3	3	1	81	4.83	29.00	2.00
450	2	3	6	1	1	4	6	3	3	4	4	3	4	2	3	70	3.50	21.00	1.00
451	1	3	6	2	3	3	7	8	3	4	4	3	3	4	3	72	4.83	29.00	2.00
452	1	1	6	1	4	5	4	8	1	4	4	3	3	4	3	62	4.67	28.00	2.00
453	1	1	7	7	4	5	3	3	2	4	4	3	4	3	3	81	4.83	29.00	2.00
454	1	2	8	8	8	9	2	8	4	4	4	4	3	2	2	60	7.17	43.00	3.00
455	1	2	8	8	9	9	2	8	4	4	4	4	4	2	2	69	7.33	44.00	3.00
456	2	2	5	8	9	9	7	7	4	4	4	4	2	2	2	70	7.50	45.00	3.00
457	2	1	5	5	4	6	5	4	3	3	3	3	2	2	2	70	4.83	29.00	2.00
458	2	2	4	4	5	7	2	4	2	2	2	2	2	1	2	80	4.33	26.00	2.00
459	1	3	4	5	6	7	3	3	3	2	2	4	2	2	2	81	4.67	28.00	2.00
460	2	1	3	6	5	6	4	9	3	2	2	4	2	3	2	69	5.50	33.00	2.00
461	1	2	4	9	6	6	5	8	4	4	4	4	2	1	3	77	6.33	38.00	3.00
462	2	3	4	9	3	8	8	8	4	3	3	1	1	2	2	78	6.67	40.00	3.00
463	1	1	5	8	9	8	5	6	4	3	3	4	1	2	3	65	6.83	41.00	3.00
464	1	3	9	7	9	4	6	7	4	4	4	4	4	2	3	62	7.00	42.00	3.00
465	1	3	7	9	9	9	9	8	2	1	1	4	4	4	2	61	8.50	51.00	3.00
466	1	2	6	9	8	9	8	7	4	1	1	4	4	4	3	67	7.83	47.00	3.00
467	1	1	6	8	7	9	7	6	3	1	1	4	4	4	2	65	7.17	43.00	3.00
468	2	1	6	8	7	8	7	6	4	1	1	4	4	4	3	70	7.00	42.00	3.00
469	1	2	6	2	6	8	7	6	4	1	1	4	3	4	4	71	5.83	35.00	2.00
470	2	2	5	3	3	4	6	5	2	1	1	4	3	4	3	66	4.33	26.00	2.00

