Occupational Matching Of Junior College Graduates In Korean Labor Market

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ABSTRACT

This study aims to understand the supply and demand of Korea's junior college graduates in the labor market and their job transfer pattern, thereby analyzing the behavior of young generation's participation in the labor market. To this end, the study conducted an in-depth analysis into existing literatures and recent statistics. It also conducted surveys and held direct/telephone interviews with junior college graduates and corporate human resources managers who recruited these graduates and analyzed their job performances. The research includes junior college graduates' economic activities, field of major, correlation between major and certificates obtained, correlation between work and major, terms of job-search and how much vocational education and training helped their transition from school to workplace and related job performance, and etc. Our survey shows that most junior college graduates are engaged in income-generating business.

INTRODUCTION

Vocational education and training, which teach and improve individual's knowledge, technical skills and work behaviors, have tremendous impact on worker's activities in the labor market. Vocational education and training at education and training institutes¹ account for considerable amount of time and investment not only for the learners and trainees but also for the entire nation. Therefore, analyzing the current labor market and work performances of trainees who graduated from these institutions is critical in enhancing the efficacy and effectiveness of vocational education and training. It is also important because if there is little link between these centers, trainees and the real job market, then, it will generate inefficiency in the distribution of human resources for the entire nation. This will also create social problems because workers will find it difficult to enter the labor market. Vocational high-schools, junior colleges, and higher job education and training institutions are particularly one of the pillars that play an important role in developing the nation's economy, and they nurture people with expertise in theories and technologies which are needed on-site.

This study aims to understand the supply and demand of Korea junior college graduates in the labor market² and their job transfers by analyzing the behavior of young generation's participation in the labor market. Chapter 2 is a theoretical studies to examine the junior college graduates' recent entry into the labor market. Chapter 3 investigates the educational changes in junior colleges and employment of junior college graduates, in order to understand their recent entry into the labor market.

Chapter 4 includes the survey results of the junior college graduates' entry into the labor market and their work performance. In all, 500 junior college graduates were analyzed. The sample was acquired by tracking the graduates, with the help of 33 junior colleges from around the country which provided personal backgrounds of 3,621 graduates. This study was analyzed based on the results of the survey on graduates' entry into the labor market and

¹ "Vocational education and training institutes" here refers to not only schools but also institutes that provide vocational education and training curriculum of more than 1 year. To be more specific, "Vocational education and training institutes" included vocational high schools, technical colleges, professional vocational schools that provide curricula of more than 1 year, and functional colleges that diplomas.

² Hoemer & Wehrley (1995) defined that school-to-work transition is related with the whole process from primary education, when one acquires the notion of career path, to college education and to further education and training after employment. National School-to-Work Office, (1977) included not only those on the vocational track but also those on the non-vocational track.

their job performances, and the data was collected from relevant corporate managers in charge of human resources and 200 supervisors. And finally, the last chapter is dedicated to the conclusions of this research.

THEORETICAL STUDIES

Kim *et al* (2001) sampled a total of eight colleges, two colleges each from the city of Seoul, metropolitan areas, and other local areas, using the cluster sampling method to select 708 four-year university and two-year community college graduates (349 four-year universities and 359 junior colleges) from the graduating class of 2000 to conduct a survey on the employment of four-year university and two-year junior college graduates. To analyze this survey, the following was selected as survey criteria: reason for entering college and selecting that field of major, willingness to continue onto higher education, training experience at other institutions or job training centers during school years, working experience during school years, training experience at other institutions or job training centers after graduation, whether any kind of certificate was acquired, job search method, correlation between work and major, whether the field of major contributes to current work, whether the job requirements coincide with one's education, job satisfaction and etc.

Jang *et al* (2000) conducted a survey of 366 college students and graduates in order to understand today's transition from school to the business world, particularly for those who received higher education. The survey consists of four parts: employment of college graduates, allocated job post and relevant education, recruitment and salary, and evaluation on college education. It also limited the sampling to seven broad metropolitan areas, including Seoul, Busan, Daegu, Incheon, Daejeon, Gwangju, and Ulsan. Jang *et al* (2000) has significant implication in that they tried to increase the understanding of today's transition from education and training institutions to the labor market, however, the sample size of the individual survey was not broad enough to conduct detailed analysis according to the different attributes of the respondents and it was not representative in terms of sampling population. In Jang *et al* (2000), sampling was done within a limited area and since it was not a probability sampling, the survey cannot be generalized for all the Korean graduates. The survey undertaken by Kim *et al* (2000) did not have enough respondents to be considered as a full-fledged survey and it has high potential margin of error due to the use of cluster sampling which is useful when time and cost must be saved.

Park *et al* (2000) conducted two surveys of graduates who work in the industrial sector and related human resource managers to study the current situation of junior college graduates and the demands from industries. The survey analysis included the general situation of working college graduates in industrial sectors, correlation between job and major, job satisfaction, reasons for job transfers, and graduates' opinion on the usefulness of their junior college education. The survey was focused on the residential area of the researchers (Seoul, Busan, Gyeonggi area) and a frequency analysis was carried out to understand the general characteristics of the respondents. For questions that require more details, a 5-point Likert scale was used. This study has a significant implication in that it provides information on developing educational curriculum and contents by surveying and analyzing the current job performances of junior college graduates and suggests the educational direction which the junior colleges must pursue by studying the industry's expectations for graduating students of technical institutions. Nevertheless, it is unclear to whether the sampling of this survey was large enough to represent the population. Notably, it did not take into consideration the different majors and regions, which indicates that it is a subjective survey at best.

The abovementioned studies were all conducted to best fit each study's purpose. However, the respondents of these surveys are too narrowly defined. And the potential margin of error is high because they did not consider the fact that four-year universities and junior colleges are very different in nature and because the survey was conducted only to limited respondents.

To complement such failures, this study conducted a survey by selecting representative junior colleges and sampling representative population to conduct an accurate survey that takes into consideration the graduates' residing region and gender. This minimized the limitations of existing studies and helped perform in-depth studies to lower the margin of error.

