The Effect of Undergraduate Medical Education Accreditation on Service Quality, Student Satisfaction and Loyalty: Mediterranean Region Example

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Abstract

The direct or indirect (through student representatives) participation of medical students in the management processes of medical education is one of the most important factors that increase the quality of education. It is necessary to get and measure student feedback on the quality of education service and to take remedial measures within the framework of the measurement results. The aim of this study is to investigate the relationship between undergraduate medical education accreditation program and medical school students' perceived service quality, student loyalty and student satisfaction. Third term students (n=484) studying at four medical faculties in Çukurova Region (two of them have undergraduate medical education program accreditation certificate) in the 2018-2019 academic year were included in the study. As a data collection tool; Service Quality Scale in Higher Education, Student Loyalty Scale and Student Satisfaction Scales were used. The descriptive statistics, reliability test statistics, univariate and multiple analysis were used in data analysis. The service quality, satisfaction and loyalty scores of medical faculties with undergraduate medical education program accreditation were observed statistically significantly higher than those without. Statistically significant and positive relationships were determined between the satisfaction scale and service quality scale with its sub-dimensions, loyalty scale and its sub-dimensions in medical faculties that have undergraduate medical education program accreditation. This research draws attention to the contribution of accreditation of undergraduate medical education programs in medical education to total quality management.

Key Words: Quality in higher education, accreditation, quality, loyalty, satisfaction

Tıp Eğitimi Akreditasyonunun Hizmet Kalitesi, Öğrenci Memnuniyeti ve Sadakati Üzerine Etkisi: Akdeniz Bölgesi Örneği

Öz

Tıp öğrencilerinin, tıp eğitimi yönetim süreçlerine direkt veya indirekt (öğrenci temsilcilikleri aracılığıyla) katılımı eğitimin kalitesini artıran en önemli etkenlerden birisidir. Sunulan eğitim hizmetinin kalitesi ile ilgili, öğrenci geribildirimlerinin alınması, ölçülmesi ve ölçüm sonuçları çerçevesinde iyileştirici önemlerin alınması gerekir. Bu araştırmanın amacı, mezuniyet öncesi tıp eğitimi akreditasyon programının, tıp fakültesi öğrencilerinin algıladıkları hizmet kalitesi, öğrenci sadakati ve öğrenci memnuniyeti arasındaki ilişkiyi araştırmaktır. Çalışmaya, 2018-2019 eğitim-öğretim yılında, Çukurova Yöresindeki (ikisi mezuniyet öncesi tıp eğitimi program akreditasyon belgesine sahip) dört tıp fakültesinde öğrenim gören üçüncü dönem öğrencileri (n=484) dahil edilmiştir. Araştırmada veri toplama aracı olarak; Yükseköğretimde Hizmet Kalitesi Ölçeği, Öğrenci Sadakati Ölçeği ve Öğrenci Memnuniyeti Ölçekleri kullanılmıştır. Veri analizinde tanımlayıcı istatistikler, güvenirlilik test istatistikleri ve korelasyon analizi kullanılmıştır. Mezuniyet öncesi tıp eğitimi program akreditasyonuna sahip olan tıp fakültelerinin hizmet kalitesi, memnuniyet ve sadakat puanları sahip olmayanlara göre istatistiksel olarak anlamlı derecede daha yüksek gözlenmiştir. Mezuniyet öncesi tıp eğitimi

program akreditasyonuna sahip olan tıp fakültelerinin, memnuniyet ölçeği ve alt boyutları ile hizmet kalitesi ölçeği, sadakat ölçeği ve bunlara ait alt boyutlar arasında istatistiksel olarak anlamlı, pozitif yönlü ilişkiler tespit edilmiştir. Bu araştırma, tıp eğitiminde mezuniyet öncesi tıp eğitimi programlarının akredite olmasının toplam kalite yönetimine olan katkısına dikkat çekmektedir.

INTRODUCTION

Focusing on the diagnosis and treatment of diseases with traditional medical education approaches has revealed a specialist-oriented education system model rather than society-oriented (Murray et al., 2012). Recently, due to the problems brought by the traditional medical education model, many countries have been involved in accreditation and standardization processes in order to improve their medical education programs and service quality (Bandiera et al., 2020).