SUBJECTS	G S											MORIGIN	R P A	GPANUM	SESLEV	SESTOT	SESAVG			
	E O					F M														
	N	C	F	M	F	M	E	E	E	D	D							S	R	
	D	L	I	I	O	O	D	D	S	R	E							E	E	
E	S	N	N	C	C	C	C	C	C	C	C	C								
R	S	C	C	C	C	C	C	C	C	C	C	C								
471	2	3	5	3	4	4	6	6	2	1			4	3	4	2	62	4.67	28.00	2.00
472	2	1	5	4	5	6	5	8	4	2			4	3	4	2	61	5.50	33.00	2.00
473	2	1	4	5	6	6	4	7	4	1			4	3	4	1	59	5.33	32.00	2.00
474	2	2	8	6	7	6	7	7	3	4			4	3	4	1	56	6.83	41.00	3.00
475	1	2	5	6	7	7	3	7	2	4			4	3	4	3	66	5.83	35.00	2.00
476	1	2	4	6	6	7	7	6	2	1			4	3	3	3	67	6.00	36.00	2.00
477	2	2	3	7	6	5	6	6	3	1			4	4	4	3	69	5.50	33.00	2.00
478	2	2	2	8	9	5	6	6	2	2			4	4	2	3	70	6.00	36.00	2.00
479	2	2	6	9	6	8	7	8	4	3			4	3	2	5	78	7.33	44.00	3.00
480	2	2	6	9	6	5	9	8	4	2			4	3	4	5	77	7.17	43.00	3.00
481	2	1	5	9	5	4	8	7	4	2			4	4	4	4	73	6.33	38.00	3.00
482	2	3	7	8	6	4	8	7	4	2			4	4	4	5	79	6.67	40.00	3.00
483			7	1	7	6	8	6	3	1			4	3	4	5	77	5.83	35.00	2.00
484			9	3	7	6	7	5	1	2			3	3	4	3	66	6.17	37.00	2.00
485	1	2	8	4	8	8	6	4	2	2			3	3	3	1	57	6.33	38.00	3.00
486	1	2	7	5	7	6	8	4	2	2			2	4	4	3	69	6.17	37.00	2.00
487	1	2	6	3	4	5	6	4	4	3			4	4	4	5	80	4.67	28.00	2.00
488	1	2	6	4	4	3	5	4	4	3			4	4	4	6	83	4.33	26.00	2.00
489	1	2	6	4	5	2	4	3	4	1			4	3	4	2	61	4.00	24.00	2.00
490	2	1	5	5	6	5	4	3	3	3			4	3	4	3	67	4.67	28.00	2.00
491	2	1	4	6	6	2	5	6	2	3			3	3	4	8	92	4.83	29.00	2.00
492	1	3	5	7	8	5	5	4	1	1			2	4	3	8	91	5.67	34.00	2.00
493	1	2	5	8	8	9	8	3	4	1			4	4	4	3	67	6.83	41.00	3.00
494	1	1	1	1	4	2	5	3	1	2			3	3	2	5	77	2.67	16.00	1.00
495	1	3	6	1	8	2	7	4	1	3			3	4	2	4	74	4.67	28.00	2.00
496	1	1	5	7	6	3	7	6	1	3			1	4	3	2	64	5.67	34.00	2.00
497	1	1	2	1	4	3	7	5	3	3			1	4	2	2	62	3.67	22.00	1.00
498	1	3	3	2	8	2	7	5	3	3			1	4	2	2	62	4.50	27.00	2.00
499	1	2	3	2	4	2	5	4	2	3			1	4	4	3	70	3.33	20.00	1.00
500	2	2	1	1	1	2	1	1	3	3			1	1	1	2	64	1.17	7.00	1.00
501	2	3	3	1	3	2	6	4	1	2			3	3	2	2	63	3.17	19.00	1.00
502	2	1	1	1	4	2	5	4	1	2			1	4	1	5	79	2.83	17.00	1.00
503	2	3	3	1	4	2	2	1	4	2			2	4	2	3	68	2.17	13.00	1.00
504	2	3	3	1	4	1	7	4	2	3			1	4	2	3	70	3.33	20.00	1.00
505	1	3	1	1	3	1	7	5	1	2			2	4	2	5	76	3.00	18.00	1.00
506	1	1	2	1	4	1	4	2	2	2			2	4	2	3	69	2.33	14.00	1.00
507	1	3	4	2	4	2	7	5	3	2			3	4	4	6	83	4.00	24.00	2.00
508	1	1	1	2	5	2	5	4	1	2			1	4	2	3	70	3.17	19.00	1.00
509	1	1	1	1	3	1	6	1	2	2			1	2	1	4	72	2.17	13.00	1.00
510	1	1	2	1	1	2	3	1	1	2			2	4	1	4	72	1.67	10.00	1.00
511	1	1	1	2	1	2	5	1	2	3			2	4	1	3	66	2.00	12.00	1.00
512	1	3	2	1	3	1	6	1	1	2			1	3	1	3	69	2.33	14.00	1.00
513	2	3	3	5	6	5	8	7	3	3			2	4	3	4	75	5.67	34.00	2.00
514	2	3	5	5	4	3	7	7	1	2			2	4	4	6	82	5.17	31.00	2.00
515	2	3	4	4	7	5	7	7	2	4			4	4	4	6	84	5.67	34.00	2.00
516	2	3	6	2	4	2	7	2	3	3			2	4	2	2	62	3.83	23.00	2.00
517	1	1	2	2	4	2	2	1	1	3			2	3	1	4	74	2.17	13.00	1.00

