

The Circumscription Process of Career Aspirations in South Korean Adolescents

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The circumscription process developed by Gottfredson (1981, 1996) has shown much promise in understanding the development of the vocational self-concept in U.S. samples. Little is known about the application of this process to cross national samples. This investigation studied the circumscription process with a large sample of 733 South Korean students ranging from elementary school through college (192 South Korean 5th- 6th grades from two different elementary schools, 181 South Korean 8th grades from two different junior high schools, 192 South Korean 10th-12th grades from two different high schools, and 208 from three different universities). A researcher-constructed instrument was developed which consisted of demographic information and 71 occupation names listed under each question. Seventy-one occupation titles were rated in desirability, masculinity vs. femininity, and prestige with 5-likert scales. The results are as follows: 1) boys and girls share the same perceptions of sex-types and prestige levels in all age groups, 2) occupational maps of the 71 occupations were different across the age groups, 3) South Korean boys pursue traditionally male dominant occupations and girls pursue traditionally female dominant occupations, 4) on the circumscription process, South Korean adolescents narrow their alternatives by high school. The gap between junior high and high school is the largest and subsequently when they enter the university, they widen their alternative zones once again. While much of Gottfredson's model was replicated with this cross national sample, the ages at which different developmental tasks occur appear to be at different times with this sample. This investigation contributes to the growing literature examining whether the career theories are universal or culturally specific.

Key words: career development, career theory, career aspiration, circumscription, Gottfredson, career counseling

How we think about our place in the vocational world has long been the subject of theoretical and empirical work. The vocational self-concept, or how one sees ones' vocational identity is a critical aspect of career decision-making. Prominent developmental theorists have discussed how the

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vocational self-concept develops over various life stages. Researchers with a developmental perspective regard the development of a vocational self-concept as the basis of understanding the compromise process itself (e.g., Gati, 1993; Ginzberg, Ginsburg, Axelrad, & Herma, 1951; Gottfredson, 1981, 1996; Super, 1953, 1984). In essence, through developmental stages, various aspects of occupations are internalized and differentiated as a part of the occupational self-concept

This developmental context provided the theoretical background for Gottfredson's (1981, 1996) investigations on the intricacies of vocational self-concept development. People also hold images of occupations (often called occupational stereotypes), including the personalities of people in those

occupations, the work they do, the lives they lead, the rewards and conditions of the work, and the appropriateness of work for different types of people (Gottfredson, 2003). These common images are organized into a meaningful, shared cognitive map of occupations and this map consists of a few major dimensions, masculinity/femininity, occupational prestige level, and field of work (Holland interest codes). Even though people may have detailed images of some occupations, they tend to judge the similarities and differences among occupations along and within these dimensions. These distinctions can be represented in a two-dimensional map (sex type by prestige level). Jobs in different fields of work tend to cluster in different parts of this shared cognitive map. This clustering can be seen more clearly with a large sample of common occupations being classified by Holland type (Gottfredson, 2003).

Gottfredson (1981) suggested that the development of the vocational self-concept is associated with a process of examining and eliminating occupational alternatives, which she called circumscription. In essence, individuals progressively eliminate what they perceive as unacceptable alternatives to create what Gottfredson terms their social space or their zone of acceptable alternatives. She segmented this development process into four stages. The first stage of circumscription is orientation to size and power (ages 3-5 years). In this stage children create the simplest kinds of classifications for what they see in their environment (e.g., the difference between big people and little people). The next stage is orientation to sex role (ages 6-8 years), when gender concepts are consolidated and children very clearly understand what occupation is perceived to be appropriate for what sex. Vocational aspirations at this stage reflect a concern with doing what is appropriate for one's sex. In the third stage of orientation to social valuation (ages 9-13 years) the more abstract elements of the self-concept such as social class and ability become important determinants of social behavior and expectation. The last stage is an orientation of the internal, unique self (around 14 years) or the identity crisis of adolescents where they struggle to understand what their interests, abilities and values really are. In the fourth stage, adolescents consider their interests, capacities, and values as important criteria for further narrowing their choices from what has often become a very narrow group. Thus, many career options have been eliminated through these developmental stages due to sex, prestige, or interest appropriateness. The zone of acceptable alternatives (career aspirations) becomes smaller with age.

