



# The Effect of Social Intelligence Levels on Decision-making Styles: A Research in Turkish Healthcare Managers

## Sosyal Zekanın Karar Verme Tarzı Üzerindeki Etkisi: Türk Sağlık Yöneticileri Üzerinde Bir Araştırma

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### ABSTRACT

**Objective:** There is little information about the influence of social intelligence on decision making. The nature of decision-making is complex. Many factors influence it. Identifying these factors is important for making effective decisions. Social intelligence is an important factor which can influence decision-making style. This study was conducted to determine the effect of the social intelligence of healthcare managers on their decision-making style.

**Methods:** A cross-sectional study was conducted with 170 healthcare managers (physician, nurse, and administrative manager) from three public hospitals in Turkey. The analysis of the data was done by using SPSS 26 package program. In order to determine the relationships and effects between the variables, independent t-test, analysis of variance and simple linear regression analysis were performed.

**Results:** The findings showed that the social intelligence of healthcare managers had a significant positive effect on rational decision-making style and a significant negative effect on dependent and avoidant decision-making style. Whereas healthcare managers with high social intelligence adopted rational style more in decision-making, they adopted dependent and avoidant style less.

**Conclusion:** Rational decision-making is the most promising, functional and effective decision-making style for physician, nurse and administrative managers in the healthcare industry which includes intensive complexity. Social intelligence is an important concept for healthcare managers considering effective decision-making in the quality of patient care, outcomes, and managerial

### ÖZ

**Amaç:** Literatürde sosyal zekanın karar verme tarzı üzerindeki etkisi hakkında çok az bilgi vardır. Karar verme doğası gereği karmaşık bir süreci ifade eder ve üzerinde birçok faktör etkilidir. Etkili kararlar almak için bu faktörlerin belirlenmesi önemlidir. Sosyal zeka da, karar verme tarzını etkileyebilecek önemli bir faktördür. Bu araştırma, sağlık yöneticilerinin sosyal zekalarının karar verme tarzları üzerindeki etkisini belirlemek amacıyla yapılmıştır.

**Yöntemler:** Araştırma kapsamında, üç kamu hastanesinden 170 sağlık yöneticisi (hekim, hemşire ve idari yönetici) ile kesitsel bir çalışma yürütülmüştür. Verilerin analizi SPSS 26 paket programı ile yapılmıştır. Değişkenler arasındaki ilişkileri ve etkileri belirlemek için varyans analizi ve bağımsız t-testi ve çoklu doğrusal regresyon analizi kullanılmıştır.

**Bulgular:** Bulgular, sağlık yöneticilerinin sosyal zekasının rasyonel karar verme stili üzerinde anlamlı pozitif etkiye, bağımlı ve kaçınan karar verme stili üzerinde ise anlamlı negatif etkiye sahip olduğunu göstermiştir. Sosyal zekası yüksek sağlık yöneticilerinin, rasyonel karar verme tarzı yüksek iken, bağımlı ve kaçınma karar verme tarzı düşüktür.

**Sonuç:** Rasyonel karar verme, yoğun ve karmaşıklık içeren sağlık sektöründe hekim, hemşire ve idari yöneticiler için en umut verici, etkili ve işlevsel karar verme tarzı olarak görülmektedir. Sosyal zeka, hasta bakımının kalitesi, sonuçları ve yönetsel kararlarda etkili kararlar vermeyi düşünen sağlık yöneticileri için önemli bir kavramdır. Sosyal zekası yüksek sağlık yöneticilerinin rasyonel karar verme eğilimleri de yüksektir.

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decisions. Healthcare managers with high social intelligence also tend to make rational decisions.

**Keywords:** Social intelligence, decision-making, physician executives, nurse administrators, health facility administrators

**Anahtar Sözcükler:** Sosyal zeka, karar verme, hekim yöneticiler, hemşire yöneticiler, sağlık tesisi yöneticileri

## Introduction

A manager is a person who is given humane and physical resources and expected to use these resources to achieve certain goals. Works will be done by using resources and the objectives of the organization will be accomplished. The manager has to choose among a variety of works (alternatives). The chosen alternative reflects the decision of the manager (1, p.133-134). Decision-making is so important for management work that it is called the heart of management. Therefore, decision-making is the primary duty of the management (2).