SUBJECTS	G S												MORIGIN	E P		GPANUM	SESLEV	SESTOT	SESAVG	
	E O	N C	F M	F M	E E	E E	S R	N U	G	C R	P	P A								
	R	S	C	C	C	C	C	C	C	C	B	L	R	P	A					
518	1	2	5	2	9	2	7	2	3	4			1	3	3	4	75	4.50	27.00	2.00
519	2	1	5	2	5	2	7	1	1	2			1	4	1	4	75	3.67	22.00	1.00
520	1	3	3	1	7	2	5	2	2	4			2	4	1	3	70	3.33	20.00	1.00
521	2	1	2	1	5	1	4	1	2	3			1	4	1	2	65	2.33	14.00	1.00
522	1	1	4	1	4	2	4	3	1	2			2	4	2	3	67	3.00	18.00	1.00
523	1	3	3	1	1	1	3	2	1	3			2	4	2	4	73	1.83	11.00	1.00
524	1	3	2	1	5	2	7	5	3	3			4	4	2	2	65	3.67	22.00	1.00
525	1	3	2	2	4	2	4	4	2	2			3	3	2	3	68	3.00	18.00	1.00
526	1	3	3	6	6	3	7	7	3	3			3	4	4	4	72	5.33	32.00	2.00
527	1	1	6	1	8	2	8	5	3	2			2	4	1	3	70	5.00	30.00	2.00
528	2	3	9	7	8	3	7	5	3	3			1	3	1	5	77	6.50	39.00	3.00
529	1	1	2	1	4	1	4	1	1	3			2	4	1	5	79	2.17	13.00	1.00
530	1	1	7	9	3	3	7	6	2	3			2	3	2	3	70	5.83	35.00	2.00
531	1	1	2	1	1	2	4	1	1	2			2	3	1	5	78	1.83	11.00	1.00
532	2	1	2	1	6	2	6	1	1	2			1	4	1	5	77	3.00	18.00	1.00
533	2	3	9	1	6	2	7	5	3	2			1	4	2	3	68	5.00	30.00	2.00
534	2	3	9	1	6	2	7	5	3	3			2	4	2	4	73	5.00	30.00	2.00
535	2	3	4	1	3	2	7	6	1	3			1	3	3	4	72	3.83	23.00	2.00
536	2	3	3	9	7	5	7	7	4	3			2	4	4	4	73	6.33	38.00	3.00
537	2	3	7	2	6	2	7	4	2	3			2	4	4	5	78	4.67	28.00	2.00
538	2	3	9	9	8	2	7	5	1	2			1	4	4	2	63	6.67	40.00	3.00
539	1	3	9	1	9	2	7	4	1	2			2	4	2	4	75	5.33	32.00	2.00
540	2	3	8	1	8	2	7	5	2	3			2	4	1	4	72	5.17	31.00	2.00
541	1	1	1	1	1	2	2	1	3	4			4	3	1	2	61	1.33	8.00	1.00
542	1	1	1	1	4	1	4	1	1	2			2	1	1	3	69	2.00	12.00	1.00
543	1	2	1	4	2	5	1	3	3	1			4	3	3	4	72	2.67	16.00	1.00
544	1	2	2	3	4	2	5	4	1	3			2	4	2	2	65	3.33	20.00	1.00
545	2	3	3	3	5	5	7	7	1	3			3	4	1	5	77	5.00	30.00	2.00
546	1	3	2	1	4	2	3	1	1	3			1	3	2	4	75	2.17	13.00	1.00
547	1	1	2	1	4	2	3	3	3	3			1	4	1	3	67	2.50	15.00	1.00
548	1	1	2	1	1	2	3	1	1	3			1	2	1	5	77	1.67	10.00	1.00
549	2	1	1	1	1	2	4	4	1	3			1	4	1	4	74	2.17	13.00	1.00
550	1	1	3	1	4	2	3	2	1	2			1	4	2	2	63	2.50	15.00	1.00
551	1	1	1	1	1	2	2	1	3	3			2	3	1	5	77	1.33	8.00	1.00
552	1	2	9	7	8	6	8	7	4	2			2	1	2	2	62	7.50	45.00	3.00
553	1	2	2	3	5	7	3	8	3	2			2	1	2	3	67	4.67	28.00	2.00
554	2	1	1	1	2	2	2	2	1	2			2	4	2	6	81	1.67	10.00	1.00
555	2	1	3	4	1	1	2	2	1	2			1	4	2	6	82	2.17	13.00	1.00
556	2	3	3	2	1	2	4	5	1	2			1	4	2	5	79	2.83	17.00	1.00
557	1	3	8	7	9	8	7	8	2	2			1	4	2	1	59	7.83	47.00	3.00
558	1	3	9	8	7	7	9	9	1	2			3	4	2	7	88	8.17	49.00	3.00
559	1	3	4	5	7	8	9	9	1	2			2	4	2	6	82	7.00	42.00	3.00
560	1	3	9	7	6	8	9	8	3	1			1	4	2	2	62	7.83	47.00	3.00
561	2	2	2	3	4	3	2	6	2	1			2	4	2	3	69	3.33	20.00	1.00
562	1	2	1	1	2	2	2	2	1	1			2	4	2	7	88	1.67	10.00	1.00
563	1	2	2	1	2	3	5	1	1	1			1	4	2	8	92	2.50	15.00	1.00
564	2	1	4	3	3	2	2	2	1	1			1	4	2	5	80	2.67	16.00	1.00

