

ORIGINAL ARTICLE

The Effect of Motivation in Obtaining a Certificate on Career Decision-Making Self-Efficacy -With a Focus on Landscape Technicians-

lee Chen Oh, Yong Jo Jung¹⁾*

Department of Environmental Science and Ecological Engineering Graduate School, Korea University, Seoul 02841, Korea

¹⁾*Department of Greensmart City, Sangmyung University, Chungnam 31066, Korea*

Abstract

This study promotes the understanding of landscape technicians by, assessing the professional qualification system that aligns with the needs of the 21st-century environment, distinct from the industrialization era. It provides basic theoretical insights into the multi-dimensional connections between the motivation for a certificate and the career decision-making self-efficacy of individuals with a demand for the certificate in the structural aspect. The collected data underwent a comprehensive analysis involving frequency assessments, confirmatory factor analysis, descriptive statistics, reliability tests, and correlation analyses. The study found differences according to participants' diverse sociodemographic characteristics including gender, place of residence, educational background, and occupation. The motivation for obtaining a certificate had significant positive effects on their career-decision-making self-efficacy, within the context of structural relations. The study findings on the relations between motivation for obtaining a certificate and career decision-making self-efficacy demonstrate that the direction and intensity of efforts to obtain a certificate can increase the career decision-making self-efficacy of people hoping to become landscape technicians.

Key words : Landscape technician, Motivation for employment, Career decision-making, Self-efficacy

1. Introduction

As the improvement of a residential environment has been an object of consistent interest according to the enhanced living standard of people and the growing intellectual needs, there is a tendency of rising interest in the landscape field in society (Baek et al., 2012). Landscaping was established as a professional area within a short period of time and underwent various changes under the strong leadership of the government since the 1970s. Professionals including landscape technicians should play a major role

in the positioning of landscaping as a professional domain to satisfy this modern knowledge-based society (Min, 2017).

In recent years, the growing interest in the urban environment and nature had improved the perception of landscaping among common people and increased the number of people that put landscaping in their second lives after retirement (Byeon and Shin, 2009). According to the 2012 statistical yearbook of national technical qualifications published by the Human Resources Development Service of Korea, the landscape technician qualification ranked No. 4 among cer-

Received 11 August, 2023; **Revised** 23 August, 2023;

Accepted 23 August, 2023

***Corresponding author :** Yong-Jo Jung, Department of Greensmart City, Sangmyung University, Chungnam 31066, Korea
Phone : + 82-41-550-5493
E-mail : smilejung@smu.ac.kr

© The Korean Environmental Sciences Society. All rights reserved.

© This is an Open-Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/3.0>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Table 1. Sociodemographic characteristics of the subjects

Classification		Frequency	Percent(%)
Gender	Male	317	79.2
	Female	83	20.8
Residence	Seoul	114	28.5
	Gyeonggi	133	33.4
	Gangwon	3	0.7
	Chungcheong	12	3.0
	Gyeongsang	128	32.0
	Jeolla	4	1.0
	Jeju	3	0.7
	Others	3	0.7
	Graduated from high school or lower	84	21.0
Educational background	Attended college/dropped out	61	15.3
	Graduated from college	219	54.8
	Graduated from graduate school or higher	36	8.9
	Unemployed/retired	121	30.3
Occupation	Student	12	3.0
	Full-time job	79	19.7
	Part-time job	116	29.0
	Self-employed	48	12.0
	Housewife	24	6.0
Total		400	100.0

tificate recipients aged 50 or older and was the most popular among those who were aged 60 or older. This data indicates that the landscape technician certificate, which is popular among the middle-aged and the elderly, attracts their attention for a career options in a retirement preparation process or after retirement (Baek et al., 2012).

Qualification means a person ability assessed or recognized according to certain criteria and procedures, and the segmentation of qualification by the area of function is diversifying motivations for obtaining a qualification (Kim and Lee, 2016; Kim and Cha, 2018). Here, motivation refers to an internal state to induce an act and propose and maintain a direction (Woolfolk, 2004). As a root of all purposeful and goal-oriented human acts, motivation works as a very important psychological variable in choosing an occupation

(Nam-Gung, 2011).