CHANGES IN THE COMMUNITY COLLEGES IN LABOR MARKET

Quantity Changes In The Junior College Education

In 1980, the number of junior college accounted for 128. It dropped to 117 by 1990 and climbed back to 158 in 2001, a 23.4 percent increase compared to 1980. As of 2001, the number of national and public schools have remained unchanged at 16, whereas private schools increased to 101 in 1990 from 92, or 71.9 percent, in 1980, and again increased to 142 colleges, or 89.9 percent, in 2001. Since 1980 to 2001, the share of national and public-owned colleges out of the total number of junior colleges decreased by 18 percent, whereas private-owned colleges increased by 18 percent during the same period (Refer to Table 1).

Table 1: Number Of Junior Colleges
Unit: Each (%)

Year	1980	1985	1990	1995	2001	Number Of Change (%)
National/public	36(28.1)	17(14.2)	16(13.7)	8(5.5)	16(10.1)	↓20(↓18.0)
Private	92(71.9)	103(85.8)	101(86.3)	137(94.5)	142(89.9)	50(18.0)
Total	128(100)	120(100)	117(100)	145(100)	158(100)	30(0)

Source: Ministry of Education and Human Resources Development Korea Educational Development Institute, *Statistical Yearbook of Education*, various years.

The number of junior college students in 1980 accounted for 165,051. It gradually increased to reach 323,825 in 1990, and 952,649 in 2001, an increase of over 5.8 folds compared to 1980. The number of male and female students increased to 204,480 and 119,345 respectively in 1990, from 122,327, and 42,724 respectively in 1980. In 2001, they continued to increase to 601,569 and 351,080 respectively. The ratio of male and female students until early 1980s shows that the number of male students outpaced female by three folds. From 1980 to 2001, the ratio of female students translated into 36.9 percent, up 11.0 percent.

Quantity-wise, the number of male students increased by 479,242 during the same period. The ratio of community college students for male students however shows that there is a decline of 11.0 percent. Meanwhile, in the case of female students, 11.0 percent increased and their figure jumped from 42,724 to 351,080 (Refer to Table 2).

Table 2: Number Of Junior College Student By Gender
Unit: Number (%)

Year	1980	1985	1990	1995	2001	Number Of Change(%)
Male	122,327(74.1)	154,994 (64.1)	204,480 (63.1)	355,510 (62.4)	601,569 (63.1)	479,242 (↓11.0)
Female	42,724 (25.9)	87,123 (35.9)	119,345 (36.9)	214,310 (37.6)	351,080 (36.9)	308,356 (11.0)
Total	165,051(100)	242,117 (100)	323,825 (100)	569,820 (100)	952,649 (100)	787,598 (0)

Source: Ministry of Education and Human Resources Development Korea Educational Development Institute, *Statistical Yearbook of Education*, various years.

Meanwhile, if we look at the number of students according to fields, in 1980, social science accounted for 16,314, Science 126,382, medical & pharmaceutical studies 15,448 and arts & physical education 6,907. In 2001, students in humanities increased to 35,228, social studies 18,486, Science 517,959, medical & pharmaceutical studies 72,890, arts & physical education 121,295 and law 24,791 (Ministry of Education and Human Resources Development Korean Educational Development Institute, Annual Report on Educational Statistics).

Junior College Graduates' Entry Into The Labor Market

When evaluating the educational effect from a non-educational point of view, the important factor to consider is how well the education meets the current social demands. The employment rate thus becomes an important indicator that shows the tangible result of educational effect, and precisely because the educational purpose of junior colleges is job training, the employment rate can indicate its success or failure. Indeed, the economic situation can influence the employment rate, but job training at higher education institutes and employment go hand in hand and cannot be considered apart.

The employment rate of junior college graduates as of 1970 was 72.6 percent. However in 1980, it fell to as much as 50.3 percent. Since then, it rebounded and maintained the 70 percent level without significant fluctuations until 1999, when it went back down to 68.1 percent due to the foreign currency crisis under IMF administration.³ As of 2001, however, it remains high of 81.0 percent. In comparison, the employment rate of university graduates increased from 70.6 percent in 1970 to 73.0 percent in 1980, then, plummeted to 52.1 percent in 1985. It then showed a gradual upward trend, but decreased again to 51.5 percent in 1999, and slightly increased to 56.7 percent in 2001.⁴ Junior college students saw a slight drop in their employment rate during the IMF era. Nevertheless, it still outpaced the rate of university graduates since the 1980s (Refer to Table 3).

Table 3: Change Of The Employment Rate In Junior College Graduates And University Graduates

Unit: %

Year	1970	1975	1980	1985	1990	1995	1999	2000	2001
Junior College	72.6	58.3	50.3	57.2	71.8	74.2	68.1	79.4	81.0
University	70.6	71.8	73.0	52.1	55.0	60.9	51.5	56.0	56.7

Source: Ministry of Education and Human Resources Development Korea Educational Development Institute, *Statistical Yearbook of Education*, various years. Note 1). Employment rate = Number of employments/Number of graduates - (Number of School Entrants + Military Entrants) × 100.

Table 4 is a comparative analysis between vocational high school, junior college and university graduates on the correlation between work and major.⁵ As shown in Table 4, and according to the research result of the National Statistical Office, in 1996 and 2000, vocational high school graduates who answered “relevant” accounted for 26.1 and 17.4 percent respectively, junior college graduates 39.7 and 35.8 percent respectively, and university graduates 48.8 and 45.3 percent respectively.⁶ As such, it became more difficult to find relevance between work and major in all of the above three cases.

Among them, high school graduates were found to have the least relevance, and college graduates the most, indicating that the higher the education, the more relevant your work is to your major. Meanwhile, in 1996 and 2000, vocational high school graduates who answered that their work and major are “not relevant” represented 50.8 and 56.6 percent respectively, community college graduates 42.0 and 42.7 percent respectively, and university graduates 31.6 and 33.0 percent respectively, hinting at increases of irrelevance in all of the cases. Those who responded “not relevant” seemed to be more prevalent among those who did not receive higher education than those who did.

³ After requesting bailout funds from the International Monetary Fund(IMF) on 21 November 1997, Korea embarked on a path of painstaking economic reforms. IMF debts were completely cleared in 2002.