SUBJECTS	G S E O N C F M F M E E D L I I O O D D S R E S N N C C U U I E											E P N U G C R P										
	R	S	C	C	C	C	C	C	B	L	MORIGIN	R	P	A	G	P	A	N	U	M	SESLEV	SESTOT
565	1	3	7	8	8	9	8	7	4	2	1	4	1	4	71	7.83	47.00	3.00				
566	2	1	8	9	8	7	7	7	3	3	1	4	2	2	61	7.67	46.00	3.00				
567	1	2	1	2	3	4	2	2	2	2	2	4	2	6	83	2.33	14.00	1.00				
568	2	3	2	2	3	5	2	2	1	1	4	3	1	7	90	2.67	16.00	1.00				
569	1	2	1	1	1	1	1	1	1	1	4	4	1	8	93	1.00	6.00	1.00				
570	1	2	8	8	8	7	6	7	1	1	4	1	3	2	61	7.33	44.00	3.00				
571	1	1	7	6	7	2	9	8	1	1	2	2	3	4	74	6.50	39.00	3.00				
572	1	1	1	2	3	5	1	1	2	1	2	4	3	6	81	2.17	13.00	1.00				
573	2	3	5	6	7	9	8	7	2	1	1	4	3	1	60	7.00	42.00	3.00				
574	1	2	2	5	6	2	7	6	1	1	1	4	3	4	72	4.67	28.00	2.00				
575	1	2	2	1	3	1	4	2	1	1	2	4	1	7	88	2.17	13.00	1.00				
576	2	2	3	2	3	2	4	2	1	1	1	4	1	6	84	2.67	16.00	1.00				
577	1	2	2	2	2	2	3	3	1	1	2	4	1	8	95	2.33	14.00	1.00				
578	1	2	1	1	1	1	2	3	1	1	1	4	1	8	93	1.50	9.00	1.00				
579	2	1	2	2	1	2	1	2	2	1	1	4	1	7	89	1.67	10.00	1.00				
580	1	3	3	1	1	1	4	2	1	1	3	4	1	5	79	2.00	12.00	1.00				
581	2	3	8	8	6	3	8	7	2	3	2	4	2	1	59	6.67	40.00	3.00				
582	1	1	3	2	1	2	4	1	1	2	2	4	1	2	66	2.17	13.00	1.00				
583	1	1	2	1	1	2	5	5	1	3	2	4	1	4	73	2.67	16.00	1.00				
584	1	3	2	1	1	1	5	2	2	3	1	4	1	4	74	2.00	12.00	1.00				
585	2	3	8	2	7	2	7	5	2	3	2	4	3	5	77	5.17	31.00	2.00				
586	1	3	7	2	4	2	7	5	3	2	1	4	4	4	71	4.50	27.00	2.00				
587	1	1	2	1	4	2	4	1	1	2	1	4	2	2	61	2.33	14.00	1.00				
588	1	3	3	1	1	2	7	7	1	3	1	4	2	4	76	3.50	21.00	1.00				
589	1	3	2	2	7	3	7	6	3	3	1	4	4	6	87	4.50	27.00	2.00				
590	2	3	9	2	8	2	7	5	3	3	1	4	2	3	67	5.50	33.00	2.00				
591	1	3	7	2	8	2	7	5	3	3	1	4	2	6	83	5.17	31.00	2.00				
592	1	3	3	2	4	2	7	6	2	3	2	4	2	5	80	4.00	24.00	2.00				
593	1	3	4	1	3	1	7	4	2	2	2	4	2	6	81	3.33	20.00	1.00				
594	1	1	1	1	1	1	1	2	3	2	2	3	2	7	86	1.17	7.00	1.00				
595	1	3	5	1	5	1	8	5	3	3	2	3	4	6	83	4.17	25.00	2.00				
596	2	3	9	9	8	8	7	5	3	2	3	3	3	1	54	7.67	46.00	3.00				
597	1	3	9	1	8	1	9	4	4	3	2	4	2	5	78	5.33	32.00	2.00				
598	1	1	3	1	3	2	6	2	1	2	1	4	2	6	85	2.83	17.00	1.00				
599	1	1	2	1	4	1	7	5	4	2	2	4	1	6	84	3.33	20.00	1.00				
600	2	1	1	1	1	1	3	2	1	1	2	4	2	7	89	1.50	9.00	1.00				
601	2	3	9	9	7	6	6	6	4	2	1	1	4	1	60	7.17	43.00	3.00				
602	1	3	7	7	6	6	6	6	4	3	2	1	4	1	58	6.33	38.00	3.00				
603	1	3	6	5	5	5	4	8	3	2	3	2	3	4	72	5.50	33.00	2.00				
604	2	1	3	2	1	2	3	2	2	1	2	1	4	7	86	2.17	13.00	1.00				
605	2	1	2	2	2	2	3	2	2	1	1	1	4	8	95	2.17	13.00	1.00				
606	2	1	1	2	1	2	2	1	2	1	1	1	4	8	92	1.50	9.00	1.00				
607	1	1	3	2	2	2	1	1	2	1	2	1	4	7	88	1.83	11.00	1.00				
608	1	2	8	2	9	2	7	4	1	1	1	2	3	6	82	5.33	32.00	2.00				
609	1	1	7	2	5	2	8	6	1	1	3	4	3	5	77	5.00	30.00	2.00				

APPENDIX F
SPSS/PC+ COMPUTER PRINTOUT

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Summaries of By levels of	GPANUM PURP	NUMERICAL GPA PURPOSE	Mean	Std Dev	Cases
Variable	Value	Label			
For Entire Population			70.9458	8.2935	609
PURP	1	GET A JOB & SURVIVE	72.8182	8.8722	121
PURP	2	DO BETTER THAN M & F	70.5309	7.9960	275
PURP	3	FOR PARENTS PRIDE	69.5952	6.8144	84
PURP	4	DO AS WELL AS M & F	70.9535	9.0034	129

 Total Cases = 609

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This procedure was completed at 12:46:04

oneway /variables gpanum by sesavg (1,3) /ranges tukey.