Employment instability and the prolonged life cycle created a boom of obtaining a certificate at the self-development level (Kim and Kim, 2013). The a demand for a certificate is gradually increasing for promising fields for the future including realtors and landscape technicians. Motivation for obtaining a certificate is a very important factor in doing a job and known to have close effects on individuals' career decisions and career decision-making self-efficacy (Jang, 2012).

In a research with office workers, the authors found that initiative, value, and competitiveness, which are subfactors of obtaining a certificate, had positive (+) effects on self-efficacy (Kim and Cha, 2018). It was reported that motivation for obtaining an in-firm certificate was an important variable in human resource development and had

positive effects on job efficacy (Jang, 2012). Those who had career decision-making self-efficacy, which is related to a person's career choice, were active about occupational mobility, which means that career decision-making self-efficacy had high impacts on a retirement path (Yoon and Kim, 2012). That is, people with high career decision-making self-efficacy, which is defined as one's belief in his or her ability to perform a task related to a career decision successfully, make good preparations for their retirement (Ju, 2010).

There are a bunch of previous studies related to it: Kang(2021) on structural relations among the learned helplessness, self-leadership, career motivation, and career decision-making self-efficacy; Kim(2007) on relations between vocational counselors' work values and their internal and external locus of control and self-efficacy; Kim(2011) on the effects of internal and external locus of control and career self-efficacy on the retirement paths of the Baby Boom generation; Kim(2011) on the effects of the Holland career group counseling program on the career maturity and career decision-making self-efficacy of college students; Kim and Cha(2018) on the effects of motivation for obtaining a certificate on career development and self-efficacy in the fields of cooking and dining; Nam-Gung(2011) on the effects of early childhood teachers' motivation for choosing the teaching profession on their teaching commitment and teacher efficacy; Moon(2018) on relations among the ARCS learning motive factors, NCS-based education evaluation, career decision-making self-efficacy, and academic achievement; Park(2013) on the effects of obtaining a certificate on the increased self-efficacy of students in vocational schools; Byeon(2020) on the analysis of a path among the social support, career barrier, self-efficacy, and career preparation action of college athletes; Song(2018) on the mediating effects of self-directed learning on influential relations between the learning participation motivation and

self-efficacy of adult learners with a high educational background; Yoon and Kim(2012) on the effects of career self-efficacy on the retirement preparations of the Baby Boom generation; and Ju(2010) on the effects of self-efficacy and social participation on the retirement preparations of the Baby Boom generation.

According to findings about career self-efficacy, when people have conviction in their abilities in a certain situation, they deal with the situation in a more active and aggressive manner. When people have no conviction in their abilities, they rather avoid the situation. There is a need to examine this by focusing on findings that those who had high career self-efficacy were active about occupational mobility to change an occupation after retirement due to economic conditions and that career self-efficacy had high impacts on their retirement paths (Bandura and Woo, 1989).

Against this backdrop, the present study was conducted to promote the understanding of landscape technicians, a professional qualification system fit for the 21st-century environment changed beyond the industrialization age, and provide basic theoretical data about multi-dimensional relations between motivation for a certificate and career decision-making self-efficacy of people with a demand for the certificate in the structural aspect. The purpose of the study is to provide useful information about the empirical aspects of people with a demand for the landscape technician certificate by analyzing the effects of motivation for obtaining the certificate on their career decision-making self-efficacy.

2. Materials and Methods

2.1. Research scope

The scope of the study covers 400 men and women around the nation who were taking a course to obtain the landscape technician certifi-

Table 2. CFA and reliability analysis results based on the analysis of the measurement model

Measure ment item	B	S.E	Beta	AVE	CR	α
Initiative				0.833	0.937	0.937
Initiative1	1		0.968			
Initiative2	0.964	0.026	0.937			
Initiative3	0.802	0.29	0.851			
Value				0.863	0.95	0.958
Value5	1		0.961			
Value6	1.022	0.25	0.948			
Value7	0.968	0.27	0.914			
Connection				0.869	0.952	0.955
Connection8	1		0.940			
Connection9	1.017	0.24	0.970			
Connection10	0.898	0.28	0.903			
Competitiveness				0.846	0.943	0.956
Competitiveness11	1		0.966			
Competitiveness12	1.003	0.20	0.976			
Competitiveness14	0.875	0.28	0.872			
Self-evaluation				0.869	0.952	0.946
Self-evaluation1	1		0.910			
Self-evaluation2	0.988	0.33	0.919			
Self-evaluation3	1.013	0.32	0.940			
Goal setting				0.737	0.893	0.867
Goal setting8	1		0.881			
Goal setting9	0.866	0.49	0.767			
Goal setting10	0.970	0.48	0.840			
Occupational information				0.738	0.894	0.878
Occupational information11	1		0.836			
Occupational information13	1.066	0.55	0.858			
Occupational information14	0.951	0.51	0.829			
Problem solving				0.714	0.909	0.851
Problem solving15	1		0.726			
Problem solving16	1.21	0.78	0.837			
Problem solving17	1.019	0.74	0.733			
Problem solving19	1.110	0.76	0.774			