⁴ The employment rate of the community college and university graduates(75.5%) is high than that of the high school graduates(68.8) in 2000(OECD, 2002). However, the employment rate among the college graduated in Korea is lower than that in the OECD countries. For example, U. S. A, U. K, France, Canada, 85.0%, 87.8%, 83.1%, 82.7%, respectively.

⁵ David m. Lang(2001) found that job type and alignment do affect the return to college major capital. Daymont and Andrisanni(1984) used ten college major categories and work preferences. They found that between one-third and two-thirds of the gender gap can be explained by major choice and work preferences.

⁶ The percentage of respondents who answered “relevant” includes groups who answered “extremely relevant” and “more or less relevant”, while “not relevant” includes “more or less not relevant” and “not at all relevant” groups

Table 4: Rate Of Relevance Between Work And Major By School Attainment

Unit: %

	Extremely Relevant		More or less Relevant		Average		More Or Less Not Relevant		Not At All Relevant	
	2000	1996	2000	1996	2000	1996	2000	1996	2000	1996
Vocational high school graduate	3.1	4.1	14.3	22.0	25.9	23.1	30.8	27.1	25.8	23.7
Junior college graduate	14.0	16.3	21.8	23.4	21.5	18.4	23.8	23.6	18.9	18.4
University graduate	20.2	20.6	25.1	28.2	21.6	19.7	20.7	18.8	12.3	12.8

Source: National Statistical Office, *Report on Social Statistics Survey*, Various Years.

Table 5 shows 1995-1998 job transfer rate in the labor market according to the level of education. During this period, middle school graduates and under or high school graduates showed high job transfer rates compared to the total average, whereas junior college and university graduates exhibited lower transfer rates than the total average.

Table 5: Job Transfer Rate

Unit: %

School Attainment Year	Whole	Below middle School	High School Graduates	Junior College Graduates	University Graduates
1995	27.3	30.7	31.5	23.4	14.4
1996	27.8	31.3	32.4	25.5	14.7
1997	26.2	28.9	31.0	22.9	14.9
1998	26.3	31.9	30.3	22.4	16.3

Source: Ministry of Labor, Report on flowage survey, various years. Note: transfer rate = (number of transfer work / number of work) $\times$ 100.

As of 2001, there are 158 junior colleges in Korea and 232,000 graduates from these schools, with 20,000 more joining each year. Among them, the number of science majors translates into an average of 46.4 percent of all graduates, taking up the highest share. However, this share started to slowly decline in the 1990s and this pace accelerated in the mid-1990s. For the same year of 2001, the share of social studies graduates represented an average of 23.2 percent. In fact, it was 17.9 percent in 1985 but started to gradually increase, finally picking up speed since the mid-1990s.

This demonstrates the change in the structure of human resources due to the change in the industrial society, and it may be seen as a phenomenon that emerged from economic growth and changes in the industrial structure (Ministry of Education and Human Resources Development, Korean Educational Development Institute, Annual Report on Educational Statistics).⁷ Additionally, the share of graduates who studied medical & pharmaceutical studies and law fell gradually while that of humanities grew incrementally, making it rather clear that junior college education

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Unit: Thousands

	1997	1998	1999	2000	2001
Agriculture & Fisheries	2,385	2,480	2,349	2,288	2,193
Mining	26	21	20	18	19
Manufacturing	4,482	3,898	4,006	4,244	4,199
Public Utilities	77	61	61	63	56
Construction	2,004	1,578	1,476	1,583	1,575
Sales, Hotels, Restaurants	5,805	5,571	5,725	5,943	5,820
Transportation, Communication	1,162	1,169	1,202	1,263	1,322
Finance, insurance, business services	1,900	1,856	1,925	2,089	1,838
Public Administration	3,265	3,359	3,516	3,569	4,338

Note: Industrial: classification codes have been revised in 2000.

is still far from becoming an accomplished education. In fact, the tendency to enter an industry and start a full-fledged career after graduating from junior college declined slowly in the 1990s.

For the two years of 2000 and 2001, the number of junior college graduates who work in the social or private service industries among other industries ranked the highest, accounting for 54,085(33.8 percent) in 2000 and 60,539(35.4 percent) in 2001. Second in ranking was manufacturing, with 29,014 graduates (18.2 percent) in 2000 and 29,987(17.5 percent) in 2001. While those involved in distribution, finance, or service-related industries accounted for 59.7 percent in 2000 and 60.5 percent in 2001, those engaged in production-related jobs, such as agriculture, mining and manufacturing accounted for 29.5 percent in 2000 and 28.5 percent in 2001. It can thus be inferred that there is a close link between the changes in the junior college graduate employment rate and the increase of demand for workers in the manufacturing, distribution and communication service-related industries. This also means that junior colleges must work harder to nurture skilled human resources in accordance with the industrial growth and development (Ministry of Education and Human Resources Development Korea Educational Development Institute, Annual Report on Educational Statistics, 2000, 2001).

Table 6 shows employment of junior college graduates according to their field of major. Junior college graduates who were recruited in their fields of major accounted for 74.5 percent in 2000 and 75.0 percent in 2001, up 0.5 percent, while those who did not accounted for 40,744 in 2000 and 42,710 in 2001, also up 0.5 percent. Graduates who worked in areas other than their fields of major after completing their course seemed to increase the potential problem of frequent job transfers and constant labor market entry and exit.

Table 6: Employment Of Junior College Graduates By Field Of Major

Classification	Year 2000		Year 2001		Change (%)
	Number Of People	Percentage (%)	Number Of People	Percentage (%)	
Major field	119,216	74.5	128,276	75.0	↑0.5
Other field	40,744	25.5	42,710	25.0	↓0.5
Total	159,960	100	170,986	100	

Source: Ministry of Education and Human Resources Development Korea Educational Development Institute, *Statistical Yearbook of Education* (2000, 2001).

RESEARCH ANALYSIS BY THE SURVEY RESULTS

Designing The Survey Sample

The sampling scale was targeted at 800 junior college graduates⁸ and 200 companies that recruited these graduates.⁹ The survey was conducted nation-wide using the stratified sampling method (final sample was selected using random sampling)(Refer to Table 7). For allocation, expert sampling was used with reference to population distribution.