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----- O N E W A Y -----

Variable GPANUM NUMERICAL GPA
 By Variable SESAVG AVERAGE SES

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	2	1495.0358	747.5179	11.2339	.0000
Within Groups	606	40324.1760	66.5415		
Total	608	41819.2118			

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----- O N E W A Y -----

Variable GPANUM NUMERICAL GPA
 By Variable SESAVG AVERAGE SES

Multiple Range Test

Tukey-HSD Procedure
 Ranges for the .050 level -

3.33 3.33

The ranges above are table ranges.
 The value actually compared with Mean(J)-Mean(I) is..
 $5.7681 * \text{Range} * \text{Sqrt}(1/N(I) + 1/N(J))$

(*) Denotes pairs of groups significantly different at the .050 level

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----- O N E W A Y -----

Variable	GPANUM	NUMERICAL GPA
(Continued)		
		G G G
		r r r
		p p p
Mean	Group	3 2 1
67.9351	Grp 3	
70.0858	Grp 2	
72.3913	Grp 1	* *

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This procedure was completed at 12:02:22

Summary	SPSS/PC+
Statistics	

Pearson Chi_square	Value
-----	-----
FINC	91.95
MINC	85.88
FOCC	118.81
MOCC	86.96
FEDU	104.19
MEDU	89.82

```

-----
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Statistic                               Value      ASE1
-----

```

```

Eta :
  with MORIGIN dependent      .27848
  with GPANUM  dependent      .07361
Statistic                     Value      ASE1
-----

```

```

Eta :
  with REL      dependent      .39183
  with GPANUM  dependent      .30920
Statistic                     Value      ASE1
-----

```

```

Eta :
  with ENCR    dependent      .31536
  with GPANUM  dependent      .10151
Statistic                     Value      ASE1
-----

```

```

Eta :
  with PURP    dependent      .24245
  with GPANUM  dependent      .12223
Statistic                     Value      ASE1
-----

```

```

Eta
With Sib Indepedet
With GPANUM  Dependent      .16

```

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FINC FATHERS INCOME

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
LOW LOW	1	82	13.5	13.5	13.5
MIDDLE LOW	2	134	22.0	22.0	35.5
HIGH LOW	3	98	16.1	16.1	51.6
LOW MIDDLE	4	55	9.0	9.0	60.6
MIDDLE MIDDLE	5	53	8.7	8.7	69.3
HIGH MIDDLE	6	36	5.9	5.9	75.2
LOW HIGH	7	46	7.6	7.6	82.8
MIDDLE HIGH	8	38	6.2	6.2	89.0
HIGH HIGH	9	67	11.0	11.0	100.0
	Total	609	100.0	100.0	

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FINC FATHERS INCOME

Mean	4.227	Std err	.107	Median	3.000
Mode	2.000	Std dev	2.639	Variance	6.965
Kurtosis	-1.029	S E Kurt	.198	Skewness	.549
S E Skew	.099	Range	8.000	Minimum	1.000
Maximum	9.000	Sum	2574.000		

Valid cases 609 Missing cases 0

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MINC MOTHERS INCOME

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
LOW LOW	1	268	44.0	44.0	44.0
MIDDLE LOW	2	152	25.0	25.0	69.0
HIGH LOW	3	34	5.6	5.6	74.5
LOW MIDDLE	4	21	3.4	3.4	78.0
MIDDLE MIDDLE	5	21	3.4	3.4	81.4
HIGH MIDDLE	6	17	2.8	2.8	84.2
LOW HIGH	7	28	4.6	4.6	88.8
MIDDLE HIGH	8	24	3.9	3.9	92.8
HIGH HIGH	9	44	7.2	7.2	100.0
	Total	609	100.0	100.0	

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MINC MOTHERS INCOME

Mean	2.872	Std err	.105	Median	2.000
Mode	1.000	Std dev	2.598	Variance	6.750
Kurtosis	.348	S E Kurt	.198	Skewness	1.339
S E Skew	.099	Range	8.000	Minimum	1.000
Maximum	9.000	Sum	1749.000		

Valid cases 609 Missing cases 0

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FOCC FATHERS OCCUPATION

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
LOW LOW	1	105	17.2	17.2	17.2
MIDDLE LOW	2	18	3.0	3.0	20.2
HIGH LOW	3	50	8.2	8.2	28.4
LOW MIDDLE	4	166	27.3	27.3	55.7
MIDDLE MIDDLE	5	45	7.4	7.4	63.1
HIGH MIDDLE	6	62	10.2	10.2	73.2
LOW HIGH	7	60	9.9	9.9	83.1
MIDDLE HIGH	8	76	12.5	12.5	95.6
HIGH HIGH	9	27	4.4	4.4	100.0
Total		609	100.0	100.0	

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FOCC FATHERS OCCUPATION

Mean	4.635	Std err	.098	Median	4.000
Mode	4.000	Std dev	2.415	Variance	5.831
Kurtosis	-1.001	S E Kurt	.198	Skewness	.053
S E Skew	.099	Range	8.000	Minimum	1.000
Maximum	9.000	Sum	2823.000		