Little empirical research into Gottfredson's career development theory with the exception of the work of Leung

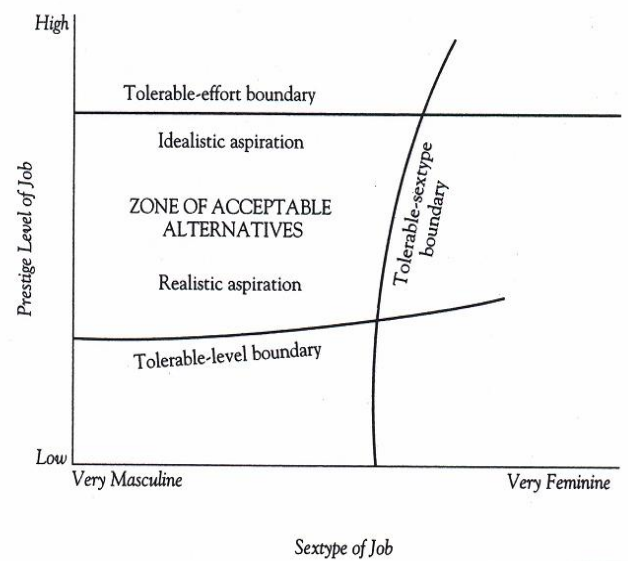


Figure 1. Circumscription of aspirations according to perceptions of job-self compatibility (This example represents a hypothetical middle-class boy of average intelligence, Gottfredson(2003), p.92)

(1993) has been conducted with Asian samples. Leung studied Chinese college students with retrospective self-reporting and found that there are significant changes in the acceptable levels of sex type and prestige among Asian Americans in the pre-college adolescent years. While the career developmental theory of Gottfredson (1981, 1996, 2003) is a promising means to aid in understanding South Korean adolescents' presenting problems in career counseling, it is critically important to validate this theory with a large South Korean sample before the theory can be adopted and used to aid in an individual's career development. Thus, the current large-scale study was developed to investigate the circumscription process of the career aspirations of South Korean students developmentally from elementary to college levels. In South Korea, students do not have career counseling within their elementary and secondary schooling in any formal manner and thus have little opportunity to explore their own careers until they enter college. Secondary students especially put all their efforts into pursuing entrance into the most prestigious college and majors possible rather than exploring interests as would be more typical in U.S. samples. Subsequently, the career development process of most adolescents might be postponed until they are in college in South Korea (Lim, Jung, & Sang, 2001). Thus, it seemed critical in the current investigation that we include four different age groups (elementary, junior-high, high school, and college) to

investigate the circumscription process of career aspiration instead of only the three age groups that Gottfredson's theory utilizes.

To investigate the circumscription process of career aspiration through age groups, the generality of the cognitive map of occupations (the perceptions of an occupation's sex type and prestige level) should be examined with both sexes and all age groups. The generality of cognitive map of occupations has been investigated empirically in the U. S. (e.g., Gottfredson & Lapan, 1997; Lapan & Jingeleski, 1992; Lee & Kelly, 2002). Studies undertaken in the U.S. generally support Gottfredson's cognitive map of occupation with U.S. samples. It seems critical to note that, the cognitive map of occupations studied in the United States reflects the labor market and people from that specific western country, and different countries may have different cognitive maps of occupations. Nevertheless, Hwang, Kim and Ryu (2003a) and Lim (2000) demonstrated the similarity of the South Korean occupational map and the U.S. occupational map. However, whether this influences how individuals in South Korea think about their circumscription processes has not been tested.

Empirical studies on the circumscription process of career aspiration have been conducted mostly in the U. S. (e.g., Helwig, 2001; Henderson, Hesketh, & Tuffin, 1988). Whether Gottfredson's process of circumscription can be generalized to the case of South Korean samples remains untested.