The World Federation for Medical Education (WFME) recommends that medical faculties with Undergraduate Medical Education Program Accreditation Certificate (UMPAC) be evaluated under nine main headings in order to ensure the global standards of graduate medical education quality in the world (WFME, 2021). In Turkey, UMPAC studies are carried out through The Association of Medical Education Programs Evaluation and Accreditation, which was accredited by WFME between 2013-2023 and accepted by the Higher Education Quality Board in Turkey (TEPDAD, 2021). In providing these standards required for UMPAC; service quality perception (PSQ), student loyalty (SL) and student satisfaction (SS) are important (Masic, 2013).

When evaluated in terms of educational institutions, satisfaction; It is a concept related to how educational experiences and results are perceived by students. While universities aim for success, they should strive to maximize student satisfaction by considering their students as key stakeholders of higher education and giving importance to their opinions (Alves and Raposo, 2007). Loyalty can be defined as a strong desire to be a part of something, being ready to contribute by giving something of oneself. For adapting to this change, higher education institutions should be able to train students and graduates with high level of loyalty to the university, direct the policies that ensure loyalty and evaluate the variables that emerge as a result of loyalty effectively (Shahsavar and Sudzina, 2017). In order to determine the difference between students' expectations and perceived service quality and to increase the quality of medical education, it is necessary to measure and evaluate the perceived service quality as well as student satisfaction and loyalty (Lee et al., 2000).

This research aims to compare the satisfaction, loyalty and service quality evaluations of students studying in medical faculties with and without UMPAC.

METHODS

Population and Sample of the Study

The universe of the research consists of 883 students studying in the third term of four medical faculties, two of which have UMPAC (accredited), located in the Mediterranean Region in the 2018-2019 academic year. The sample of the study was determined by random sampling method. Sample volume formulas "n=[n0/(1+(n0/N))]" ve "n0= [t*S) /d]2" were used to determine the sample size. Ethical Approval for the study was obtained from the Near East University Scientific Research Ethics Committee with the project number NEU/SB/2018/195 dated 16th October 2018.

Statistical Analysis

Normality control of continuous variables was evaluated with the Shapiro Wilk test. Parametric tests were used in the analysis of the data as the variables were suitable for normal distribution. Student's t test was used to compare the means of the scales according to the accredited and non-accredited groups. Linear relationships between scales were expressed with the Pearson correlation coefficient. Multiple Linear Regression Analysis was applied to examine the effect of loyalty and service quality on satisfaction. Chi-square test was used in the analysis of categorical data. Data analysis was done in IBM SPSS 21 program.

Data Collection Tools

As a data collection tool; Service Quality Scale in Higher Education (PSQ), Student Loyalty Scale (SLS) and Student Satisfaction Scale (SSS) were used.

Service Quality Scale in Higher Education

In higher education institutions, HEdPERF scale was developed by Firdaus in 2005 as a comprehensive scale for determining PSQ and based on performance (Abdullah, 2005). The scale consists of 41 questions and students are asked to evaluate the questions in question on a 7-point Likert type scale. The sub-dimensions of the scale consist of "administrative aspect of the institution", academic aspect of the institution, "image of the institution", "accessibility", "diploma programs" and "physical facilities of the institution". The Turkish adaptation of the scale was made by Bektaş and Ulutürk Akman in 2013 (Bektaş and Akman, 2013). In this study the Cronbach Alpha coefficient was found.86 for total service quality.

Student Loyalty Scale

The SLS was developed by Çalık Var, as a three-dimensional scale consisting of 40 items in order to determine the loyalty of students to their universities. The first dimension is called "organizational identification", the second dimension is "dedication", and the third dimension is "stability". In the third sub-dimension, the statements of recommending the university to others, choosing again and maintaining relationships after graduation determine the stability of the concept of student loyalty over time (Çalık Var, 2013).

The Cronbach Alpha coefficient was calculated to evaluate the internal consistency of the items forming the scale. It was determined as .94 for the whole scale, .92 for the identification sub-dimension, .88 for the self-devotion sub-dimension, and .84 for the stability sub-dimension[11]. In this study, it was determined that it was .93 for the SLS, 0.81 for .82 for the identification sub-dimension, the self-devotion sub-dimension, and .93 for the stability sub-dimension.

