

The Effects of Education Service Quality on Learning Outcome in the Culinary Education Facility: Application of IPA

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ABSTRACT: This article examines the effects of education service quality of culinary education facility on the learning outcome. For this, items for figuring out the relation between education service quality and the learning outcomes has been deducted through IPA regarding education service quality. Further, the factors of education service, which is for verifying the effects of relevant experiences (culinary certificate) have been examined according to advanced studies. Self administered questionnaires have been prepared by 231 samples in total and the collected data have been analyzed through frequency, factor, reliability and regression analyzing methods by using SPSS 18.0. The results from paired *t*-test performed on the importance and performance of culinary education service quality indicate that expertise, level of knowledge, education method of instructor and additional convenience facilities (locker and lounge etc) are the most important factors respectively. The results from IPA analysis show that the quadrant 1 includes knowledge level, education method, kindness of instructor. The quadrant 2 contains awareness of instructor while the third one includes culinary facility, tool structure and convenience facility. In addition the quadrant 4 includes hygiene of learning place. According to the results from hypothesis test, education service quality affects learning outcome and the experience (certificate) of learner from culinary education facility results in difference in education service quality and awareness of learning outcome therefore the hypothesis is partially verified.

Keywords: Culinary Education Facility, Education Service Quality, Learning Outcome, IPA

INTRODUCTION

Educational institution has been established to provide the publics with opportunities for learning, which is for supplementary education, acquisition of knowledge and technology for finding jobs. Further, such organization carried out all of systematic and organizational educations apart from those by which school provides. Life-long education is essential in today that knowledge and technology will change everyday after graduation as a result from the era of knowledge and information. In this perspective, educational organization reinforces continuing education. The universities of South Korea are cultivating various specialists through departments of cooking and food service every year. It is, however, difficult for the student to learn and train practical techniques by which food service industry requires. Therefore, the role of education facilities which provides enough opportunities for plentiful learning through supplementation of school curriculum, training skill manpower and satisfying desire of students for various learning is becoming more important. The education service by which education facility provide generates both tangible and intangible services for the learners to achieve their goals. Further, such organization provides psychological and phy-

sical satisfactions. The education facilities are similar to the other service industries including hotel, hospital and bank that four major characteristics of service, including intangibility, volatility, heterogeneity and simultaneity are reflected in the organizations. Furthermore, the service of education facility is difficult to be evaluated for its quality due to experiential characteristic. In addition, each person choose service for taste therefore physical environment of education service filed is essential (Zeithaml VA *et al.*, 1988). Human factor (instructor) is one who provides education service and is the main agent of interaction with students. Further, such person affects academic achievement, personality and social life of the students therefore the role and influence of instructor are more importance than those of the other service areas. Accordingly the environmental and human factors affect awareness of students on education service quality as well as academic achievement in which behavioral changes of the students after the course that these factors are very important. As shown studies on education and learning outcome are important. The majority of advances studies have focused on satisfaction and outcome including culinary practice facilities (Kim OR, 2005; Park KT & Baek JO, 2008), curriculum (Choi GH, 2008), culinary education program (Jo HH & Lim BH, 2007). These are not capable enough to examine

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the overall relation between service quality and learning outcome. Further, it seems to be studies on education service quality and learning outcome are required in perspective of learners those who take the service. In this study, in this light, the overall relation between education service quality and learning outcome has been analyzed along with examination of importance and performance of education service quality by which the learners perceive. Further, the relation between education service quality and learning outcome has been figured out for progress in the other education-related areas. In addition, the difference between experienced (certificate) and non-experienced groups for relation between educational service quality and learning outcome has been examined.