CMIN (df) =1530.020(563), CFI=0.931, TLE=0.918, SRMR=0.0421, RMSEA=0.066

icate or had an experience with such a course. Data was collected with a face-to-face method

and an SNS-based non-contact method (ex., Google forms) based on the criteria of Huh and

Kim(2003) for approximately seven months between August 2022 and March 2023. After a process of excluding questionnaires considered by the investigators to have low reliability based on missing responses and certain patterns of responses, the study used the data of 400 in total as the final subjects.

The study used judgment sampling, one of the non-probability sampling methods, to select research subjects. Judgment sampling, which is also called purposive sampling, chooses samples according to the researcher's subjectivity. In judgment sampling, a sample should be comprised of subjects capable of reflecting the characteristics of the population. Here, the researcher's subjective opinions serve as important criteria. In this sampling, the researcher samples members fit for the research goal based on an assumption that the opinions of experts in a given field have the representative nature of the population. One of its advantages is that the sample selected based on a judgment of an expert in the field can provide very useful information (Park, 2011).

2.2. Methods

The present study carried out the following statistical analyses for the collected data with SPSS 26.0 and AMOS 21.0:

First, frequency and descriptive statistical analyses were conducted to examine the sociodemographic characteristics of the subjects, of which gender, residence, educational background, and occupation were examined and analyzed.

Second, a Confirmatory Factor Analysis (CFA) was conducted based on the analysis of a measurement model to review the convergent validity and reliability of the questionnaire used to examine motivation for obtaining a certificate and career decision-making self-efficacy along with a reliability analysis based on Cronbach's α coefficients.

Third, a descriptive statistical analysis was performed with the components of motivation for ob-

taining the landscape technician certificate (initiative, value, connection, and competitiveness) and those of career decision-making self-efficacy (self-evaluation, goal setting, occupational information, and problem solving) to review their mean, standard deviation, and normality.

And fourth, a correlation analysis was carried out with the components of motivation for obtaining a certificate (initiative, value, connection, and competitiveness) and those of career decision-making self-efficacy (self-evaluation, goal setting, occupational information, and problem solving) whose unidimensionality was investigated to examine multicollinearity issues and discriminant validity.

3. Results and Discussion

3.1. Sociodemographic Characteristics of the Subjects

Table 1 shows the sociodemographic characteristics of the subjects: there were more men (317) than women (83) in a ratio of 79.2:20.8; as for residence, 114(28.5%) lived in Seoul, 133(33.4%) in Gyeonggi, three (0.7%) in Gangwon, 12(3.0%) in Chungcheong, 128(32.0%) in Gyeongsang, four (1.0%) in Jeolla, three (0.7%) in Jeju, and three (0.7%) in other areas; as for educational backgrounds, 84(21.0%) graduated from high school or lower, 61(15.3%) attended college or dropped out, 219(54.8%) graduated from college, and 36(8.9%) graduated from graduate school or higher; and as for the field of work, 121(30.3%) had no job or retired, 12(3.0%) were a student, 79(19.7%) had a full-time job, 116(29.0%) had a part-time job, 48(12.0%) were self-employed, and 24(6.0%) were a housewife.