Graduate lists, which took heed of the distribution (according to gender and region) of community college graduates and current students, were provided by each school and were used as sampling framework. Random sampling of the graduate surveys was then applied to conduct the surveys of 200 companies. Logical questionnaires were used for the survey, and researchers carried out additional telephone, online, mail and door-to-door interviews with the respondents. Expert sampling was used for the sampling scale according to fields of major and genders. A list of 150~200 graduates from each school from relevant regions was random-sampled according to departments. Demographical attributes of the sampling, once the final survey was complete, demonstrated that the sampling is a good representation of the population.

⁸ The number of graduates we tracked after obtaining the personal information of 3,621 graduates of 33 community colleges from around the country.

⁹ I have sampled seven broad metropolitan are(Seoul, Busan, Daegu, Incheon, Daejeon, Gwangju, and Ulsan) and other local areas.

Table 7: Sample Of Junior College Graduates
Unit: Person (%)

	Total	Female	Number of Sample
	952,649	351,080	
Colleges			800
Humanities	35,228	21,428	29(3.6)
Social Science	180,486	86,888	152(19.0)
Natural Science	517,959	111,523	435(54.4)
Medical Pharmacy	72,890	51,508	61(7.6)
Arts & Physical Ed	121,295	56,166	102(12.8)
Teaching Profession	24,791	23,567	21(2.6)

The survey in this study was conducted with the purpose of analyzing the labor market situation of junior college graduates. Respondents include junior college graduate classes of 2000, 2001, and 2002. The framework of the sampling was made by collecting the graduates' personal backgrounds forwarded by relevant schools and tracking their employment records. Reverse tracking was done by analyzing the companies that mainly recruited these graduates. This method made it easier to collect data and facilitate comparative analysis on job-transfers, job security and salary with other job education and training institutes' graduates.

The number of respondents was divided in adequate ratio according to region (major cities, mid- and small-sized cities, etc.) and gender. The survey method included questionnaires, telephone, and Internet surveys conducted by professional research companies using standardized questionnaires designed by researchers, and interviews by professional interviewers who personally visited the places where these graduates worked. The responses were statistically analyzed by running the SPSS program, during which frequency distribution was also analyzed. Additionally, Chi-square (X^2) test was conducted to see whether or not the response distribution according to the subordinate group of each variable was the same. The survey was conducted between June 15 and June 30, 2002.

Survey Analysis Results

General Attributes of Respondents (Graduates)

Table 8 illustrates the general attributes of respondents to facilitate the analysis of labor market entry and job performances of junior college graduates.

General attributes are divided into age, residence, field of major, education institute, graduation year, and college location. Age is divided into four groups, 22 or younger, 23~25, 26~28 and 29 or older. The three former groups are evenly distributed by a percentage of 31.5, 32.4, and 25.3 respectively. And the share of the last group, 29 or older, takes up 10.9 percent. In terms of the field of major, science-related departments, with the exception of IT-related studies, ranked the highest in number with 48.3 percent. The figure in this sector is high especially because it is a sector where the educational goals of vocational and functional colleges lie.

Table 8 divided the sampling of students according to departments, such as humanities, information technology, natural science, medical, & pharmaceutical studies, arts & physical education (Ministry of Education and Human Resources Development, Korean Educational Development Institute's Annual Report on Statistics). However, in the course of conducting the analysis, science was sub-divided into science and IT, and the department of art & physical education was excluded. The IT sector was given a separate category because recently, there is an increasing demand of human resources in the IT sector and social awareness of IT has risen to a great extent. And the department of law was excluded from the analysis because of the limited sampling on the quantity front. IT ranked first accounting for 17.8 percent, humanities & social studies, arts & physical education and medical & pharmaceutical studies followed suit in this order with 16.1, 12.3, and 5.6 percent respectively. Junior college graduates accounted for 57.9 percent and 4.6 percent gave no response. According to the year of graduation, class of 2001 ranked top with 49.8 percent, 2002 was next with 33.8 percent and 2000 or earlier was last with 16.5 percent.

Table 8: General Attributes Of Respondents

Unit: Person (%)

Variable	Classification	Frequency		Total
		Male	Female	
Age	22 below	64(8.0)	188(23.5)	252(31.5)
	23~25	186(23.3)	73(9.1)	259(32.4)
	26~28	186(23.3)	16(2.0)	202(25.3)
	29 or older	74(9.3)	13(1.6)	87(10.9)
		510(68.8)	290(36.3)	800(100.0)
Field of Major	Humanities	43(5.4)	86(10.8)	129(16.1)
	Information Technology	98(12.3)	44(5.5)	142(17.8)
	Natural Science	297(37.1)	89(11.1)	386(48.3)
	Medical & Pharmacy	23(2.9)	22(2.8)	45(5.6)
	Arts & Physical Ed	49(6.1)	49(6.1)	98(12.3)
		510(63.8)	290(36.3)	800(100.0)
Year of Graduation	Before 2000	89(11.1)	43(5.4)	132(16.5)
	2001	255(31.9)	143(17.9)	398(49.8)
	2002	166(20.8)	104(13.0)	270(33.8)
Total		510(63.8)	290(36.3)	800(100.0)

Note: field major was classified by the Ministry of Education and Human Resources Development Korean Educational Development Institute's Annual Report on Statistics.

Economic Activities Of The Graduates

When asked whether they had work experiences after graduation, 98.9 percent of the graduates answered “at least once.” Different responses to this question according to gender, majors, and graduated institutes had no significant meaning here. Among the respondents, male respondents accounted for 99.0 percent, and female 98.6 percent. According to majors, students with IT-related educational background ranked top (100.0%), and those in the medical & pharmaceutical studies filled the bottom rank.

According to educated institutes, most junior college graduates had work experiences before graduation, and those community college graduates who did not accounted for a mere 0.7 percent. (Refer to <Table 9>).