Student Satisfaction Scale

In this study, the "higher education quality qualifications evaluation and student satisfaction scale", which was prepared by Karahan M et al. was used. The validity and reliability studies were carried out. This scale, which was found to be 0.97 as a result of Cronbach Alpha reliability calculation, was prepared as a 5-point Likert type with 26 items. The sub-dimensions of this scale were formed to include the possibilities that create a positive education atmosphere, the opportunities that create a positive living atmosphere, education programs and teaching, measurement and evaluation expressions (Karahan, 2013).

RESULTS

265 (54.8%) of 484 medical students participating in the study are female and 219 (45.2%) are male. There was no significant difference in terms of age, grade average, gender distribution and marital status distribution of the students (p>0.05). (Table 1)

Table 1. Socio-Demographic Distribution of the Medical Students

	Accredited (n:331)		Not- Accredited (n:153)		
	Mean±SD	Min-Max	Mean±SD	Min-Max	p1
Age	21.1±2.27	2-47	21.39±1.92	18-37	0.182
Grade average	68.34±8.46	40-89	68.57±7.44	52-90	0.780
	n	**%**	**n**	**%**	**p2**
Female	180	54.4	85	55.6	0.809
Male	151	45.6	68	44.4	

p1:Student's t test, p2:Chi-Square test

Table 2. Evaluation of Satisfaction, Service Quality and Loyalty Status According to Sub-Dimensions in Accredited and Non-Accredited Medical Faculties

	Accredited (n:331)		Not accredited (n:153)		
	Mean±SD	Min-Max	Mean±SD	Min-Max	p
Total service quality	86.46±16.58	31-135	78.02±14.85	42-107	**<0.001**
Administrative aspect of the institution	31.50±7.77	10-63	28.15±8.00	10-46	**<0.001**
Academic aspect of the institution	21.56±3.90	6-30	21.08±3.71	11-29	0.210
Image of the institution	8.32±3.08	3-15	6.81±2.77	3-14	**<0.001**
Accessibility	9.10±2.43	3-15	8.84±2.35	3-15	0.282
Diploma programs offered by the institution	9.801±3.20	3-41	7.99±2.68	3-15	**<0.001**
Physical facilities of the institution	9.21±2.67	3-15	7.38±3.26	3-15	**<0.001**
Total Satisfaction	85.95±16.82	27-135	75.67±13.91	35-108	**<0.001**
Positive education atmosphere	19.25±4.24	6-30	15.53±3.63	6-24	**<0.001**
Positive living atmosphere	17.99±4.73	6-30	15.88±3.71	7-25	**<0.001**
Education programs and teaching	33.43±7.35	10-50	29.67±6.65	12-47	**<0.001**
Assessment and evaluation	15.27±4.57	5-47	14.59±3.61	5-25	0.107
Total Loyalty	71.08±17.08	24-124	62.69±15.09	24-96	**<0.001**
Organizational identification	37.98±9.57	12-60	34.86±9.84	12-64	**0.001**
Stability	16.85±4.41	6-30	13.65±3.74	6-24	**<0.001**
Dedication	16.25±5.56	6-72	14.18±3.96	6-24	**<0.001**

p: Student's t test

Table 2 shows that the PSQ, SL and SS mean scores of accredited medical faculties are statistically higher than those without. (p<0.05).

In addition, when the sub-dimensions of service quality are evaluated, "Administrative aspect of the institution", "image of the institution", "diploma programs offered by the institution" and "physical facilities of the institution" were found to be higher in accredited medical faculties (p<0.05). The "academic aspect of the institution" and "accessibility" scores do not differ according to the accreditation status. (p>0.05)

In the evaluation made according to the sub-dimensions of satisfaction, "opportunities creating a positive educational atmosphere", "opportunities creating a positive living environment" and "education programs and teaching" were found to be significantly higher in accredited medical faculties compared to non-accredited medical faculties (p<0.05). There was no significant difference in the scores obtained for the "evaluation" sub-dimension (p>0.05).

When the sub-dimensions of the loyalty scale are compared, the scores of "organizational identification", "stability" and "dedication" were found to be higher than those in accredited medical faculties, and the difference was statistically significant (p<0.05).