3.2. Confirmatory Factor Analysis and Reliability Analysis

The study conducted CFA based on the analy-

Table 3. Descriptive statistical analysis results

Category	Subjects	M	SD	Skewness		Kurtosis		
				Statistics	Standard error	Statistics	Standard error	
Motivation for obtaining a certificate	Competitiveness	400	2.739	1.128	0.516	0.122	-0.738	0.243
	Initiative	400	3.682	0.989	-0.759	0.122	0.112	0.243
	Value	400	3.591	1.064	-0.712	0.122	-0.061	0.243
	Connection	400	3.485	1.015	-0.760	0.122	0.110	0.243
Career decision-making self-efficacy	Self-evaluation	400	3.619	0.883	-0.461	0.122	0.068	0.243
	Goal setting	400	3.518	0.794	-0.674	0.122	1.042	0.243
	Occupational information	400	3.367	0.834	-0.476	0.122	0.279	0.243
	Problem solving	400	3.741	0.635	-1.092	0.122	2.946	0.243

sis of a measurement model in Table 2 along with a reliability analysis based on Cronbach's α values to review the questionnaire used in the study in validity and reliability. The test results produced CMIN (df) =1530.020(563), CFI=.931, TLI=.918, SRMR=.0421, and RMSEA=.066 that met the model fitness indexes proposed by the American Psychological Association (APA) including CFI (test criterion $\geq .90$), TLI ($\geq .90$), SRMR ($\leq .08$), and RMSEA ($\leq .10$). An additional analysis followed. Universal test criteria for convergent validity and reliability were met at AVE (test criterion $\geq .5$) of .714~.869, concept reliability (CR, test criterion $\geq .70$) of .891~.952, and Cronbach's α (test criterion $\geq .70$) of .851~.958. These results confirm that the questionnaire satisfied the convergent validity and reliability requirements (Bagozzi and Yi, 1988; Steiger, 1990; Schermelleh et al., 2003; Woo, 2013; Garrido et al., 2016; Bae, 2017).

3.3. Descriptive Statistical Analysis

A descriptive statistical analysis was conducted to review the mean, standard deviation, and normality of the components of motivation for obtaining a certificate (initiative, value, connection, and competitiveness) and those of ca-

reer decision-making self-efficacy (self-evaluation, goal setting, occupational information, and problem solving) whose unidimensionality was tested. Table 3 shows the analysis results including the mean (M) and Standard Deviation (SD) of each component. Under motivation for obtaining a certificate, competitiveness (M \pm SD) scored 2.739 \pm 1.128, initiative (M \pm SD) 3.682 \pm 0.989, value (M \pm SD) 3.591 \pm 1.064, and connection (M \pm SD) 3.485 \pm 1.015. Under career decision-making self-efficacy, self-evaluation (M \pm SD) recorded 3.619 \pm 0.883, goal setting (M \pm SD) 3.518 \pm 0.794, occupational information (M \pm SD) 3.367 \pm 0.834, and problem solving (M \pm SD) 3.741 \pm 0.635. That is, all of the evaluation factors for each questionnaire item showed even standard deviation for mean.

Previous studies on normality testing (Shin, 2018; West et al., 1995) reported that data normality could be assessed based on skewness of ± 2 and kurtosis of ± 7 in Structural Equation Modeling (SEM). The study examined skewness and kurtosis with SPSS based on them and found that skewness and kurtosis recorded -1.092~0.516 and -0.738~2.946, respectively. As Bae (2017) pointed out, SPSS analysis results provided kurtosis values minus 3 in advance. The study thus assessed normality by adding 3 to the

Table 4. Correlation analysis results

Category	Initiative	Value	Connection	Competitiveness	Self-evaluation	Goal setting	Occupational information	Problem solving
Initiative	1							
Value	0.507**	1						
Connection	0.568**	0.619**	1					
Competitiveness	0.290**	0.345**	0.326**	1				
Self-evaluation	0.484**	0.399**	0.412**	0.288**	1			
Goal setting	0.430**	0.333**	0.411**	0.314**	0.480**	1		
Occupational information	0.341**	0.253**	0.302**	0.325**	0.465**	0.472**	1	
Problem solving	0.378**	0.374**	0.386**	0.281**	0.534**	0.542**	0.548**	1

** $p < .01$

results. Both skewness and kurtosis met the test criteria based on the absolute value standard, thus confirming the data normality of the study.