Valid cases 609 Missing cases 0

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MOCC MOTHERS OCCUPATION

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
LOW LOW	1	95	15.6	15.6	15.6
MIDDLE LOW	2	345	56.7	56.7	72.2
HIGH LOW	3	55	9.0	9.0	81.3
LOW MIDDLE	4	13	2.1	2.1	83.4
MIDDLE MIDDLE	5	26	4.3	4.3	87.7
HIGH MIDDLE	6	19	3.1	3.1	90.8
LOW HIGH	7	13	2.1	2.1	92.9
MIDDLE HIGH	8	27	4.4	4.4	97.4
HIGH HIGH	9	16	2.6	2.6	100.0
	Total	609	100.0	100.0	

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MOCC MOTHERS OCCUPATION

Mean	2.787	Std err	.081	Median	2.000
Mode	2.000	Std dev	2.005	Variance	4.020
Kurtosis	2.296	S E Kurt	.198	Skewness	1.814
S E Skew	.099	Range	8.000	Minimum	1.000
Maximum	9.000	Sum	1697.000		

Valid cases 609 Missing cases 0

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FEDUC FATHERS EDUCATION

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
LOW LOW	1	38	6.2	6.2	6.2
MIDDLE LOW	2	53	8.7	8.7	14.9
HIGH LOW	3	55	9.0	9.0	24.0
LOW MIDDLE	4	78	12.8	12.8	36.8
MIDDLE MIDDLE	5	111	18.2	18.2	55.0
HIGH MIDDLE	6	52	8.5	8.5	63.5
LOW HIGH	7	168	27.6	27.6	91.1
MIDDLE HIGH	8	35	5.7	5.7	96.9
HIGH HIGH	9	19	3.1	3.1	100.0
	Total	609	100.0	100.0	

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FEDUC FATHERS EDUCATION

Mean	5.115	Std err	.086	Median	5.000
Mode	7.000	Std dev	2.114	Variance	4.470
Kurtosis	-.853	S E Kurt	.198	Skewness	-.308
S E Skew	.099	Range	8.000	Minimum	1.000
Maximum	9.000	Sum	3115.000		

Valid cases 609 Missing cases 0

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MEDUC MOTHERS EDUCATION

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
LOW LOW	1	113	18.6	18.6	18.6
MIDDLE LOW	2	67	11.0	11.0	29.6
HIGH LOW	3	44	7.2	7.2	36.8
LOW MIDDLE	4	94	15.4	15.4	52.2
MIDDLE MIDDLE	5	137	22.5	22.5	74.7
HIGH MIDDLE	6	71	11.7	11.7	86.4
LOW HIGH	7	53	8.7	8.7	95.1
MIDDLE HIGH	8	22	3.6	3.6	98.7
HIGH HIGH	9	8	1.3	1.3	100.0
	Total	609	100.0	100.0	

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MEDUC MOTHERS EDUCATION

Mean	4.080	Std err	.087	Median	4.000
Mode	5.000	Std dev	2.136	Variance	4.564
Kurtosis	-.919	S E Kurt	.198	Skewness	.041
S E Skew	.099	Range	8.000	Minimum	1.000
Maximum	9.000	Sum	2485.000		

Valid cases 609 Missing cases 0

FREQUENCIES /VARIABLES GPA SESAVG FINC MINC FOCC MOCC FEDUC MEDUC
/STATISTICS ALL.

***** Memory allows a total of 17873 Values, accumulated across all Variables.
There also may be up to 2234 Value Labels for each Variable.

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GPA GPA LEVEL

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
LOW LOW	1	45	7.4	7.4	7.4
MIDDLE LOW	2	130	21.3	21.3	28.7
HIGH LOW	3	172	28.2	28.2	57.0
LOW MIDDLE	4	105	17.2	17.2	74.2
MIDDLE MIDDLE	5	83	13.6	13.6	87.8
HIGH MIDDLE	6	38	6.2	6.2	94.1
LOW HIGH	7	22	3.6	3.6	97.7
MIDDLE HIGH	8	11	1.8	1.8	99.5
HIGH HIGH	9	3	.5	.5	100.0
	Total	609	100.0	100.0	

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GPA GPA LEVEL

Mean	3.535	Std err	.067	Median	3.000
Mode	3.000	Std dev	1.647	Variance	2.713
Kurtosis	.280	S E Kurt	.198	Skewness	.736
S E Skew	.099	Range	8.000	Minimum	1.000
Maximum	9.000	Sum	2153.000		

Valid cases 609 Missing cases 0

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SESAVG AVERAGE SES

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
LOW	1.00	299	49.1	49.1	49.1
MEDIUM	2.00	233	38.3	38.3	87.4
HIGH	3.00	77	12.6	12.6	100.0
	Total	609	100.0	100.0	

Mean	1.635	Std err	.028	Median	2.000
Mode	1.000	Std dev	.697	Variance	.485
Kurtosis	-.759	S E Kurt	.198	Skewness	.635
S E Skew	.099	Range	2.000	Minimum	1.000
Maximum	3.000	Sum	996.000		

Valid cases 609 Missing cases 0

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FREQUENCIES /VARIABLES GENDER SOCLSS SIB REL MORIGIN ENCR PURP /STATISTICS ALL.