Specific research questions are: (a) Will there be a sex difference in the perceptions of the occupation's sex type and prestige level through elementary, junior high, high school and college students? (b) Will there be changes in the perceptions of occupations' sex types and prestige levels through elementary, junior high, high school and college students for both sexes in a direction more similar to the actual occupational sex types and prestige levels (occupational map)? (c) Are there differences in career aspirations in both sexes of elementary, junior high, high school and college students?, and (d) What will the circumscription process be like in terms of sex type and prestige from elementary, junior high, high school and college students of both sexes?

Method

Participants

A large (n=773) sample of South Korean students at various developmental levels was collected for this study. Specifically, the sample consisted of 192 South Korean 5th-

6th grades from two different elementary schools (group 1), 181 South Korean 8th grades from two different junior high schools (group 2), 192 South Korean 10th-12th grades from two different high schools (group 3), and 208 from three different South Korean universities (group 4). All participants are South Korean citizens and reside in a large urban area of South Korea. The overall sex ratio of is fifty-two percent (n=402) boys and forty-eight percent (n=371) girls.

Instruments

As is the typical procedure in circumscription studies (e.g., Gottfredson & Lapan, 1997; Lapan & Jingeleski, 1992), a researcher-constructed instrument was developed which consisted of demographic information, desired occupations, sex-type of occupations, and prestige level of occupations. The instrument had the same 71 occupations listed under each question. Seventy-one occupation titles such as librarian, chemist, social worker, mechanic, police officer, screenplay writer were derived from the Vocational Interest Test for Youth which was developed and validated by the South Korean Central Employment Information Office (2002). The short descriptions for all 71 occupations were also provided following the titles. Again similar to the usual protocol in studies of this type, the 71 occupation titles were rated in desirability, masculinity vs. femininity, and prestige with 5-likert scales. Students rated each of the occupations according to the following questions, "How desirable is it for you to be in this occupation in the future?", "Which of the following occupations do you consider a male occupation?", "How prestigious do you see the following occupations to be?" As a pilot test of the validity and clarity of the items, before the administration of this instrument to participants, we interviewed 30 fifth grade students to determine whether they understood the 71 occupations' titles and their short descriptions.

Procedures

Data from this investigation was collected from elementary schools, high school and colleges in a large urban area of South Korea. Teachers in the classrooms were asked to collect data from their students. Students were told this study would help us to learn more about the career decision making of South Korean students. The reading level of the instrument was at an elementary level so that all ages of individuals would be able to complete the same questionnaire. The analyses for each research question are as follows.

The first question was “Will there be a sex difference in the perceptions of an occupation’s sex type and prestige level through elementary, junior high, high school and college students?” Correlations were computed in order to estimate agreement between boys and girls (in each age group) for the sex type and prestige level ratings of the 71 occupations.

The second question was “Will there be changes in the perceptions of occupations’ sex types and prestige levels through elementary, junior high, high school and college students for both sexes?” To examine the shared cognitive occupational maps of South Korean students, the masculinity and prestige of each occupation were calculated. The students’ responses to sex-type of the 71 occupations were summed and the responses to prestige level of the 71 occupations were summed for each occupation. Subsequently, the 71 occupations were clustered into six work fields according to the Holland codes using the Vocational Interest Test for Youth (South Korean Central Employment Information Office, 2002). Subsequently, the two-dimensional occupational cognitive map was drawn with sex-type (x-axis) and prestige level (y-axis). This map was compared with the occupational cognitive map that Gottfredson (2003) suggested and the occupational cognitive map that was drawn from the South Korean Job Map which was developed and validated by Hwang, Kim, and Ryu (2003b) based on the national survey of the South Korean Ministry of Labor in 2001. The similarity of the occupational maps shown on the figures, and also the rankings of the masculinity and prestige level of six areas on the maps were compared in both girls and boys of all age groups.

The third question was “Are there differences in career aspirations in both sexes of elementary, junior high, high school and college students?” To examine the first circumscription process in terms of sex type, sex differences in career aspirations on occupational areas based on Holland’s six codes were analyzed using ANOVA with the different age groups. For this analysis, the responses to the question: “How desirable is it for you to be in this occupation in the future?” for each of the 71 occupation were summed. In addition, the 71 occupations were classified into Holland code by using the Vocational Interest Test for Youth (South Korean Central Employment Information Office, 2002), and the means of career aspirations of six work areas were compared between girls and boys.