THEORETICAL BACKGROUND

Culinary Education Facility

Cooking refers to the process of making foods including trimming, boiling, steaming, frying, roasting and stirring which improves the basic characteristics of food for making appetizing foods. Therefore, culinary education can be defined as entire curriculum related to cooking irrespective of daily life and industry. Culinary education can be included in occupational or technical education unlike the general ones. Further, it is a technical education for particular area including agriculture, industry, commerce and fishing industry for learning knowledge, function and attitude to the field. The curriculum consists of experiment and practice mainly as it is for teaching and learning through practice therefore sanitation and safety should be regarded as the most important factors for effective education, appropriate physical and external environments are essential. Culinary education facility provide such service and can be classified into 4-years, 2/3 years and private educational institute according to the approval organization. Further, the organization can include college and vocational training college by which the ministry of employment of labour manage. According to theory : practice ratio, such organization can be classified into 4-years (theory-focused), 2/3 years (theory 40: practice 60), college (theory 40: practice 60), vocational training college (theory 30: practice 70) and private educational institute (theory 30: practice 70) (Kim SO, 2002). In this research, the culinary education facility has been defined as vocational training college and private educational institute as we see that such facility should not pose restriction on qualification and provide more practice than theoretical education that culinary education is a vocational one. The vocational training college is a job training facility with equipment and its instructors (job trainers) by which the ministry of employment and labour designates. The courses begin every month on regular basis through short-term courses for national scholarship and culinary certificate. The facilities include Seoul Hyundai, Culinary Institute of Korea, Korea Hotel Technical College and Korea Culinary Officer Occupational Training College which are located in Seoul. They provides nationally supported training under approval from the ministry of employment and labour. The other facilities in Seoul without the approval include Seoul, Hansol, Hana, and Hanbit culinary academies.

Education Service Quality

Education service refers to all activities provided for educational administration, school and teaching staff which are education

provider to satisfy students, parents and enterprises which are the consumers (Lee JH, 2011). That is to say, education can be seen as a service industry that it needs to satisfy the learners likewise service is for satisfaction of customers (Kim MR & Hang DS, 2005). Choi DC and Lee KH(2000) has defined education service as all activities of school (school, professor, teaching staff), which is supplier) provided to students, who are the consumers, for achieving the goal of learning through tangible and intangible services for physical and psychological satisfactions. Further, Choi GH(2005) has defined the service as tangible and intangible service related to university and students for achieving the objective of education. In this study, based on such definitions, culinary education service has been defined as tangible and intangible benefits provided to learners of culinary education facilities. In a study related to culinary education service of Korea, Kim OR (2005) has classified the factors of service quality affecting academic satisfaction of culinary education facility into four categories: environmental factors (education method, additional facilities, location, exterior, cooking tool, cooking facility, electric installation, ventilation system and environment), attitude of instructors (personal instruction, personal instruction for instructor, reflection of opinion), education service factor and additional factors. These factors have been analyzed to figure out the effects of service quality factors on overall satisfaction and retaking the course. The factors have been classified into service factors (theory/ practice, lecture contents, management of lecture, diversity of education), satisfaction with education, environmental factors (cooking facility and equipment), operation and promotion for analysis. Jang MH(2005) has analyzed culinary education service quality through instructor's administration on lecture and class, consultation with students, which are human factors such as interaction between instructor-student, physical environment, education program, operation management, promotion and parents' education (Kang KS, 2011). In addition, has classified education facility into environment, program, education facility, instructor and additional characteristics. In general, advanced studies on culinary education service examine human factor, such as speciality of instructor, physical environmental factors including cooking equipment and facility. In this study, the factors of education service quality have been classified in to human and environmental factors according to Kim OR (2005). The capability of human factor (instructor) can affect quality of education service regarding human interaction. In case of theoretical study, qualification, experience, education and the level of knowledge of instructor, who is the supplier, can affect learning outcome (Lee JA & Kim CH, 2013), personality and social life of students. Therefore, the role and influence of instructor, which are human factors of culinary education facility (Jang MH, 2005), are more important than the other education fields. The physical environments (cooking facility, equipment, safety facility, sanitation and cleanliness) by which culinary education facility needs to have for practice can influence quality awareness for education service affirmatively (Jang MH, 2005).

Learning Outcome

Learning outcome is the results from educational activity performed for achieving goal of the organization to evaluate the level of achievement of learning objective. This is evaluated focusing on visible performances including completion and employment rates.