Table 3. The Relationship Between Satisfaction and Service Quality and Loyalty in Accredited and Non-Accredited Medical Faculties

	Accredited (n:331)				Not accredited (n:153)			
	TS	PEA	PLA	EPT	**TS**	PEA	PLA	EPT
Total Service Quality	.663**	.668**	.544**	.506**	.693**	.665**	.422**	.583**
Administrative aspect of the institution	.527**	.557**	.402**	.417**	.406**	.535**	.257*	.234*
Academic aspect of the institution	.536**	.519**	.484**	.425**	.537**	.365**	.250**	.565**
Image of the institution	.418**	.460**	.343**	.271**	.388**	.422**	.263*	.300**
Accessibility	.529**	.499**	.443**	.410**	.558**	.497**	.328**	.499**
Diploma programs offered by the institution	.458**	.425**	.392**	.318**	.631**	.525**	.451**	.596**
Physical facilities of the institution	.478**	.457**	.390**	.392**	.466**	.280**	.281**	.480**
Assesment and evaluation	.767**	.430**	.411**	.620**	.748**	.455**	.379**	.562**
Total Loyalty	.500**	.535**	.491**	.317**	.498**	.469**	.132	.494**
Organizational identification	.472**	.512**	.433**	.319**	.389**	.358**	.065	.416**
Stability	.454**	.475**	.456**	.276**	.492**	.464**	.177*	.471**
Dedication	.363**	.385**	.402**	.206**	.467**	.462**	.172*	.405**

p:Pearson Correlation (*p<0.05, **p<0.001) (TS: Total Satisfaction, PEA: Positive education atmosphere, PLA: Positive living atmosphere, EPT: Education programs and teaching)

Statistically significant and positive relationship were found between the SSS (with its all sub-dimensions) and the PSQ and SLS (with their sub-dimensions) in accredited medical faculties (p<0.05). In non-accredited medical faculties, however, no statistically significant linear relationship was observed between the sub-dimension of SSS ''positive living atmosphere'' total score and -the loyalty score and its sub-dimension- ''organizational identification'' (p>0.05). (Table 3)

Table 4. The Effect of Loyalty and Service Quality on Satisfaction

	Unstandardized Coefficients		Standardized Coefficients	95,0% Confidence Interval for B		t	p	
	B	Std. Error	Beta	Lower Bound	Upper Bound			
Accredited								
(Constant)	26.141	3.733		18.797	33.485	7.002	**<0.001**	R^2:0.448 p<0.001
Total Loyalty	0.121	0.053	0.123	0.017	0.225	2.287	**0.023**	
Total Service Quality	0.592	0.055	0.584	0.485	0.699	10.863	**<0.001**	
Not accredited								
(Constant)	19.778	4.478		10.931	28.625	4.417	**<0.001**	R^2:0.519 p<0.001
Total Loyalty	0.206	0.059	0.223	0.089	0.322	3.479	**0.001**	
Total Service Quality	0.551	0.060	0.588	0.433	0.670	9.180	**<0.001**	

p:Multiple Linear Regression

In accredited medical faculties, there is an increase of 0.121 units in the SSS score with an increase of 1 unit in the SLS score, and an increase of 0.592 units with an increase of 1 unit in the PSQ (p<0.05). 44.8% of PSQ, SL and SS were explained (p<0.001). (Table 4)

In non-accredited medical faculties, there is an increase of 0.206 units in the SSS score with an increase of 1 unit in the SLS score, and an increase of 0.551 units with an increase of 1 unit in the PSQ score (p<0.05). 51.9% of PSQ, SL and SS were explained (p<0.001). (Table 4)

DISCUSSION AND INTERPRETATION

According to the results of the research conducted by Yousapronpaiboon on 350 undergraduate students studying at a private university in Thailand using the SERVQUAL scale, it is stated that the quality of higher education is below the level expected by the students and is at a moderate level, and it is suggested that institutions should make serious improvements, especially in the dimensions of enthusiasm and physical facilities (Yousapronpaiboon, 2014). In a similar study using the same scale on 419 students, who are mainly studying finance and banking on this subject, the PSQ was found to be above the moderete level (Maksüdünov et al., 2016). In our study; The HEdPERF scale, which is more comprehensive in determining PSQ and is based on performance, was used as a measurement tool, and the PSQ of the third-term medical students was evaluated and the PSQ was found to be statistically significantly higher in medical faculties with UMPAC than those without.