The fourth question was “What will the circumscription process be like in terms of sex type and prestige from elementary, junior high, high school and college students of both sexes?” In a manner consistent with previous research (Hwang, Kim & Ryu, 2003a; 2003b), the aspirations (the zone

of acceptable alternatives) of the four age groups were calculated by subtracting the minimum level from the maximum level of a desired occupations in term of sex type and prestige. The level of occupations regarding sex type and prestige was drawn from the South Korean Job Map which was developed and validated by Hwang, Kim, and Ryu (2003b) based on the national survey of the South Korean Ministry of Labor in 2001. Subsequently, the square of the difference of sex type and the difference of prestige was calculated. The circumscriptions of the four different age groups were compared and interpreted according to the theoretical perspective of developmental change.

Results

The results of this study will be presented in the order of the four research questions. Firstly, the agreement between boys and girls on the perceived sex-type and prestige levels of the 71 occupations in each age group are shown on Table 1. Statistics in each table were generated by correlating the mean response of boys with the mean response of girls on each of the 71 occupations.

Secondly, the occupational maps of the 71 occupations were different across the age groups. The occupational map of South Korean 5th-6th grades (group 1) indicated that they may have acquired the concept of occupational sex-type (the degree of masculinity of each occupation). However, they seemed to be still in the process of building the concept of occupational prestige level. The occupational map of junior-high (group 2), high school (group 3), and university (group 4) indicated that they might have acquired the concept of both sex type and occupational prestige level. The perceived occupational prestige levels developed from Holland occupational types were as follows: S (most prestigious) > I >

Table 1. *Agreements of Sex Type and Prestige Levels of 71 Occupations*

	agreement between boys and girls	
	sex-type	prestige
Elementary	0.96**	0.90**
Junior-high	0.96**	0.86**
high	0.94**	0.87**
college	0.96**	0.96**

** $p < .01$

Figure 2

Figure 2

Figure 2. The occupational map of South Korean adolescents

A > R > C > E (least prestigious) (elementary) to I > S > R > E > A > C (junior-high), to I > S > A > E > R > C (high school), and to I > S > A > E > R > C (university). All of these groups were compared with the perceived occupational prestige levels suggested by Gottfredson (I > S > A > E > C > R).

Thirdly, Table 2 depicts the career aspirations of different ages and sexes. The occupational aspirations of girls were higher than boys' aspirations for all occupations in group 1 (elementary children). This finding has never been reported with a South Korean sample before and will need further empirical study to determine if future studies find similar results. The sex differences of career aspiration depended on the occupational areas in group 2, group 3 and group 4. Junior

high boys have higher career aspiration than girls in realistic (R) and investigative (I) areas while junior high girls have higher career aspirations than boys in artistic (A) and social (S) areas. These findings are consistent with the previous findings of sex differences in South Korean and U.S. samples. In the high school sample only, girls exhibited higher aspirations than boys in artistic (A) and social (S) areas. Conversely, male college students have higher career aspirations than females in realistic (R) and investigative (I) areas while females have higher career aspirations than males in social (S) areas. As age increases, males have higher career aspirations in male dominant job areas, and females have higher career aspirations in female dominant job area.

Table 2. Gender differences of career aspirations

Elementary			Junior-high			High			College		
Holland Code	Boys	Girls	Holland Code	Boys	Girls	Holland Code	Boys	Girls	Holland Code	Boys	Girls
R **	2.08	2.35	R *	2.29	2.08	R *	2.29	2.08	R	1.91	1.80
I	2.18	2.36	I *	2.66	2.28	I *	2.66	2.28	I	2.30	2.39
A **	2.16	2.48	A **	2.25	2.74	A **	2.25	2.74	A **	2.17	2.74
S *	2.21	2.43	S **	2.31	2.80	S **	2.31	2.80	S **	2.27	2.85
E *	2.07	2.22	E	2.59	2.67	E	2.59	2.67	E	2.43	2.64
C **	2.00	2.20	C	2.27	2.33	C	2.27	2.33	C	2.21	2.33

* $p < .05$. ** $p < .01$

Lastly, the aspirations of the four age groups were calculated by subtracting the minimum level from maximum level of desired occupations in term of sex type and prestige (Table 3). The square of the difference of sex type and the difference of prestige was then calculated (Table 4). The aspirations of the four age groups are different across groups. Aspirations generally decrease until high school and then increase after entering college. The aspiration gap between the

elementary and junior high school groups is wider than the aspiration gap between the high school and university groups.