Table 9: Work Experience After Graduation

Unit: Person (%)

Variable	Classification	Experience	No experience	Total
Gender	Male	505(99.0)	5(1.0)	510(63.7)
	Female	286(98.6)	4(1.4)	290(36.3)
$X^2 = .264$				
Field of Major	Humanities	127(98.4)	2(1.6)	129(16.2)
	Information Technology	142(100.0)	-	142(17.8)
	Natural Science	381(98.7)	5(1.3)	386(48.2)
	Medical & Pharmacy	44(97.8)	1(2.2)	45(5.6)
	Arts & Physical Ed.	97(99.0)	1(1.0)	98(12.2)
$X^2 = 1.607$				
Total		791(98.9)	9(1.1)	800(100.0)

* $P < .05$, ** $P < .01$, *** $P < .001$

Table 10 is an analysis on the condition of the first job after graduating from junior colleges. Responses to this question according to three variables, gender, majors and graduated institutes, had no significant statistical meaning here. In the case of male respondents, the ratio permanent positions (85.7%) was higher than those of female respondents (86.0%). And overall, the ratio of permanent working positions was the highest with 85.3 percent and next on the list was temporary positions with 10.9 percent.

Table 10: Employment Condition Of The First Job After Graduation

Unit: Person (%)

Variable	Classification	Permanent Employees	Temporary Employees	Daily Workers	Contract Workers	Etc.	Total
Gender	Male	429 (85.0)	51 (10.1)	3 (0.6)	2 (0.4)	20 (3.9)	505 (63.8)
	Female	246 (86.0)	35 (12.2)	1 (0.3)	3 (1.0)	1 (0.5)	286 (36.2)
Total		675 (85.3)	86 (10.9)	4 (0.5)	3 (0.4)	21 (2.9)	791 (100.0)
$X^2 = 7.666$							

* P < .05, **P < .01, *** P < .001

When asked whether they currently have an income, in other words, carrying out economic activities, most graduates replied “yes.” When different responses to this question according to gender and majors were studied, different majors seemed to have significant statistical meaning here, with $X^2=12.032$. IT-related department respondents ranked the highest (97.1%), with humanities and social studies (94.6%), arts & physical education (93.9%), medical, and pharmaceutical studies (91.1%) and science, excluding the IT-related studies (88.9%), following suit.

According to gender, there were no significant differences, with male accounting for 92.2 percent and female 91.7 percent. According to the year of graduation, class of 2000 or students who graduated prior to that year accounted for the highest (97.0%) (Refer to Table 11).

Table 11: Current Income Activities

Unit: Person (%)

Variable	Classification	Active	Not Active	Total
Gender	Male	470(92.2)	40(7.8)	510(63.8)
	Female	266(91.7)	24(8.3)	290(36.3)
Total		736(92.0)	64(8.0)	800(100.0)
$X^2 = .047$				
Field of Major	Humanities	122(94.6)	7(5.4)	129(16.1)
	Information Technology	138(97.2)	4(2.8)	142(17.8)
	Natural Science	343(88.9)	43(11.1)	386(48.3)
	Medical & Pharmacy	41(91.1)	4(8.9)	45(5.6)
	Arts & Physical Ed.	92(93.9)	6(6.1)	98(12.3)
Total		736(92.0)	64(8.0)	800(100.0)
$X^2 = 12.032^*$				

P < .05, **P < .01, *** P < .001

The most common response to the question of why they are not participating in economic activities was “other” (40.7%). Next common responses were preparing for job-search at the moment (40.6%) and haven’t found an adequate job yet (10.9%) (Refer to Table 12). When different responses to this question according to age, major and graduated institutes were studied, different age groups seemed to have significant statistical meaning here, with the

23~25 age group accounting for 47.4 percent, 26~28 age group 41.7 percent, 22 and younger 36.6 percent and 29 and older 33.3 percent.

Table 12: Reason For Not Participating In Income Activities

Unit: Person (%)

Variable	Classification	Preparing For Job Search	Haven't Found Adequate Job	Preparing For School Entrance	Etc	Total
Gender	Male	16(36.4)	4(18.1)	3(6.8)	17(38.7)	44(64.7)
	Female	10(41.7)	3(12.5)	2(8.3)	9(37.5)	24(35.3)
$X^2 = 13.001$						
Age	below 22	11(36.6)	2(6.7)	3(10.0)	14(46.7)	30(44.1)
	23~25	9(47.4)	2(10.5)	2(10.5)	6(31.6)	19(27.9)
	26~28	5(41.7)	2(6.6)	-	5(41.7)	12(17.6)
	29 or older	1(33.3)	1(33.3)	-	1(33.3)	3(4.4)
$X^2 = 72.383^{**}$						
Field of Major	Humanities	1(14.3)	-	1(14.3)	5(71.4)	7(10.4)
	Information Technology	-	1(25)	-	3(75)	4(5.9)
	Natural Science	20(41.5)	4(1.9)	4(1.9)	15(34.9)	43(63.2)
	Medical & Pharmacy	1(25)	2(50)	-	1(25)	4(5.9)
	Arts & Physical Ed.	4(66.7)	-	-	2(3.3)	6(8.8)
$X^2 = 83.262^{**}$						

P < .05, **P < .01, *** P < .001

Choice Of Major And Job Experience During School Years

When asked why they chose a certain school and major, interest and aptitude was the most common response with 56.3 percent. Different responses to this question according to majors and graduated institutes seemed to have significant statistical meaning here. The share of male-to-female ratio was 63.7 and 36.3 percent respectively. Those graduates who responded “other” came next in rank with 20.6 percent, and those who responded, “Because it guarantees employment” followed suit with 15.7 percent (Refer to Table 13).

Table –13: Reasons For Choosing A Certain College And Major

Unit: Person (%)

Variable	Classification	Good Job Search	Appropriate Grade	Interest And Aptitude	Etc.	Total
Gender	female	76(15.0)	37(7.3)	293(57.7)	102(20.1)	508(63.7)
	male	49(16.9)	23(7.9)	156(53.8)	62(21.4)	290(36.3)
Total		125(15.7)	60(7.5)	449(56.3)	164(20.6)	798(100.0)
$X^2 = 1.192$						

*P < .05, **P < .01, *** P < .001

When asked if a certificate helps, different responses according to educated institutes seemed to have significant meaning here. Junior college graduates accounting for 34.4 percent responded that it did not help, and 41.2 percent responded that it helped (Refer to Table 14).