In the study conducted on 567 students (18 medical students) studying at all faculties of Düzce University, SL was found to be moderate in general among higher education students. In this study, it is reported that PSQ, SL and SS affect each other (Öztürk and Emel, 2020). In our study; PSQ, SLS and SSS scores were observed to be higher than those without UMPAC.

Douglas et al., in a study conducted at the school of business and law in England, concluded that the reason for their weak SD was related to learning and teaching rather than physical facilities (Douglas et al., 2006). In our study, unlike this, no statistically significant difference was found between the "academic aspect of the institution" and "accessibility" scores between those with and without

UMPAC. However, the evaluation of "physical facilities of the institution" was observed to be higher than those who do not have UMPAC.

Lin and Tsai determined that PSQ affected SL (Lin and Tsai, 2008). Similarly, Hennig-Thurau et al. determined that the relationship between SL and PSQ variables affected trust in university and emotional commitment to the institution. However, it was determined that there was a strong relationship between PSQ and students' emotional commitment to their university, and that there was a direct and moderate relationship between trust and SL (Hennig-Thurau et al., 2001). Also, the positive effect of SS on SL is reported (Clemes et al., 2008). In a study conducted with the participation of 100 undergraduate students at Utara University in Malaysia, the role of PSQ on SL was examined and to determine the PSQ; the feedbacks of the students were gotten about the education and training services of the university, campus, the places where social and sports activities are held, transportation and information services. As a result of the study, it was determined that PSQ was associated with SL and SS (Chuah and Sri Ramalu, 2011). In our study, statistically significant and positive relationship were found between the all scales and their sub-dimensions in accredited medical faculties.

In order to increase the total service quality in medical education, it is desired to draw attention to the contribution of student feedback to quality in educational decision processes, the necessity of periodic academic studies on this subject, and the contribution of having UMPAC in medical faculties to total quality management.

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Appendix

Annex 1: Service Quality Scale in Higher Education

	Factor 1- Administrative Aspect of the Institution	I absolutely agree	I agree	I partially agree	I disagree	I never agree
1.	Communication of administrative staff with students is at a good level.	☐	☐	☐	☐	☐
2.	Administrative staff have a positive attitude towards students.	☐	☐	☐	☐	☐
3.	Administrative staff deal with students' questions / complaints effectively and on time.	☐	☐	☐	☐	☐
4.	Administrative staff fulfills their promise to the student on time.	☐	☐	☐	☐	☐
5.	Administrative staff show attentive and individual attention to students.	☐	☐	☐	☐	☐
6.	The administrative staff has sufficient knowledge of the procedure in their field of duty.	☐	☐	☐	☐	☐
7.	Administrative staff are never too busy to respond to students' requests.	☐	☐	☐	☐	☐
8.	Administrative units keep students' records and information accurate and accessible.	☐	☐	☐	☐	☐
9.	When the student has a problem, the administrative staff shows a genuine interest in solving the problem.	☐	☐	☐	☐	☐
10.	Administrative staff treat students indiscriminately and respectfully.	☐	☐	☐	☐	☐
	Factor 2 - Academic Aspect of the Institution					
11.	Research assistants have a positive attitude towards students.	☐	☐	☐	☐	☐
12.	Research assistants have a good command of the subjects they will tell in practice lessons and are willing to lecture.	☐	☐	☐	☐	☐
13.	The lecturer has enough knowledge to answer my questions about the course.	☐	☐	☐	☐	☐
14.	The lecturer approaches the student in a courteous and respectful manner.	☐	☐	☐	☐	☐

15.	In-class communication of the instructor with the students is sufficient.	☐	☐	☐	☐	☐
16.	The lecturer is quite knowledgeable and experienced in his/her field.	☐	☐	☐	☐	☐

Factor 3 - Image of the Institution

17.	If I had the chance to choose a university once more, I would choose Çukurova University again.	☐	☐	☐	☐	☐
18.	I recommend my university to others.	☐	☐	☐	☐	☐
19.	The service I received from my university has completely fulfilled my expectations.	☐	☐	☐	☐	☐

Factor 4 - Accessibility

20.	The faculty member can spare enough time to guide the students.	☐	☐	☐	☐	☐
21.	The lecturer provides feedback on the development process of my knowledge and skills (my performance).	☐	☐	☐	☐	☐
22.	The lecturer shows a sincere attitude to solve when I have a problem.	☐	☐	☐	☐	☐