Discussion

These findings lend support to the generality of Gottfredson's theory of career circumscription and compromise in a cross-national sample. Such research is important to our understanding of which of our career constructs are universal and which are more culturally specific. At the same time, this is very much a beginning step in understanding the whole developmental process of South Korean adolescents and this study will need further extension and replication with other South Korean samples. In South Korea, the cultural validity of career development theories was questioned recently (e.g., Lim, 2000; Lim & Jang, 2002; Seo & Seong, 2001) with increasing career counseling services in schools, companies, and governmental institutes. The results from this investigation provide practical

Table 3. The square of the difference of sex type and the difference of prestige

	the square of the aspiration		
	<i>n</i>	<i>M</i>	<i>SD</i>
elementary	187	7.48	5.03
junior-high	181	7.39	5.58
high school	186	6.39	5.56
university	204	6.74	4.80

Table 4. The difference of the square of the difference of sex type and the difference of prestige between the group of elementary-junior high and the group of high school-university

	Elementary - junior high			high school - university			t test
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>t</i>
square	370	7.43	5.30	290	6.64	5.02	1.95
Difference of prestige	370	2.61	1.19	290	2.31	1.17	3.18**
Difference of sex type	372	2.52	1.36	291	2.57	1.30	.53

* $p < .05$, ** $p < .01$

implications for career counseling and interventions.

Boys and girls appear to share the same perceptions of sex-types and prestige levels of the 71 occupations in all the age groups. The correlations between the two sex groups ranged from .86 to .96. These findings support Gottfredson's (1981) position that both sexes share a common understanding in their perceptions of the sex-types and the prestige levels of careers. The agreement levels ($r=.86\sim.90$) of prestige levels are lower than those of sex-types ($r=.94\sim.96$) till high school. This is similar to the data of Lapan and Jingeleski (1992) ($r=.91$ vs. $r=.96$) which were collected from junior high samples in the U.S. The correlation level of .86 is still high and we can assume that there might be no sex differences in the prestige level perceptions. Therefore, we conclude that the perceptions of sex-types and the prestige levels of occupations may not differ between boys and girls. Nevertheless, there are some possibilities of sex differences in terms of perceptions of occupational prestige level. The cognitive maps in the figures are indicative of sex differences in elementary, junior-high, and high school students.

According to Gottfredson (1981), people in the same society share common images of occupations and this cognition begins in the early stages of life (9-13 year olds). The generality of this cognitive map of occupations has been supported by empirical studies in the U.S. with junior-high, high, and college students (e.g., Gottfredson & Lapan, 1997; Lapan & Jingeleski, 1992; Lee & Kelly, 2002). In this study with South Korean students, the cognitive maps of occupations change across age groups increasingly reflect this reality, especially in terms of the construct of prestige level. In terms of sex-type, the perceptions of all age groups were the same and also consistent with Gottfredson's map. The occupational maps of high school and college students are almost the same and they are very similar to the occupational map of Gottfredson. These findings suggest that Gottfredson's theory of career development holds promise for understanding South Korean adolescents' career development in terms of developmental sequences, however, the age when South Korean adolescents go through these sequences may be postponed due to unique cultural variables and thus be different from that experienced by the U.S. samples. The reason for this cultural difference may be attributed to the lack of career education programs in the South Korean school system. In South Korea, school guidance programs are delivered by informal curricula and career developmental programs are virtually the same in both elementary and secondary schools. Most students learn about the world of work by observing their parents, teachers, or the media. For

example, one recent research study (Kim, 2004) suggested that the main influences on South Korean adolescents' occupational dreams were teachers and TV programs. The reason that elementary school boys and girls perceived social occupations as the highest occupation could be their tremendous respect for teachers and also their limited exposure to other diverse occupations. The finding that students tend to widen their career choices once in college may suggest that they have more exposure to different careers during their time at university and in the metropolitan areas where universities are located.