Patient care and operation management require the interaction of multiple shareholders. For example, physicians, nurses, lower-middle-senior managers give clinical (e.g. treatment, diagnosis and drug prescription) and non-clinical (e.g. resource allocation, budget, technology achievement, service arrangement, strategic planning) decisions (3). The decisions taken by healthcare managers directly affect the quality, productivity, and effectiveness of the service. Correct decisions must be taken to provide quality and safe health services. However, the nature of decision-making is complex. Decision-making is a cognitive process on which many factors have effects (4). Social intelligence is one of these factors. Social intelligence skills which help the individual communicate and have social interaction with others also affect the quality of decision-making (5). Individuals with improved social intelligence are aware of their competencies and they can understand their environment at the same time. This enables them to control their emotions and make more effective decisions about their objectives (6). Managers make limited rational decisions by using their cognitive abilities and social relationships in healthcare services where environmental uncertainty and complexity are high (7).

Social intelligence has been the subject of a substantial amount of literature especially in the last two decades. However, little contribution has been made to the effect of social intelligence on decision-making behaviours. In studies conducted with healthcare professionals and managers, no study examining the effect of social intelligence on decision-making styles has been found. The aim of this article is to examine the relationship between the healthcare managers' social intelligence levels and decision-making styles. Moreover, it also aims to determine the relationship between the socio-demographic characteristics of healthcare managers and their social intelligence levels and decision-making styles. Social intelligence emphasizes using social skills and working in a team. Considering that healthcare service is a team service, social intelligence is important especially in terms of managers. Decision-making is one of the most important roles of managers. Therefore, this study will be the first in evaluating these two concepts together on healthcare managers.

## Background

### Social Intelligence

Some basic individual differences which cause people to have different degrees of achievement in social situations are called social intelligence in psychological literature (8). Social intelligence has a very wide field of study in psychology. Researchers have defined it differently over the years (9). It was first defined by Thorndike (10) as the ability to understand and manage people and act intelligently in human relationships. It was later explained by Guilford (11) in the behavioural intelligence model and popularized by Goleman (12) and Albrecht (13). According to Goleman (12), social intelligence includes both interpersonal and social skills. On the other hand, Albrecht (13) defined social intelligence as the ability to get along and cooperate with others.

Social intelligence is a concept that is difficult to define and measure because of its nature. Many researchers have put forward various opinions regarding the dimensions of social intelligence. Two basic dimensions are generally mentioned in the literature as cognitive (14) and behavioral dimensions (15). In this study, social intelligence was examined in three sub-factors stated by Silvera et al. (9). These factors are social skills, social knowledge process and social awareness. Social skill is known as sociality transformed into behaviour. This factor indicates that the individual behaves wisely in his/her social relationships. Social knowledge process is the ability of an individual to understand and predict the feelings and behaviours of other individuals in his/her relationship with them. Social awareness is the individual's awareness of his/her social environment and his/her ability to act in accordance with this environment (9).

It is suggested that social intelligence is one of the most important factors affecting the success of individuals, improves social interaction and can be a precursor of success especially in the administrative domain (16). Social intelligence generally depends on effective social functionality, effective management, and leadership (8). Whether social intelligence will be used to achieve common objectives rather than personal objectives depends on the emotional maturity and social power motivation of the manager or leader (17, p.153). Riggio and Reichard (8) emphasized the importance of social and emotional skills for effective management and leadership. It is important for managers to use especially social intelligence to be effective. Social intelligence is the sensitivity to social problems and the ability to manage them effectively in terms of management (18, p.56). Social intelligence is the ability to determine the requirement of leadership and management in a given situation and to choose the appropriate reaction (17, p.152). Understanding the three-factor structure of social intelligence, which is also used in the

research, and benefiting from them will increase the effectiveness of managers.

### Decision-making

According to Van Wart (1998), a decision is a judgement or a result which is reached or made. This definition highlights the choice of a single option among the alternatives. There are two main trends related to the purpose of this research at the heart of a set of decision models: decision-making styles and decision-making as a process. John Dewey argued that individual decision-making process consisted of three separate stages as “(1) What is the problem? (2) What are the alternatives? (3) Which alternative is the best?” (19). Decision-making style is based on the studies of a number of scientists. During the decision-making process, individuals acquire habits that can be affected by many factors they have previously developed. Decision-making style consists of a learnt set of habits (19-21). Decision-making styles were explained by Scotte and Bruce (21) through five factors:

*“Rational decision-making style”*: It is the style expressed by extensive research and rational evaluation for alternatives. Information entry is of the highest order.

*“Intuitive decision-making style”*: It is the opposite of rational decision-making. It is a style expressed by relying on intuition and feeling rather than knowledge in decision-making.

*“Dependent decision-making style”*: It is the style in which seeking advice and guidance from others comes forward.

*“Avoidant decision-making style”*: It is the style expressed by attempts to avoid decision-making completely.

*“Spontaneous decision-making style”*: It is the style in situations that require immediate decision-making.