Table 14: Certificate Helps In Getting Hired

Unit: Person (%)

Variable	Classification	Not At All	Not Satisfied	Average	Satisfied	Very Satisfied	No Response	Total
Gender	Male	60(16.2)	78(21.1)	80(21.6)	118(31.9)	33(8.9)	1(0.3)	370(64.1)
	Female	28(13.5)	27(13.0)	56(27.1)	63(30.4)	28(13.5)	5(2.4)	207(35.9)
Total		88(15.3)	105(18.2)	136(23.6)	181(31.4)	61(10.6)	6(1.0)	577(100.0)
$X^2 = 7.666$								
Field of Major	Humanities	12(14.3)	13(15.5)	20(14.7)	29(34.5)	9(10.7)	1(1.2)	84(14.6)
	Information Technology	18(18.6)	17(17.5)	26(26.8)	31(32.0)	4(4.1)	1(1.0)	97(16.8)
	Natural Science	45(15.5)	55(18.9)	69(23.7)	91(31.3)	29(10.0)	2(0.7)	291(50.4)
	Medical & Pharmacy	5(13.5)	4(10.8)	5(13.5)	15(40.5)	8(21.6)	-	37(6.4)
	Arts & Physical Ed.	8(9.1)	16(23.5)	16(23.5)	15(22.1)	11(16.2)	2(2.9)	68(11.8)
Total		88(15.3)	105(18.2)	136(23.6)	181(31.4)	61(10.6)	6(1.0)	577(100.0)
$X^2 = 22.485$								

*P < .05, **P < .01, *** P < .001

Transition From School To Workplace

Junior college graduates who work in private companies accounted for 87.3 percent, whereas graduates working in the public sector accounted for only 12.7 percent. Companies where the graduates were recruited differed according to gender, with $X^2=7.013$. More female respondents appeared to be working in the public sector than male respondents. (Refer to Table 15).

Table 15 Employment By Corporate System

Unit: Person (%)

Variable	Classification	Private Companies	Public Sector	Total
Gender	Male	438(93.6)	30(6.4)	468(63.9)
	Female	233(87.9)	32(12.1)	265(36.1)
$X^2 = 7.013$				
Total		640(87.3)	91(12.7)	733(100.0)

* P < .05, **P < .01, *** P < .001

When asked why they chose their current job, different responses according to gender, majors and graduated institutes seemed to have significant statistical meaning. Aptitude and interest was the most common response with 42.7 percent, salary and job-security came next with 19.2 and 14.2 percent respectively. (Refer to Table 16).

Table 17 shows the current working condition of graduates. Permanent jobs placed top with 86.9 percent and temporary jobs accounted for 8.6 percent

According to majors, science major, excluding IT-related studies, accounted for the highest percentage with 42.6, next in rank were IT and humanities and social studies with 15.1 and 13.8 percent respectively, and medical & pharmaceutical studies was lowest with 4.5 percent. Also, according to gender, there were no male respondents who held temporary jobs. On the contrary, some female respondents held temporary jobs (Refer to Table 17).

When asked how long they worked for the current job, the number of those who responded more than 13 months was the highest (44.3%), and less than 2 months accounted for only 7.4 percent. However, the fact that the respondents who worked more than 3 months to less than 12 months accounted for 48.2 percent of the total

respondents shows how frequent job-transfers are taking place among community college graduates (Refer to Table 18).

Table 16: Reason For Choosing Current Job

Unit: Person (%)

Variable	Classification	Salary Level	Job Security	Aptitude And Interest	Etc.	Total
Gender	Male	91(19.4)	55(11.8)	193(41.2)	129(27.6)	468(63.8)
	Female	42(15.8)	41(15.5)	107(40.4)	75(28.3)	265(36.2)
Total		133(18.1)	96(13.1)	300(40.9)	204(27.9)	733(100.0)
$\chi^2 = 38.576^{**}$						
Field of major	Humanities	15(12.6)	17(14.3)	57(47.9)	30(25.2)	119(16.2)
	Information Technology	18(13.0)	23(16.7)	57(41.3)	40(29.0)	138(18.8)
	Natural Science	80(23.3)	47(13.7)	124(36.2)	92(26.8)	343(46.8)
	Medical & Pharmacy	10(24.4)	6(14.6)	11(26.8)	14(34.2)	41(5.6)
	Arts & Physical Ed.	10(10.9)	3(3.3)	51(55.4)	28(30.4)	92(12.6)
Total			96(13.1)	300(40.9)	204(27.9)	733(100.0)
$\chi^2 = 148.726^{***}$						

* P < .05, **P < .01, *** P < .001

Table 17: Working Condition

Unit: Person (%)

Variable	Classification	Permanent Employees	Temporary Employees	Daily Workers	Contract Workers	Etc	Total
Gender	Male	408(87.2)	34(7.3)	-	-	26(5.5)	468(63.8)
	Female	229(86.4)	29(10.9)	3(1.1)	1(0.4)	3(1.6)	265(36.2)
Total			63(8.6)	3(0.4)	1(0.1)	29(0.6)	733(100.0)
$\chi^2 = 19.226^{**}$							
Field of major	Humanities	101(84.9)	12(10.1)	-	1(0.8)	5(4.1)	119(16.2)
	Information Technology	111(80.4)	19(13.8)	2(1.4)	-	6(1.8)	138(18.8)
	Natural Science	312(91.0)	18(5.2)	-	-	13(3.8)	343(46.8)
	Medical & Pharmacy	33(5.2)	6(14.6)	1(2.4)	-	1(2.4)	41(5.6)
	Arts & Physical Ed.	80(87.0)	8(8.7)	-	-	4(4.3)	92(12.6)
Total			63(8.6)	3(0.4)	1(0.1)	29(0.6)	733(100.0)
$\chi^2 = 36.632^{**}$							

*P < .05, **P < .01, *** P < .001.