The findings of sex differences in the career aspirations of South Korean students support Gottfredson's proposition that boys pursue traditionally male dominant occupations such as Realistic types or Investigative types and girls pursue traditionally female dominant occupations such as Social types or Artistic types. However, the timing of the internalization of sex-types of occupations may be different from Gottfredson's theory. She suggested children age 6-8 have begun to understand and apply the concept of sex role. In this South Korean sample, sex differences in career aspirations follow the traditional sex role stereotypes after junior high. In elementary children, the occupational aspirations of girls were higher than those of boys for all occupational areas. Most girls arrive at puberty earlier than boys and also precede boys in other developmental activities. In career development, girls may be ahead of the boys and girls may aspire to higher occupations in the future.

To investigate the circumscription process, we calculated the zone of acceptable alternatives. The squares of the range of sex-types and the range of prestige levels each student aspires to were defined operationally as the zone of acceptable alternatives of each student. The decrease in the squares that occurs in the developmental process provides support for the circumscription process in this cross-national sample. The students progressively eliminate occupations as incompatible with their developing self-concepts. Gottfredson (1981) suggested that by age 13 the zone of acceptable alternatives narrows. However, we found that South Korean adolescents appear to narrow their alternatives by high school. The gap between junior high and high school is the largest. Following this, when they enter university, they widen their alternative zones once again. South Korean high school students may have narrowed their options because of the cultural stress put on them to compete for college entrance to the most prestigious schools and majors. Many South Korean high school students want to enter more prestigious universities and study more prestigious majors. They suffer from high

levels of academic competition. The South Korea government has been concerned about this problem for many years because this high level of competition seems to be unhealthy for adolescents' development (South Korea Ministry of Education and Human Resources Development, 2000). The implications of the findings of this study are numerous. Foremost is the need to intervene early with career information before students have already ruled out a host of occupations. In addition it is important to understand that South Korean children may go through this compromise process at different times than US samples and thus interventions that are designed to aid in their career development should take this timing issue into account.

In terms of limitations, while this is the first large-scale developmental study of Gottfredson's model in South Korea, it needs to be replicated with other South Korean samples. Whether these findings are consistent with other Asian samples needs to be empirically explored. In addition, since these developmental changes were found using cross sectional data not longitudinal data, we have to be cautious to accept the result. This investigation used self-reported data and as such we do not know how much it will generalize to actual behaviors.

In conclusion, the large South Korean adolescent sample in this investigation followed almost the same process of circumscription described by Gottfredson and others in U.S. adolescent samples. In this sense, it appears a promising model for use in South Korea. Differences appeared in the ages that each developmental task was undertaken which may be due to cultural variables of the South Korean educational systems such as the underdeveloped school guidance curriculums, lack of work experience, or the high level of academic competition. If researchers and counselors understand these developmental processes, they will be better able to assist South Korean adolescents with their career development process. From a research and theory generation perspective, this investigation also offers data as to the cross-national validity of the circumscription model within a large South Korean sample.