***** Memory allows a total of 17873 Values, accumulated across all Variables.
 There also may be up to 2234 Value Labels for each Variable.

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GENDER GENDER

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
MALE	1	347	57.0	57.0	57.0
FEMALE	2	262	43.0	43.0	100.0
	Total	609	100.0	100.0	
Mean	1.430	Std err	.020	Median	1.000
Mode	1.000	Std dev	.496	Variance	.246
Kurtosis	-1.926	S E Kurt	.198	Skewness	.283
S E Skew	.099	Range	1.000	Minimum	1.000
Maximum	2.000	Sum	871.000		

Valid cases 609 Missing cases 0

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SOCLSS SOCIAL CLASS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
FARMER	1	197	32.3	32.3	32.3
BEDQUIN	2	104	17.1	17.1	49.4
URBANITE	3	308	50.6	50.6	100.0
	Total	609	100.0	100.0	
Mean	2.182	Std err	.036	Median	3.000
Mode	3.000	Std dev	.893	Variance	.797
Kurtosis	-1.649	S E Kurt	.198	Skewness	-.366
S E Skew	.099	Range	2.000	Minimum	1.000
Maximum	3.000	Sum	1329.000		

Valid cases 609 Missing cases 0

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SIB SIBLINGS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
8 OR MORE	1	213	35.0	35.0	35.0
6 - 7	2	146	24.0	24.0	58.9
3 - 5	3	174	28.6	28.6	87.5
2 OR LESS	4	76	12.5	12.5	100.0
	Total	609	100.0	100.0	
Mean	2.186	Std err	.043	Median	2.000
Mode	1.000	Std dev	1.050	Variance	1.102
Kurtosis	-1.208	S E Kurt	.198	Skewness	.274
S E Skew	.099	Range	3.000	Minimum	1.000
Maximum	4.000	Sum	1331.000		

Valid cases 609 Missing cases 0

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REL RELIGION

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
STRONGLY RELIGIOUS	1	87	14.3	14.3	14.3
RELIGIOUS	2	249	40.9	40.9	55.2
MODERATELY RELIGIOUS	3	232	38.1	38.1	93.3
NOT RELIGIOUS AT ALL	4	41	6.7	6.7	100.0
	Total	609	100.0	100.0	
Mean	2.373	Std err	.033	Median	2.000
Mode	2.000	Std dev	.809	Variance	.655
Kurtosis	-.550	S E Kurt	.198	Skewness	-.013
S E Skew	.099	Range	3.000	Minimum	1.000
Maximum	4.000	Sum	1445.000		

Valid cases 609 Missing cases 0

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MORIGIN MOTHERS ORIGIN

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
JORDANIAN-SAME TRIBE	1	226	37.1	37.1	37.1
JORDANIAN-OTH TRIBE	2	217	35.6	35.6	72.7
OTHER ARAB COUNTRY	3	95	15.6	15.6	88.3
OUTSIDE ARAB WORLD	4	70	11.5	11.5	99.8
	9	1	.2	.2	100.0
	Total	609	100.0	100.0	
Mean	2.026	Std err	.042	Median	2.000
Mode	1.000	Std dev	1.034	Variance	1.068
Kurtosis	2.462	S E Kurt	.198	Skewness	1.077
S E Skew	.099	Range	8.000	Minimum	1.000
Maximum	9.000	Sum	1234.000		

Valid cases 609 Missing cases 0

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ENCR ENCOURAGEMENT

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
NO INFLUENCE	1	20	3.3	3.3	3.3
MINIMUM INFLUENCE	2	27	4.4	4.4	7.7
MODERATE INFLUENCE	3	130	21.3	21.3	29.1
STRONG INFLUENCE	4	432	70.9	70.9	100.0
	Total	609	100.0	100.0	
Mean	3.599	Std err	.029	Median	4.000
Mode	4.000	Std dev	.726	Variance	.527
Kurtosis	3.677	S E Kurt	.198	Skewness	-1.994
S E Skew	.099	Range	3.000	Minimum	1.000
Maximum	4.000	Sum	2192.000		

Valid cases 609 Missing cases 0

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PURP PURPOSE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
GET A JOB & SURVIVE	1	121	19.9	19.9	19.9
DO BETTER THAN M & F	2	275	45.2	45.2	65.0
FOR PARENTS PRIDE	3	84	13.8	13.8	78.8
DO AS WELL AS M & F	4	129	21.2	21.2	100.0
	Total	609	100.0	100.0	
Mean	2.363	Std err	.042	Median	2.000
Mode	2.000	Std dev	1.027	Variance	1.054
Kurtosis	-.977	S E Kurt	.198	Skewness	.409
S E Skew	.099	Range	3.000	Minimum	1.000
Maximum	4.000	Sum	1439.000		

Valid cases 609 Missing cases 0

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This procedure was completed at 12:51:16

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ONEWAY /VARIABLES GPANUM BY SIB (1,4) /ranges tukey.