Table 18: Length Of Stay At The Current Job

Unit: Person (%)

	Gender		Total
	Male	Female	
Less than 2 months	39(8.3)	15(5.7)	54(7.4)
3-6 months	100(21.4)	90(34.0)	190(25.9)
7-12 months	109(23.3)	55(20.8)	164(22.3)
More than 13 months	220(47.0)	105(39.5)	325(44.3)
Total	468(63.8)	265(36.2)	733(100.0)

In case of job-transfers, the most common response was twice with 77.6 percent and the next was three times with 16.0 percent. It is also worthy to note that those who transferred five times (4.2%) was higher in the list than four times (2.3%). Also, according to gender, female respondents who transferred twice showed a higher rate (87.5%) than male (72.8%), whereas male graduates who transferred three times showed a higher rate (20.4%) than female (6.9%).

When asked how long it took to land on the current job, more than five months ranked top with 76.5%, followed by 1~3 months or less, 3~5 months and 1 month or less, with 13.7, 5.0 and 4.8 percent respectively. This question revealed that it took a considerable amount of time for graduates to find a job (Refer to Table 19).

Table 19: Time It Took To Land On The Current Job
Unit: Person (%)

Variable	Classification	1 Month Or Less	1-3 Months Or Less	3-5 Months	More Than 5 Months	Total
Gender	Male	19(4.1)	61(13.0)	22(4.7)	368(78.3)	470(58.8)
	Female	16(6.0)	40(15.1)	15(5.7)	192(73.3)	263(33.2)
Total		35(4.8)	101(13.7)	37(5.0)	560(76.5)	733(100)

When asked how relevant the field of major studied during the school years is to current work, those who responded positively (“extremely relevant” and “relevant”) accounted for 72.3 percent. As such, different responses according to majors seemed to have significant statistical meaning here. The department of science, with an exception to IT-related studies, ranked top with 32.7 percent, while Medical & Pharmaceutical studies ranked bottom with 5.1 percent. The number of respondents working at companies with less than 10 employees had the most positive answers compared to other comparative groups, with 31.0 percent. According to educated institutes, technical colleges had the best record with 41.8 percent, according to graduating year, the class of 2001 ranked top with 34.5 percent and private companies topped the list with 66.3 percent.

When asked whether the field of major helps facilitate work at the current workplace, the answers “Definitely helped” and “It did help” (66.0%) were significantly higher than “It did not help” and “Definitely did not help” (2.5%). This shows that the curriculum and major selected during the school years have close links with the work performed on-site. According to majors, Medical & Pharmaceutical jobs showed closest links with their jobs (Refer to Table 20).

When asked how relevant current work is with what they majored, 72.3 percent of total respondents answered “relevant.” According to majors, medical & pharmaceutical jobs showed closest links with their jobs, with $X^2=47.573^{***}$ (Refer to Table 21).

When respondents who answered “not relevant” were asked why they continued to work, “other” response was most common with 57.4 percent, and “could not find a relevant job” was the next most common response with 21.9 percent. When asked whether they have plans to find another job within a year, positive and negative answers accounted for 24.3 and 75.0 percent respectively (Refer to Table 22). Survey results showed that 6.5 percent of the respondents working at companies with less than 10 employees expressed intentions to transfer within a year and smaller companies tended to show higher job-transfer rates. Private companies also showed higher transfer rates (22.9%) than public companies (1.4%).

When asked why they want to quit their current job to the 178 respondents (24.3%) who responded that they have the intention to find a new job within a year, the most common response was low salary with 32.6 percent, followed by bad working conditions, wrong aptitude and major and no vision with 19.7, 19.1 and 1.1 percent respectively. Analysis showed that respondents working at companies with less than 10 employees stated wrong aptitude and major as their most common response, compared to other comparative scales. Meanwhile, respondents working at companies with 11~13 employees stated bad working conditions as the most common response.

Table 20: Effect Of Field Of Major On Facilitating Work At The Current Work Place**Unit: Person (%)**

Variable	Classification	Definitely Did	Did	Average	Did Not	Definitely Did Not	Total
Gender	Male	179 (38.2)	126 (26.9)	151 (32.4)	10 (2.1)	2 (0.4)	468 (63.8)
	Female	104 (39.2)	75 (28.3)	80 (30.2)	5 (1.9)	1 (0.4)	265 (36.1)
$X^2 = 1.063$							
Field of Major	Humanities	40(33.6)	35(29.4)	40(33.6)	4(3.4)	-	119(16.2)
	Information Technology	41(29.7)	41(29.7)	51(37.0)	5(3.6)	-	138(18.8)
	Natural Science	128 (37.3)	95(27.7)	113(32.9)	5(1.5)	2(0.6)	343(46.8)
	Medical & Pharmacy	33(80.5)	5(12.2)	-	-	-	41(5.6)
	Arts & Physical Ed.	41(44.6)	25(27.2)	24(26.0)	1(1.1)	1(1.1)	92(12.6)
$X^2 = 47.573***$							

* P < .05, **P < .01, *** P < .001

Table 21: Relevance Between Current Work And College Major**Unit: Person (%)**

Variable	Classification	Definitely Did	Did	Average	Did Not	Definitely Did Not	total
Gender	Male	210(44.9)	126(26.9)	20(4.3)	76(16.2)	36(7.7)	468(63.8)
	Female	119(44.9)	75(28.3)	14(5.3)	37(14.0)	20(7.5)	265(36.2)
Total		329(44.9)	201(27.4)	34(4.6)	113(15.4)	56(7.6)	733(100.0)
$X^2 = 1.063$							
Field of Major	Humanities	44(37.0)	41(34.5)	7(5.9)	18(15.1)	9(7.6)	119(16.2)
	Information Technology	53(38.4)	40(29.0)	9(6.5)	24(15.9)	12(8.7)	138(18.8)
	Natural Science	146(42.6)	94(27.4)	17(5.0)	58(16.9)	28(8.2)	343(46.8)
	Medical & Pharmacy	37(90.2)	1(2.4)	-	2(4.9)	1(2.4)	41(5.6)
	Arts & Physical Ed.	49(53.3)	25(27.2)	1(1.1)	11(12.0)	6(6.5)	92(12.6)
$X^2 = 47.573***$							
Total		329(44.9)	201(27.4)	34(4.6)	113(15.4)	56(7.6)	733(100.0)

* P < .05, **P < .01, *** P < .001

Table 23 shows what respondents are doing to find a new job. “Nothing special” was the most common response with 44.4 percent. “Actively looking for a job” was the least common response with 19.1 percent. Those who answered that they are preparing to acquire a certificate accounted for 18.5 percent of the total respondents.