3.4. Correlation Analysis

Table 4 shows correlations among the components tested with Pearson's correlation analysis and the resulting directionality. There were correlations intended statistically ($p < .01$) at the level of $-0.544 \sim 0.619$ as the multi-collinearity test criterion ($\leq .8$) among the subfactors of the components of motivation for obtaining a certificate (initiative, value, connection, and competitiveness) and those of career decision-making self-efficacy (self-evaluation, goal setting, occupational information, and problem solving). The results were smaller than the AVE index proposed by previous studies (Fornell and Larcker, 1981; Anderson and Gerbing, 1988), thus confirming that the discriminant validity requirement was met. The analysis results show that value had positive correlations at significance probability of 99% and confirm no significant correlations among the other factors. It was due to the exclusion of redundancy in questionnaire items among the factors.

4. Conclusion

This study was conducted to promote the understanding of landscape technicians, a professional qualification system fit for the 21st-century environment changed beyond the industrialization age, and provide basic theoretical data about multi-dimensional relations between motivation for a certificate and career decision-making self-efficacy of people with a demand for the certificate in the structural aspect. The investigators set research questions based on the consideration results of previous studies, collected data with a survey with people who were taking a course to obtain the landscape technician certificate or had such an experience, and conducted frequency, confirmatory factor, descriptive statistical, reliability, and correlation analyses with the collected data. The examination and analysis results were as follows:

First, differences according to the sociodemographic characteristics of people with a demand for the landscape technician certificate mean that there can be variations according to their diverse sociodemographic characteristics including gender, residence, educational background, and occupation. These results indicate that diverse sociocultural, physical, and envi-

ronmental characteristics can determine their motivation for obtaining a certificate and their level of career decision-making self-efficacy.

Secondly, motivation for obtaining a certificate had significant positive effects on the career decision-making self-efficacy of individuals with a demand for the landscape technician certificate in structural relations between them.

Finally, the findings about relations between motivation for obtaining a certificate and career decision-making self-efficacy demonstrate that the direction and intensity of efforts to obtain a certificate can increase the career decision-making self-efficacy of people hoping to be a landscape technician.

The findings raise a need to recognize that career decision-making self-efficacy, which represents one's own belief and conviction in his or her ability to perform a task and duty related to a career decision successfully, can change according to the direction and intensity of efforts to obtain a certificate and propose it as a means of increasing motivation for obtaining the landscape technician certificate.

REFERENCES

- Anderson, J. C., Gerbing, D. W., 1988, Structural equation modeling in practice: a review and recommended two-step approach, *Psychological Bulletin*, 103, 411-423.
- Bae, B. R., 2017, Modeling of amos 24 structural equation, Seoul: Cheongram, Seoul, Korea.
- Baek, J. H., Kim, K. S., Lee, J. K., 2012, Study on redesign of landscape architect certification requirements by utilizing ncs, *Journal of Korea Institute of landscape architecture*, 40, 129-135.
- Bandura, A., Woo, R., 1989, Effect of perceived controllability and performance standards in self-regulation of complex decision making, *Journal of Personality and Social Psychology*, 56, 805-814.
- Bagozzi, R. P., Yi, Y., 1988, On the evaluation of structural equation models, *Journal of the Academy of Marketing Science*, 16, 74-96.
- Byeon, J. S., Shin, S. H., 2009, A Human resources study of the landscape architecture industry in Korea, *Journal of Korea Institute of landscape architecture*, 37, 33-45.
- Byeon, J. H., 2020, A Path analysis of social support, career barriers, career decision-making self-efficacy and career preparation behavior among collegiate athletes, Master's Thesis, Graduate School, Seoul National University. Seoul, Korea.
- Fornell, C., Larcker, D. F., 1981, Evaluating structural equation models with unobservable variables and measurement error, *Journal of Marketing Research*, 18, 39-50.
- Garrido, L. E., Abad, F. J., Ponsods, V., 2016, Are fit indices really fit to estimate the number of factors with categorical variables? some cautionary finding via monte carlo simulation, *Psychological Methods*, 21, 93-111.
- Huh, E. J., Kim, W. S., 2003, Consumption expenditures and savings of baby boomer generation households and generation x households, *Journal of Consumption Culture*, 6, 79-97.
- Jang, H. J., Na, S. I., 2012, The causal relationships among the in-firm certificate holders' motivation for certification and the effect variables of the certification on human, *Journal of Corporate Education*, 14, 99-127.
- Ju, J. Y., 2010, The effect of baby boomers' self-efficacy and social participation on retirement preparation. Master's Thesis, Graduate School, Korea University, Seoul, Korea.
- Kang, C. M., 2021, Analysis of the structural relationship among self-leadership, college adjustment, career decision-making self-efficacy, *Journal of Career Education Research*, 34, 1-22.
- Kim, D. C., Kim, J. W., 2013, A Study on the link between career development and lifelong education, 2013 Autumn Academic Presentation Conference Paper Collection, Korean Business Education Review, Seoul, 1-22.
- Kim, J. S., 2011, The effect of locus of control and career self-efficacy on the course of retirement for baby boom generation, Master's Thesis, Graduate School, Kyonggi University, Seoul, Korea.
- Kim, M. S., 2011, Effects of holland's course group consultation program on course career maturity and course career decision-making self-efficacy of college students, Master's Thesis, Graduate School of Education, Changwon University. Changwon, Korea.
- Kim, S. P., Lee, M. S., 2016, Effects of private certificate holder's motivation for certificate affects