The learning performance classification by which Bloom(1956) has proposed is used as the major index. It classifies behavioral characteristics of human into cognitive domain(intelligence, knowledge, thinking skill, creativity), affective domain (emotional status, interest, attitude, sense of value, self-concept, morality) and psychomotor domain (muscular motion, control of data and object, nerve-muscle coordination, perception speed). Lee JH(2011), in his work, has classified learning outcome perceived by students into personal and social domains. The personal one includes cognitive performance (knowledge, skill, technology), conceptual performance (sense of value, attitude, motivation, self-conception), physical performance (increased strength) and social performance which is related to social and economic achievement. Further, Park CH and Yoo YS(2006) have analyzed the factors affecting learning outcome of students by classifying factors into intelligent and functional domains. Further, they have distinguished personal self-realization, social/ cultural capital accumulation in a study on awareness of learning outcome. According to the results from analysis on the domains of learning outcome, the factors have been classified into intellectual performance (learning theoretical areas including learning related to cooking and acquisition of information by taking culinary education), functional performance (capability for using cooking tools and making dishes), psychological performance (increased confidence, self-respect and patience) functional performance for learning for practical work and social performance (finding work and foundation). In this paper, in the same manner with advanced studies, the domains of learning outcome have been classified into intellectual performance (cooking method, procedure and relevant knowledge), functional performance (difference between cooking equipments, capability of heating for cooking), social performance (pride for chef, new social relationship) and psychological performance (confidence with cooking, improved concentration).

IPA

IPA(Importance-Performance Analysis) is a analysis method based on multi-attribute model of 1970s it figures out the attributes on which the user puts importance and analysis the importance of each attribute before use. Then performance is evaluated for comparative analysis on each attribute according to both importance and performance. IPA is useful to figure out the items of which quality needs to be improved through indication of areas related to performance of the company, product, future direction and importance. Therefore, it is used for finance, service and educational training. If we apply IPA matrix for educational training, the quadrant 1 indicates attribute which needs to be continued that students think highly of evaluation items showing high level of performance and education is in good process. The quadrant 2 indicates attribute needs to be improved firstly that students think highly of evaluation items but show low level of performance. The quadrant 3 indicates attribute which does not need to be improved as students do not put importance on it showing low level of performance. The fourth quadrant indicates attribute, on which students do not put importance, is being carried out unduly. Oh H(2001) has carried out a research by applying IPA to tourism service education evaluation focusing on

expectation and performance. The results indicate that the efficient service education through IPA can play a role as the basis for providing high-quality service to customers. In this study, accordingly, students of culinary education facility has investigated importance and performance of education service quality to carry out IPA analysis. Further, we have attempted to examine methods for development and management of efficient factors of service quality of culinary education facility for the future based on the results from IPA analysis.

RESEARCH DESIGN

Research Model and Setting up Hypothesis

Fig. 1 indicates the model of hypothesis set up according to the results from advanced studies.

In this study, human and physical factors, which are the factors of service quality of culinary education, have been investigated from students of the facility. Further, we have attempted to the importance and performance of education service quality through the students. In addition, this study has been carried out to figure out if experience in taking relevant courses (culinary certificate) cause difference in groups regarding education service quality and performance. For this, Fig. 1 has been set up according to a study of Lee JA & Kim CH(2013) which examines the influence of education service quality of culinary education facility and a study carried out by Jang MH(2005) which examines that human factors (knowledge level, speciality, awareness, education method and kindness of instructor) affects education performance, personality and social life.

H1-1: Human factors of culinary facility may take positive(+) effect on intellectual/ functional performances of education.

H1-2: Human factors of culinary education facility may take positive effects on social/ psychological performances of education.