Intuitive, dependent and avoidant decision-making styles can be viewed as fundamental decision-making styles as they are used more frequently on a daily basis. However, rational decision-making is a more improved decision-making style. People use information and facts and analysis and step-by-step procedures to make decisions. Intuitive decision-making mostly does not require reasoning or logic. Most people do not do extensive research on what route to take to work in a crowded city or which of the various options to choose for dinner; they figure it out through intuition (22).

One of the most fundamental processes on healthcare management is decision-making. The decision-making style of the managers directly affects the quality, productivity and effectiveness of the services provided (4). Managers should know the decision-making styles and make use of the appropriate decision-making style when necessary, in order to make effective decisions and improve decisions (23).

### Social Intelligence and Decision-making

In the literature, theoretical aspects of social intelligence are focused mostly. However, there is an important gap in both theory and practice in terms of the effect of social intelligence

skills on decision-making models. Decision makers generally face problems that cannot be easily solved and sometimes there might be negative effects on others even in the issues they believe that they have solved. Therefore, evaluating the effect of decisions on others should be an important factor of the decision-making process. The issue of how decisions will have an effect on others and how they will be interpreted requires social intelligence skills (24). Although there are more studies in the literature on the relationship between emotional intelligence and decision-making, the effect of social intelligence on decision-making cannot be denied. Hence, Goleman (12) defined social awareness related to social intelligence, the individual's relationship and interaction with others and relationship management skills as well as self-management and self-awareness while defining emotional intelligence skills that are effective on decision-making. The conducted studies have shown that social skills have a positive statistically significant effect on decision-making (5). Again, while social intelligence skills such as communication, influencing and persuasion were emphasized among the skill requirements that purchasing managers needed (25), among the basic skills of nurse managers skills which required social intelligence such as communication skills and relationship management were mentioned (26).

## Methods

### Aim

The aim of this study was to examine the relationship between social intelligence and decision-making styles of healthcare managers. In particular, the aim of the study was to analyse the effect of social intelligence levels of managers on decision-making styles.

Based on previous discussion, the following hypotheses were established.

H1: There is a significant difference between socio-demographic characteristics and decision-making styles dimensions.

H2: There is a significant difference between socio-demographic characteristics and social intelligence

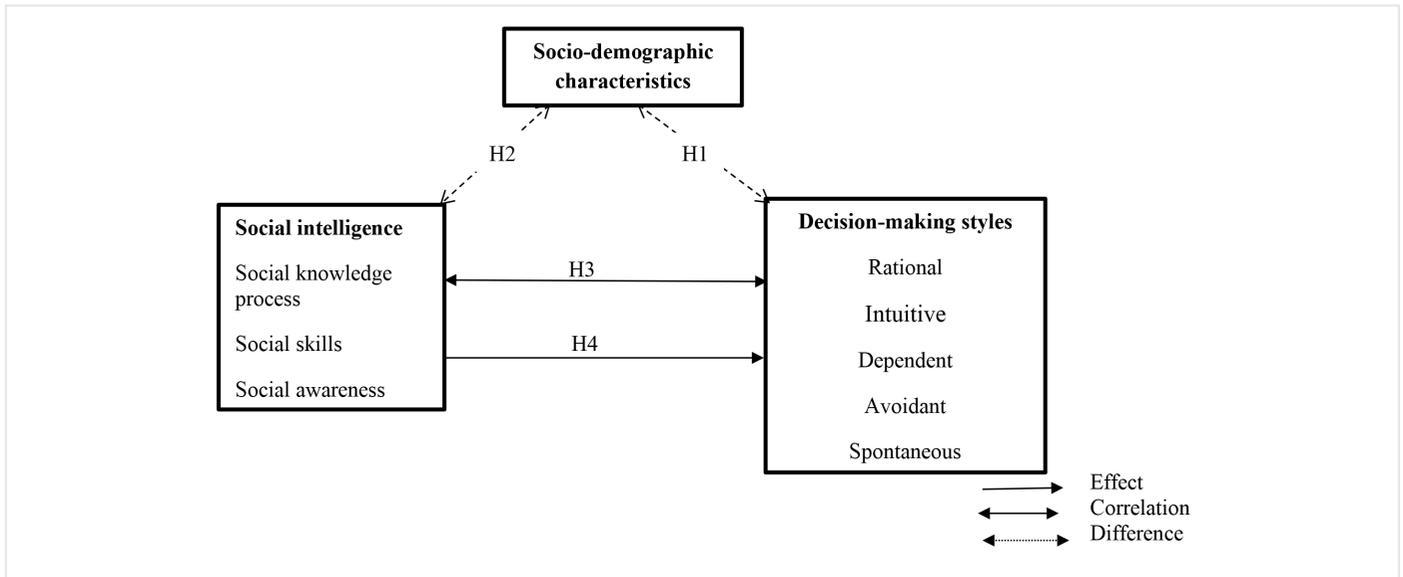
H3: There is a significant correlation between social intelligence as well as its sub-dimensions and decision-making styles dimensions.