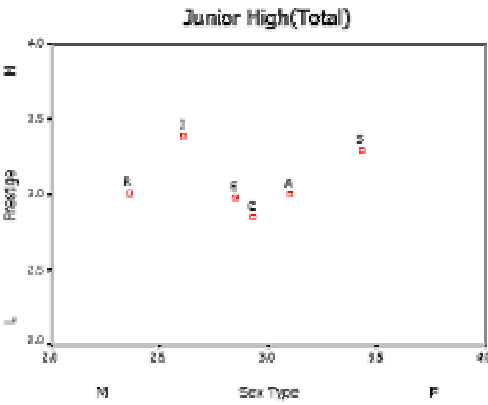
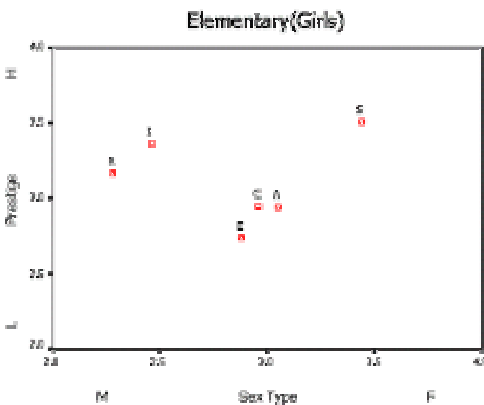
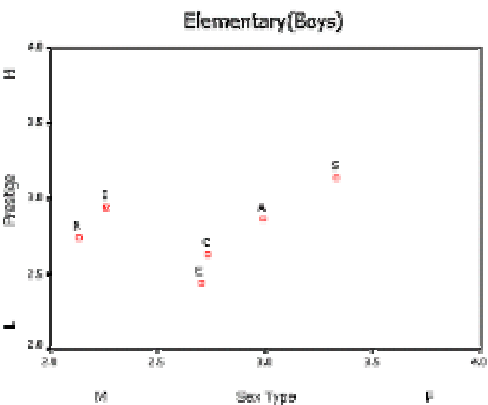
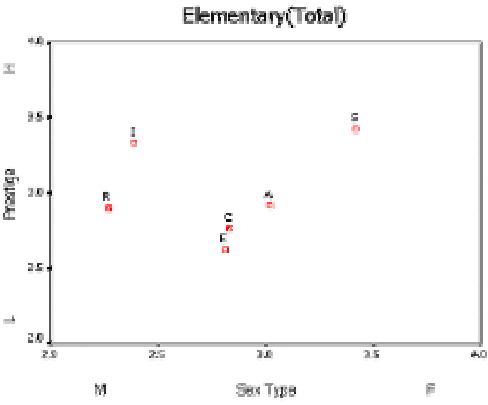
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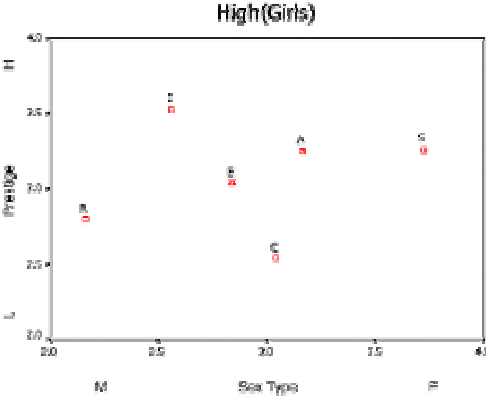
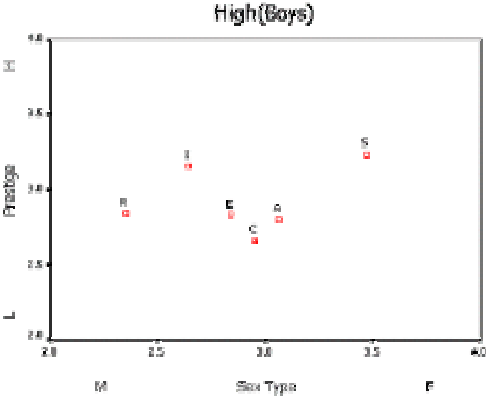