Hypothesis 2 has been set up according to a research of Kim OR(2005) which examines that physical environment (cooking facility, tool setting, sanitary and cleanliness, convenient facility), by which

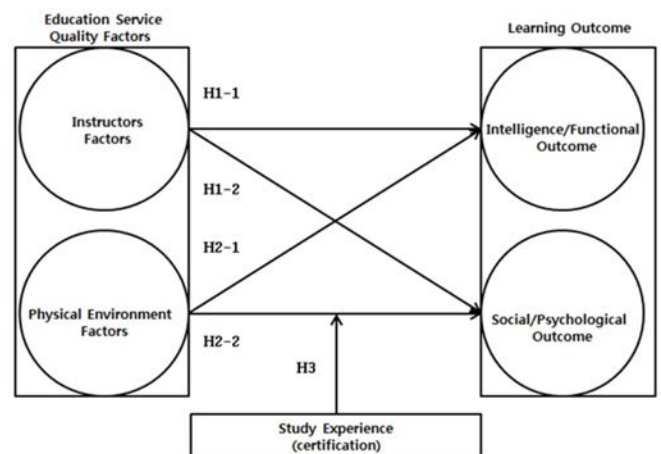


Fig. 1. Research model.

students can experience, affects the outcomes from culinary education.

H2-1: Physical environmental factors of culinary education facility may take positive effect on intellectual/ functional performances of education performance.

H2-2: Physical environmental factors of culinary education facility may take positive effect on social/ psychological performances of education performance.

Hypothesis 3 has been set up according to a study of Moon GP(2011) which examines that experiences of students in taking culinary course take significant influence on awareness of culinary education service quality and such experience (culinary certificate) reflects demands and requirements in practice therefore assure practicality, usability in labour market and consistency of contents and level between qualification of other fields. Moon has also argued that the identity of experience in taking such course facilitates interaction between qualifications therefore such experience can result in differences in awareness of education performance.

H3-1: There can be difference in awareness of education service quality according to experience in taking relevant course (culinary certificate).

H3-1: There can be difference in awareness of education service performance according to experience in taking relevant course (culinary certificate).

Constitution of Questionnaire

The factors of education service quality have been classified into human factors and physical environmental factors for questionnaire of this study based on the studies by which Jang MH(2005) and Kim OR(2005) have carried out. Further, 9 questions have been set and modified for the culinary education facility, importance of education service quality (to what extent do you think the quality of education service is important?) and performance (to what extent do you think the quality of education service provided by culinary education satisfies certain level?) have been analyzed by using Likert 7 points scale (1=not at all, 4=moderate, 7=very much). The performance of culinary education has been defined as 'outcome from culinary education'. To measure this, scale used in a study of Lee JH(2011) has been modified and eight questions (cooking method and procedure, difference in equipments, knowledge, heating work, pride, confidence, concentration, social relationship) have been measured by using Likert 7 points scale (1=not at all, 4=moderate, 7=very much). In addition, the demographic factors of respondents include gender and age. Further, the students have been asked about experiences in cooking relating to experience in taking culinary course.

Data Collection and Analysis

300 questionnaires have been distributed to students of culinary education facilities in Seoul and Gyeonggi for two weeks from 15th to 29th of April in 2013. Total 231 questionnaires have been used for analysis apart from papers with insufficient answers and inaccuracy. The collected data have been analyzed by using SPSS 18.0, experiences of students of culinary education facility in taking

relevant course and their general characteristics have been analyzed by using frequency analysis. Further, t-test has been executed to analysis differences in awareness of education service quality and performance according to experience in taking relevant course (culinary certificate). Factor analysis has been carried out on education service quality of culinary education facility by using performance score and the reliability has been measured by using Cronbach's α coefficient for coefficient internal consistency of questionnaires. The results from analysis on relation between education service quality and performance have been analyzed through regression analyzed.

RESULTS AND HYPOTHESIS TEST

General Characteristics of Respondents

The results from frequency analysis, which is for figuring out general characteristics of 231 respondents, are indicated in Table 1. The subjects consist of 60 males (29.9%), 162 females (70.1%) and the majority of them have been teenagers of which number is 78 (33.8%). Regarding experience in taking relevant course, 92 (39.8%), 62 (26.8%) and 34 (4.3%) respondents have answered 'no', 'once' and 'over 4 times' respectively.