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----- O N E W A Y -----

Variable GPANUM NUMERICAL GPA
 By Variable SIB SIBLINGS

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	3	1118.2959	372.7653	5.5410	.0009
Within Groups	605	40700.9159	67.2742		
Total	608	41819.2118			

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----- O N E W A Y -----

Variable GPANUM NUMERICAL GPA
 By Variable SIB SIBLINGS

Multiple Range Test

Tukey-HSD Procedure
 Ranges for the .050 level -

3.65 3.65 3.65

The ranges above are table ranges.
 The value actually compared with Mean(J)-Mean(I) is..
 $5.7998 * \text{Range} * \text{Sqrt}(1/N(I) + 1/N(J))$

(*) Denotes pairs of groups significantly different at the .050 level

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----- O N E W A Y -----

Variable GPANUM NUMERICAL GPA
(Continued)

		G G G G
		r r r r
		P P P P
Mean	Group	4 3 2 1
69.0526	Grp 4	
69.5287	Grp 3	
71.4932	Grp 2	
72.4038	Grp 1	* *

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This procedure was completed at 15:28:36

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ONEWAY /VARIABLES GPANUM BY rel (1,4) /ranges tukey.

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----- O N E W A Y -----

Variable By Variable	GPANUM REL	NUMERICAL GPA RELIGION	Analysis of Variance			
Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.	
Between Groups	3	3998.0202	1332.6734	21.3179	.0000	
Within Groups	605	37821.1916	62.5144			
Total	608	41819.2118				

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----- O N E W A Y -----

Variable By Variable	GPANUM REL	NUMERICAL GPA RELIGION
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Multiple Range Test

Tukey-HSD Procedure
 Ranges for the .050 level -

3.65 3.65 3.65

The ranges above are table ranges.
 The value actually compared with Mean(J)-Mean(I) is..
 $5.5908 * \text{Range} * \text{Sqrt}(1/N(I) + 1/N(J))$

(*) Denotes pairs of groups significantly different at the .050 level

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----- O N E W A Y -----

Variable GPANUM NUMERICAL GPA
 (Continued)

		G G G G
		F F F F
		P P P P
Mean	Group	4 3 2 1
67.9756	Grp 4	
69.3190	Grp 3	
70.8916	Grp 2	
76.8391	Grp 1	* * *

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This procedure was completed at 15:29:52

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ONEWAY /VARIABLES GPANUM BY MORIGIN (1,4) /ranges tukey.

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----- O N E W A Y -----

Variable GPANUM NUMERICAL GPA
 By Variable MORIGIN MOTHERS ORIGIN

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	3	225.6823	75.2274	1.0924	.3517
Within Groups	604	41592.6334	68.8620		
Total	607	41818.3158			

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----- O N E W A Y -----

Variable GPANUM NUMERICAL GPA
 By Variable MORIGIN MOTHERS ORIGIN

Multiple Range Test

Tukey-HSD Procedure
 Ranges for the .050 level -

3.65 3.65 3.65

The ranges above are table ranges.
 The value actually compared with Mean(J)-Mean(I) is..
 $5.8678 * \text{Range} * \text{Sqrt}(1/N(I) + 1/N(J))$

No two groups are significantly different at the .050 level

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ONEWAY /VARIABLES GPANUM BY ENCR (1,4) /ranges tukey.

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----- O N E W A Y -----

Variable GPANUM NUMERICAL GPA
 By Variable ENCR ENCOURAGEMENT

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	3	430.8813	143.6271	2.0995	.0991
Within Groups	605	41388.3305	68.4105		
Total	608	41819.2118			

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----- O N E W A Y -----

Variable GPANUM NUMERICAL GPA
 By Variable ENCR ENCOURAGEMENT

Multiple Range Test

Tukey-HSD Procedure
 Ranges for the .050 level -

3.65 3.65 3.65

The ranges above are table ranges.
 The value actually compared with Mean(J)-Mean(I) is..
 $5.8485 * \text{Range} * \text{Sqrt}(1/N(I) + 1/N(J))$

No two groups are significantly different at the .050 level

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This procedure was completed at 15:35:01

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ONEWAY /VARIABLES GPANUM BY PURP (1,4) /ranges tukey.

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----- O N E W A Y -----

Variable GPANUM NUMERICAL GPA
 By Variable PURP PURPOSE

Analysis of Variance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	3	624.7655	208.2552	3.0585	.0278
Within Groups	605	41194.4463	68.0900		
Total	608	41819.2118			

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----- O N E W A Y -----

Variable GPANUM NUMERICAL GPA
 By Variable PURP PURPOSE

Multiple Range Test

Tukey-HSD Procedure
 Ranges for the .050 level -

3.65 3.65 3.65

The ranges above are table ranges.
 The value actually compared with Mean(J)-Mean(I) is..
 $5.8348 * \text{Range} * \text{Sqrt}(1/N(I) + 1/N(J))$

(*) Denotes pairs of groups significantly different at the .050 level

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