When asked to those unemployed among the technical or functional college graduates if they ever tried to find a job during the past one week, only 24 out of 64 (37.5%) unemployed students answered yes.

Table 22: Plans To Find Another Job Within Year

Unit: Person (%)

Variable	Classification	Yes	No	No Response	Total
Gender	Male	110(23.5)	353(75.4)	5(1.1)	468(63.8)
	Female	68(25.7)	197(74.3)	-	265(36.2)
Total			550(75.0)	5(0.7)	733(100.0)
$X^2 = 3.182$					
Field of Major	Humanities	33(27.7)	85(71.4)	1(0.8)	119(16.2)
	Information Technology	33(23.9)	104(75.4)	1(0.7)	138(18.8)
	Natural Science	83(24.2)	258(75.2)	2(0.6)	343(46.8)
	Medical & Pharmacy	8(19.5)	33(80.5)	-	41(5.6)
	Arts & Physical Ed.	21(22.8)	70(76.1)	1(1.1)	92(12.6)
	Total	178(24.3)	550(75.0)	5(0.7)	733(100.0)
$X^2 = 2.039$					

* P < .05, **P < .01, *** P < .001

Table 23: Doing To Find A New Job

Unit: Person (%)

	Male	Female	Total
Nothing special	46(58.2)	33(41.8)	79(44.4)
Actively looking for a job	22(64.7)	12(65.3)	34(19.1)
Vocational education and training	4(66.7)	2(33.3)	6(3.4)
Preparing to acquire a certificate	26(78.8)	7(21.2)	33(18.5)
Preparing to transfer or go on to next stage	3(33.3)	6(66.7)	9(5.1)
Collecting of information on the websites	2(33.3)	4(66.7)	6(3.4)
Studying foreign language	3(60.0)	2(40.0)	5(2.8)
Internship	1(100.0)	-	1(0.6)
Information from people around	1(100.0)	-	1(0.6)
No response	2(50.0)	2(50.0)	4(2.2)
Total	110(61.8)	68(38.2)	178(100.0)

CONCLUSION

This paper has been concerned with the extent to which there are problems of informational access that complicate the match of Korea's junior college graduates with the labor market. Due to the lack of information on transition from school to the labor market, graduates of junior college frequently changed their jobs. As such, they show some common orientations related to occupation such as relatively shorter continuous services, insecure condition of employment, and employee marketability that is highly sensitive to economic fluctuations. Thus, there is a need to improve employee marketability through market experience, by utilizing field experience during undergraduate studies. In order to enhance the educational quality of junior colleges and polytechnic colleges, it is important to establish a post-school management system to assist graduates. Information and guidance services should be offered not only to enrolled students but also to graduates for employment purposes.

Businesses consider the relevant major of prospective employees as a critical hiring factor. In terms of educational purposes, junior colleges focus on the fostering of professional workforce. As a result, they have been unable to produce manpower with technical competence as required by competitive businesses. Thus, junior colleges need to re-consider and develop their own social identity as vocational education and training institutes.

The rate of among community college graduates was obtaining qualification certificates observed to be significantly high. However, businesses tend to take these certifications superficially despite the serious effort that came in obtaining them. As a result, graduates tend to doubt the necessity for qualification certificates in the job market. Thus, in the course of employment selection, businesses should give some additional points to graduates of

junior colleges who possess qualification certificates that are relevant to their prospective jobs. Furthermore, relevant government authorities should formulate a policy for institutionalizing a more rational employment system for graduates of junior colleges and polytechnic colleges.

REFERENCES

1. Kim, H. (2001). *Employment of the Highly-Educated Workforce Focusing on Graduates of Colleges and Junior College*. Ministry of Education and Human Resources Development, Seoul, Korea.
2. Park, H. (2000). *Report on Survey and Demand of Industry Sectors for Community College Graduates*. Korean Council for College Foundation, Seoul, Korea.
3. Lee, E. (2000). *Employment Analysis of University Graduates: Focusing on Prestigious Universities and Department*. Korea Research Institute for Vocational Education & Training, Seoul, Korea.
4. Chang, W. (2000). *A Study on the Transition from College to the World of Work*. Korea Research Institute for Vocational Education & Training, Seoul, Korea.
5. David M. Lang. (2001). *College Majors, Job Types and Labor Market: Is College Major a Signal?* Department of Economics, Washington University.
6. Daymont, Thomas N. and Paul J. Andrisani. (1999). Job Preferences, College Major, and the Gender Gap in Earnings. *Journal of Human Resources*, 19(3), 408-428.
7. Lee, Namchul. (2000). Education and Economic Growth in Korea, 1966 to 1997. *The Journal of Applied Business Research*, 24(4), 83-93.
8. Neumark David & Mary Joyce. (2000). Evaluating School-to-Work Programs Using the New NLSY, NBER Working Paper, NO.7719.
9. OECD. (1998). *Labor Force Statistics: 1977-1998*.
10. OECD. (1999). *Thematic Review: The Transition from Initial Education to Work Life*, Paris.
11. OECD. (2001, 2002). *OECD Employment Outlook*.
12. Ryan, P. (2001). The School-to-Work Transition: A Cross-national Perspective. *Journal of Economic Literature*, 39(1), 34-92.
13. Sanchez, J. I. and Levine, E. L (1999), *Is Job Analysis Dead, Misunderstood, or Both?: New Forms of Work Analysis and Design*. In A. I. Kraut & A. K. Korman(Eds.), *Evolving Practices in Human Resources Management* (pp.43-68). San Francisco, CA: Jossey-Bass Publishers.
14. U. S. Department of Education. (1997). Evaluation the Net Impact of School-to-Work: Proceedings of a Round Table.
15. U. S. Department of Education. (2000, 2001). *Digest of Education Statistics*.