Results from Analysis on Importance and Performance of Quality of Culinary Education Service

The relation between importance and performance of quality of culinary education service (Table 2)

For quality of culinary education service, speciality of instructor (6.26), instructor's level of knowledge (6.24), education method of instructor (6.23) and kindness of instructor (6.21) have been found to be the most important factors respectively. The important factors are concentrated on instructor's factors and his may imply that students take into account the capability of instructor for importance of quality of culinary education service. In contrast, additional convenience facilities of practice area (5.26) has exhibited relatively low average scores implying low level of awareness

Table 1. General characteristics of the subjects

Feature	Contents	N	Ratio(%)
Sex	Male	69	29.9
	Female	162	70.1
Age	10~19	78	33.8
	20~29	57	24.7
	30~39	31	13.4
	40~49	41	17.7
	50~59	21	9.1
	60~	3	1.3
Cours experience	0	92	39.8
	1	62	26.8
	2	30	13.0
	3	13	5.6
	4~	34	14.7
Total		231	100

Table 2. Cooking education service quality of the importance-performance

Contents	Importance (M±SD)	Performance (M±SD)
Utensils composition ①	6.06±1.20	5.37±1.32
Cooking facilities ②	6.00±1.14	5.23±1.37
Hygiene and sanitary ③	6.18±1.13	5.37±1.36
Convenience facilities ④	5.62±1.34	5.01±1.46
Knowledge ⑤	5.96±1.24	5.81±1.33
Professionalism ⑥	6.26±1.10	5.96±1.29
Awareness ⑦	6.23±1.10	5.85±1.42
Teaching method ⑧	6.24±1.07	5.88±1.34
Kindness ⑨	6.21±1.12	5.85±1.37

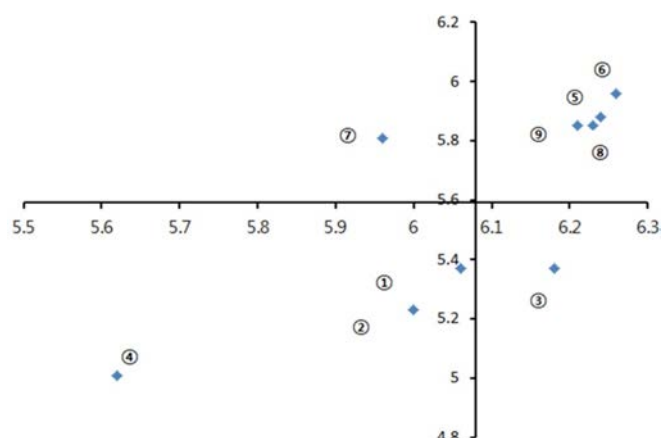


Fig. 2. Cooking education service quality of the importance-performance of the IPA matrix.

for the quality of culinary service education. Regarding performance of culinary education service quality, speciality of instructor (5.96), education method of instructor (5.59), kindness of instructor (5.85) have shown the highest scores respectively. This results is similar to that of importance. Further, additional convenience facility (5.01), contents of equipments of practice area (5.23), cooking equipments of practice area (5.37), sanitary and cleanly-

ness (5.37) have exhibited the lowest scores respectively.

Results from Factors Analysis on Culinary Education Service Quality and Analysis on Reliability

As a result from factor analysis on quality of culinary education service indicated in Table 3, two factors with over 1 eigen value including human and physical environmental factors have been deducted and the total explanation power has been 80.018%. Further, the results from reliability analysis, which is for measurement of coefficient of internal consistency, have indicated ≥ 0.9 and ≥ 0.8 Chronbach's alpha coefficient for human and physical factors respectively. Further, the physical environment one consists of four domains including 'contents of tools', 'cooking facility', 'sanitary and cleanliness' and 'additional convenient facility'.

Results from Factors and Reliability Analysis on Education Performance

As a result from factor analysis on education performance indicated in Table 4, two factors with over 1 eigen value have been deducted including intellectual/ functional factor and social/ psychological factor. Further, the total explanation power has been 83.104 %. The result from reliability analysis, which is for measuring coefficient of internal consistency, have shown that Chronbach's alpha coefficient is ≥ 0.9 for both intellectual/ functional factor and social/ psychological factor. The intellectual/ functional factors have consisted of 'understanding on cooking method and procedure', 'difference in cooking equipments', 'knowledge on cooking' and 'heating work'. In addition, the social/ psychological factor has consisted of 'pride', 'confidence', 'concentration', 'new social relationship'.