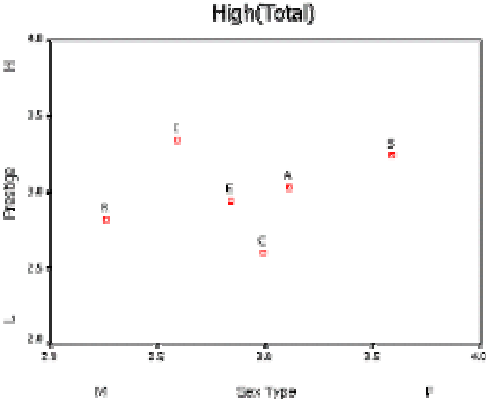
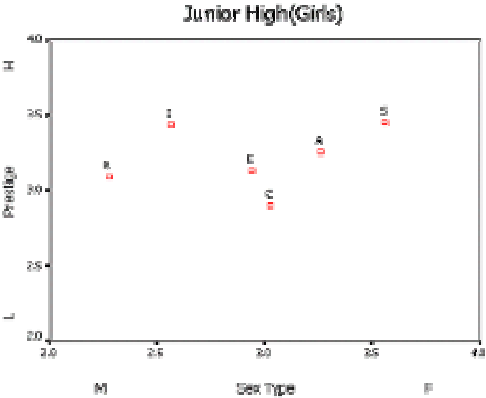
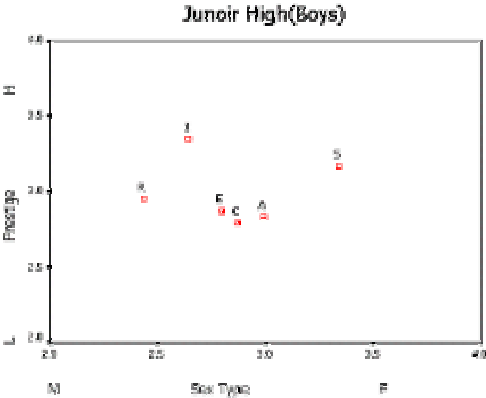
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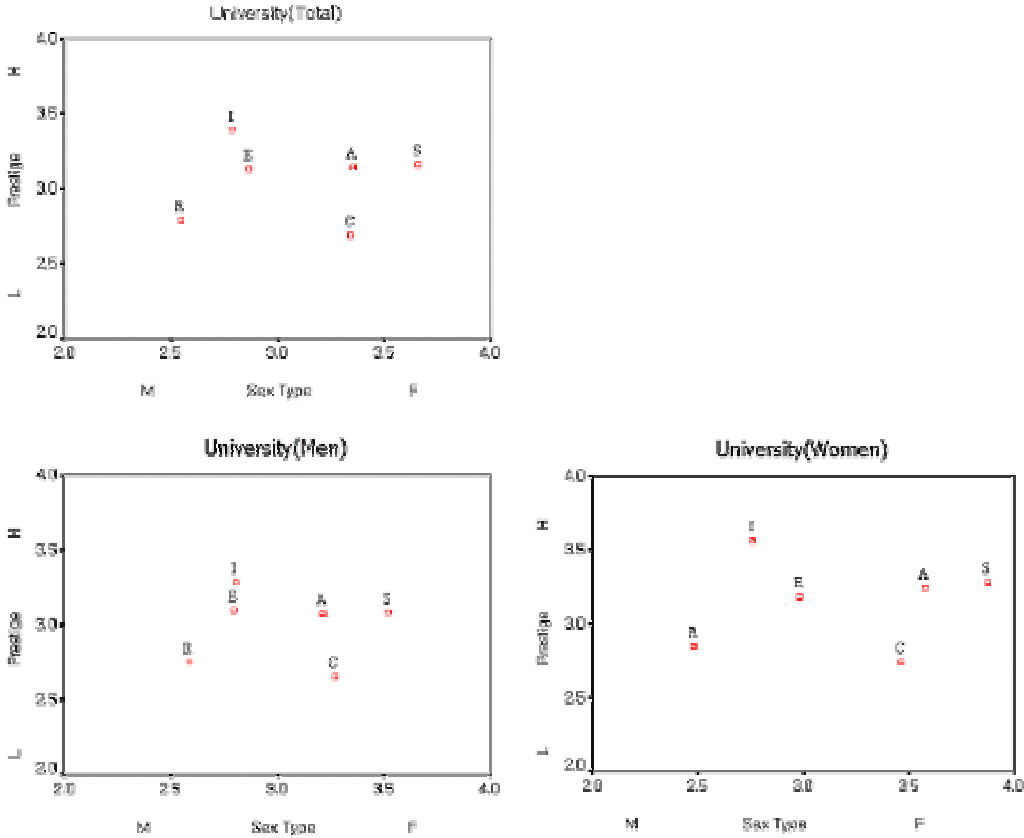


Figure 2. The occupational map of South Korean adolescents