Factor 5 - Diploma programs offered by the institution

23.	Many and varied specialist programs are offered at my university.	☐	☐	☐	☐	☐
24.	My university offers programs with a flexible curriculum structure.	☐	☐	☐	☐	☐
25.	My university offers highly respected degree programs.	☐	☐	☐	☐	☐

Factor 6 - Physical facilities of the institution

26.	My university has student dormitories and they are sufficient.	☐	☐	☐	☐	☐
27.	The university's social facilities are suitable and sufficient for the use of students.	☐	☐	☐	☐	☐
28.	The academic facilities of the university (classrooms, laboratories, conference halls, etc.) are sufficient.	☐	☐	☐	☐	☐

Annex 2: Student Loyalty Scale

		I absolutely agree	I agree	I partially agree	I disagree	I never agree
1.	When someone criticizes the university where I was studying, I am impressed as if this criticism were made personally.	☐	☐	☐	☐	☐
2.	I'm very interested in other people's opinions about my university.	☐	☐	☐	☐	☐
3.	When I talk about my university, I usually use the expression "our university".	☐	☐	☐	☐	☐
4.	I also benefit myself from the success of my university.	☐	☐	☐	☐	☐
5.	When someone praises the university where I was studying, I would be very proud of it personally.	☐	☐	☐	☐	☐
6.	If this university were criticized in a news report, I would be ashamed of it.	☐	☐	☐	☐	☐
7.	If I am going to take advanced courses for my personal and professional development in the future, I would prefer to take it from my own university.	☐	☐	☐	☐	☐
8.	If I want to continue my postgraduate education, my first choice will be my own university.	☐	☐	☐	☐	☐
9.	I would like my child to study at the university where I studied.	☐	☐	☐	☐	☐
10.	If it were possible, I would like to transfer to another university.	☐	☐	☐	☐	☐
11.	I also recommend my university to others.	☐	☐	☐	☐	☐
12.	If I had the chance to choose again, I would prefer the same university again.	☐	☐	☐	☐	☐
13.	I attend events organized by the university.	☐	☐	☐	☐	☐
14.	If anyone detracts from my university, I will defend my university immediately.	☐	☐	☐	☐	☐
15.	If the university where I am studying is treated unfairly, I will start to defend the rights of my university.	☐	☐	☐	☐	☐
16.	I try to evaluate the events from the perspective of my university in order to protect the interests of the university where I am studying.	☐	☐	☐	☐	☐
17.	I support the university where I am studying in all circumstances.	☐	☐	☐	☐	☐
18.	Even if I get better offers, I would rather work at my own university.	☐	☐	☐	☐	☐
19.	I would like to work for my university, whether I have a personal gain or not.	☐	☐	☐	☐	☐

		I absolutely agree	I agree	I partially agree	I disagree	I never agree
20.	I use items bearing the logo or symbols of my university.	☐	☐	☐	☐	☐
21.	The achievements of my university are my achievements.	☐	☐	☐	☐	☐
22.	When people criticize my university, I try to answer them on behalf of my university.	☐	☐	☐	☐	☐
23.	When a graduate of our university achieves a national or international success, I am also positively affected by it.	☐	☐	☐	☐	☐
24.	While I introduce myself in any setting, I proudly state the university I studied at.	☐	☐	☐	☐	☐

Annex 3: Medical Faculty Satisfaction Survey

	A- Opportunities Creating a Positive Education Atmosphere	I absolutely agree	I agree	I partially agree	I disagree	I never agree
1.	Management is sensitive to students' problems and suggestions.	☐	☐	☐	☐	☐
2.	Student representatives are on the boards.	☐	☐	☐	☐	☐
3.	Administrative staff has positive attitudes towards students.	☐	☐	☐	☐	☐
4.	I can easily reach my Term Coordinator (Advisor) and get answers to my questions.	☐	☐	☐	☐	☐
5.	Technological facilities and laboratories (skill lab, computer lab, multidisciplinary lab) are sufficient for practical courses.	☐	☐	☐	☐	☐
6.	In general, I am satisfied with my Faculty.	☐	☐	☐	☐	☐