Results from Hypothesis Test

- H1-1: Human factor of culinary education facility may take positive effect (+) on intellectual/ functional performance of education performance.
- H1-2: Human factor of culinary education facility may take positive effect (+) on social/ psychological performance of education performance.

Table 3. Factor analysis and reliability analysis of educational service quality

Factor	Variable	Factor loading	Cronbach's α
Instructor factors 5.789 ^a (64.321%) ^b	Teaching method	0.908	0.956
	Professionalism	0.892	
	Knowledge	0.890	
	Kindness	0.869	
	Awareness	0.832	
Physical environment factors 1.413 ^a (15.696%) ^b	Utensils composition	0.849	0.874
	Cooking facilities	0.818	
	Hygiene and sanitary	0.816	
	Convenience facilities	0.761	

KMO=0.848 ^a eigen value ^b total explanation power.

Table 4. Factor analysis of learning outcome

Factor	Variable	Factor loading	Cronbach's α
Intelligence /functional 5.623 ^a (70.285%) ^b	Cooking methods and processes	0.886	0.939
	Cooking difference working tools	0.883	
	Knowledge of cooking	0.872	
	Heating of the cooking tasks	0.766	
Social/ psychological 1.026 ^a (12.819%) ^b	Cooking of pride	0.894	0.920
	Confidence in the cooking operation	0.870	
	Concentration of cooking training	0.835	
	Cooking new contacts	0.715	

KMO=0.845 ^aeigen value ^btotal explanation power.

Table 5. Regression results of education service quality and learning outcome (intelligence/functional)

Dependent variable	Learning outcome Intelligence /functional	B	S.E	β	t-value	p-value
Satisfaction	(Constant)	2.446	.289		8.460***	
	Instructor	0.353	.054	0.421	6.535***	0.000
	Physical environment	0.252	.061	0.268	4.154***	0.000
$R^2=0.618$, Adjusted $R^2=0.381$, F -value=70.277 (p -value=0.000***)						

*** $p < 0.001$, S.E: standardized error.

In case of hypothesis 1-1, the quality of education service has been set as taking positive (+) effect on intellectual. functional performance and the standardized coefficient between the two factors has been 0.421 ($t=6.535$, $p < 0.001$). Therefore, hypothesis 1-1 has been verified. In case of hypothesis 1-2, physical environmental factors of education service quality has been set as taking positive effect on social/ psychological performance and the standardized coefficient between two factors has been 0.325 ($t=5.257$, $p < 0.001$) therefore hypothesis 1~2 has been verified (Table 5).

H2-1: Physical environmental factor of culinary education facility may take positive(+) effect on intellectual/ functional performance of education performance.

H2-2: Physical environmental factors of culinary education facility may take positive (+) effect on social/ psychological performance of education performance.

In case of hypothesis 2-1, physical environmental factor of education service quality has been set as taking positive (+) effect on intellectual/ functional performance of education performance and the standardized coefficient between two factors has been 0.268($t=4.154$, $p < 0.001$). Therefore, hypothesis 2-1 has been verified. In case of hypothesis 2-2, human factors of education service quality has been set as taking positive (+) on social/ psychological performance and the standardized coefficient between two factors has been 0.409($t=6.619$, $p < 0.001$). Therefore, hypothesis 2-2 has been verified (Table 6).

H3-2: There can be difference in awareness of education performance according to experience in taking relevant course (culinary certificate).

Hypothesis 3-2 has been set as 'there can be difference in awareness of education performance according to experience in taking relevant course (culinary certificate). Parts of the hypothesis has been verified that social/ psychological performance (high-level group 5.67 ± 1.10 , low-level group 5.23 ± 1.11) only indicates high level of certificate of high-level group. Social/ psychological performance has exhibited significant difference at $p < 0.01$ (Table 7).