- career development and job satisfaction, *Journal of Korea Contents Association*, 16, 352-361.
- Kim, T. H., 2007, The relationship among career values, internal-external control and self-efficacy of career counselors, Master's Thesis, Graduate School. Hongik University. Seoul, Korea.
- Kim, Y. A., Cha, S. M., 2018, Effects of certificate holders's motivation in food service and culinary field on career development and self-efficacy: the moderating effect of qualification type, *Journal of Tourism and Leisure Research*, 30, 265-284.
- Min, H. G., 2017, Analysis of the status of landscape architectural education in specialized vocational high schools and improvement directions, Master's Thesis, Graduate School. Seoul National University. Seoul, Korea.
- Moon, E. J., 2018, Relationships of motivation factors of arcs, evaluation of ncs-babed education, career decision-making self-efficacy, and academic achievements-focused on flight cabin service education-, Ph.D. Dissertation, Graduate School, Kyunghee University. Seoul, Korea.
- Nam-Gung, M. G., 2011, Effect of motivation for choosing the teaching profession on commitment to teaching and teacher efficacy in early childhood, Master's Thesis, Graduate School. Hanyang University. Seoul, Korea.
- Park, J. H., 2011, A Study on outlet sampling to enhance accuracy of the cpi, Master's thesis, Graduate School of Public Administration, Korea University. Seoul, Korea.
- Park, S. O., 2013, A Study on how the acquisition of certification affects the rise in specialized high school students' academic self-efficacy, Master's Thesis, Graduate School, Chonnam National University. Gwangju, Korea.
- Schermelleh-Engel, K., Moosbrugger, H., Muller, H., 2003, Evaluating the fit of structural equation models: tests of significance and descriptive goodness-of-fit measures, *Methods of Psychological Research Online*, 8, 23-33.
- Shin, G. K., 2018, Modeling of SmartPLS 3.0 Structural Equation, Seoul: Cheongram. Seoul, Korea.
- Song, Y. S., 2018, The mediating impact of self-directed learning on the influence of higher education adult learners' participatory motivation on self-efficacy, *Journal of Lifelong Education*, 24, 31-55.
- Steiger, J. H., 1990, Structural model evaluation and modification: an interval EstiApproach, *Multivariate Behavioral Research*, 25, 173-180.
- West, S. G., Finch, J. F., Curran, P. J., 1995, Structural equation models with nonnormal variables: problems and remedies, Sage Publications, Inc, Thousand Oaks, California, USA.
- Wolfolk, A., 2004, Educational psycholgy, *Educational Psychology* 9, Kim Ah-Young, Foreigner, Seoul: Park Hak-Sa. Seoul, Korea.
- Woo, J. P., 2013, The concept and understanding of professor woo jong-pill's structural equation model, Seoul: Han Na-rae. Seoul, Korea.
- Yun, S. W., Kim, K. S., 2012, The effect of career self-efficacy on preparation toward retirement for baby boomer generation, *Journal of Korea Academia-Industrial*, 13, 3427-3435.
-
- Graduate Student. Iee-Chen Oh
Department of Environmental Science and Ecological Engineering Graduate School, Korea University
oic2000@nate.com
 - Professor. Yong-Jo Jung
Department of Greensmart City, Sangmyung University
smilejung@smu.ac.kr