The results from IPA indicate that instructor's level of knowledge, speciality of instructor, education method, kindness of quadrant 1 exhibit high level of importance with the most appropriate relation therefore need to be maintained. Further, awareness of instructor exhibits lower level of satisfaction than importance therefore students put importance on it. However, it has been found to be an item which needs efforts on better satisfaction. The cooking facility of practice area, utensil configuration, convenience facility of practice area of quadrant 3 have exhibited low level of awareness of students as well as low level of importance therefore more efforts are not required. In addition, sanitation and cleanliness of practice area, which are located in quadrant 4, have exhibited low level of importance but high level of satisfaction and efforts of administrator and staff of culinary education facility are concentrated on these factors. Therefore further efforts are not required.

Table 6. Regression results of education service quality and learning outcome (social/psychological)

Dependent variable	Learning outcome	B	S.E	β	t-value	p-value
	Social/ psychological					
Satisfaction	(Constant)	1.593	0.298		5.346***	
	Instructor	0.369	0.056	0.409	6.619***	0.000
	Physical environment	0.329	0.063	0.325	5.257***	0.000
$R^2=0.656$, Adjusted $R^2=0.430$, F -value=85.950 (p -value=0.000***)						

*** $p < 0.00$.

Table 7. Difference analysis results of education service quality and learning outcome by certificate

Dependent variable	Independent variable	Certification (×)	Certification(○)	t-value	p-value
		(M±SD) (N=139)	(M±SD) (N=90)		
Educational service quality	Physical environment	5.00±1.03	5.29±1.21	-1.942	.053
	Instructor	5.67±1.31	5.99±1.13	-1.911	0.057
Learning outcome	Intelligence /functional	5.69±1.07	5.91±1.00	-1.558	0.121
	Social/psychological	5.23±1.11	5.67±1.10	-2.932**	0.004

** $p < 0.01$.

SUMMARY AND CONCLUSION

In this study, items for analysis have been deducted through IPA performed by students of culinary education facility on education service quality. The objective has been to figure out relation between education service quality and performance as well as to figure out if there is difference in the two factors according to experience in taking relevant course (culinary certificate). The results from this study are as follows. Firstly, speciality of instructor, which is human factor of education service quality of culinary education facility, is the most important factor followed by level of knowledge of instructor, education method of instructor, additional convenient facility (locker, lounge) respectively. Accordingly, human factor of education service quality needs to be considered firstly. Secondly, human factor takes more significant effect on education performance compared to physical environmental factor of education service quality of culinary education facility. Through these, the administrators of education facility needs to realize the importance of human factor. Further, they need to utilize such factors as a critical marketing tool for selection of instructor by application of more systematic criteria. In addition, they need to consider support for human factors through training program for developing capability of instructor and incentive system. Thirdly, there have been group differences between physical environmental factor and social/ psychological education performance in accordance with experience in taking courses (culinary certificate) from culinary education facility. Especially, the students with culinary certificate have exhibited higher level of awareness on education performance than the ones without the

certificate. This may imply the needs of learning environment which helps acquisition of culinary certificate and maintaining continuous program for students. The results from IPA indicate that instructor's level of knowledge, speciality of instructor, education method, kindness need to be maintained and the awareness of instructor needs to be improved and developed. This study is limited in its scope for the following reasons. Firstly, the interests in technology education for culinary service industry are increasing but there are not sufficient empirical studies on education facilities. Further, there are no definition of education service quality of culinary education facility and theoretical framework which has been set through systematic measurement tool. Secondly, the samples of this study, of which number is 231, have been restricted to students of culinary education facilities in Seoul and Gyeonggi only. Furthermore, the age of majority of them have been between 10 and 20 years old therefore it has been difficult to generalize the results from this research. Especially, teenagers have been found to be limited to analyze questionnaires on education performance, which has been measured as the final dependent variable as they have insufficient experience in culinary education. To overcome such limitation, hereafter studies need to be carried out with more various age group. Finally, this study has focused on culinary education only but there needs to be follow-up studies carried out on other fields of culinary industry.

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