H4: Social intelligence has a positive impact on decision making styles dimensions.

The relationships proposed in the hypotheses in this study are presented in Figure 1.

### Sample and Procedure

A cross-sectional study was conducted in three public hospitals. The invitation to participate in this study was sent to 260 healthcare managers working in these hospitals. It was sent to all the managers without sampling selection. The data were collected using a questionnaire in person. A questionnaire was distributed to the managers who agreed to participate in the



**Figure 1.** The proposed research model

study, brief information was given about the purpose of the study and the confidentiality of the answers was ensured. A total of 170 valid questionnaires were obtained from three public hospitals. General response rate was 65%. As a result, the sample size of the present study was suitable for testing the model.

**Ethical Consideration**

The research protocol was approved by the ethics committee of a public university (date: 09.30.2019; number: 31900080-600-E.15719). Written permission was obtained from the hospitals where the study was conducted. Potential participants were informed about the scope, aim, content and method of the study and privacy and anonymity of the data. Participation was based on voluntarism. Informed consents of the participants who agreed to participate in the study were taken. This study was carried out in accordance with 1964 Helsinki Declaration.

**Measures**

Multi-item scales were used to measure the structures in this study and the scales available in the literature were adopted. The questionnaire form consisted of three parts: social intelligence, decision-making styles and socio-demographic characteristics. All item expressions were measured in 5-point Likert type (1= strongly disagree, 5= strongly agree). Scale factor scores were evaluated in the range of 1-5.

“Tromso social intelligence scale” developed by Silvera et al. (9) is used to measure the social intelligence levels of managers. The scale is consisted of a 3-factor structure as “social knowledge process, social skills and social awareness” and 21 items. In this study, the Cronbach’s  $\alpha$  values of the factors were determined as 0.84, 0.83 and 0.71, respectively and the Cronbach’s  $\alpha$  value of the general scale was determined as 0.60.

The Decision-making styles scale was developed by Scott and Bruce (21). The scale is consisted of a 5-factor structure as “rational, intuitive, dependent, avoidant, and spontaneous

decision-making” and 25 items. In this study, the Cronbach’s  $\alpha$  value of the scale was determined as 0.78. In this study, Cronbach’s  $\alpha$  values of the factors were determined as 0.84, 0.68, 0.70, 0.90 and 0.72, respectively.

**Analysis**

The analysis of the data was done by using SPSS 26 package program. The descriptive statistics used were percentages, means, and standard deviations. Anova and independent t test were used to determine the relationships between the healthcare managers’ socio-demographic characteristics, social intelligence, and decision-making styles. Simple linear regression analysis was used to measure the effect of the managers’ social intelligence levels on decision-making styles. The model developed by Baron and Kenny (27) was used in the regression analysis. Before starting the regression analysis, whether there was multicollinearity between variables and correlation relations were determined. The variance inflation factor (VIF) and tolerance values were examined to determine the multicollinearity. It means that there is a multicollinearity problem when VIF is greater than 10.0 and the tolerance is less than 0.10 (28). As a result of the analysis, it was determined that VIF values (2.04; 2.63 and 1.81) and tolerance values (0.48, 0.37 and 0.55) were suitable.

**Results**

A total of 170 healthcare managers were included in this study. The average age of the participants was 40.11. Slightly more than half of the participants were women (64.7%) and had bachelor’s degree (54.1%) and the majority were married (83.5%). Approximately half of them were nurse managers (49.4%). The participants’ average working time in management positions was 6.77 years (SD =5.35) and slightly more than half of them were low level managers (60.6%). A few of them (20%) were working in management positions for more than 10 years. All details of the characteristics of healthcare managers are shown in Table 1.

As a priority in the study, standard deviation and general averages were evaluated to perform error control in the data. The mean scores of the managers in the social intelligence scale were determined as (3.42±0.32) and the mean scores on the decision-making styles scale were determined as (3.13±0.39). Social knowledge process which was one of the social intelligence sub-factors of the managers had the highest average (3.97±0.71). In addition, the managers had the highest average (4.35±0.52) in the rational decision-making sub-factor in the decision-making style scale. As a result of the normality analysis, it was determined that the skewness and kurtosis values of the scales and their sub-factors were between -2 and +2 values (29). According to the results obtained, it was found appropriate to use parametric tests in the analysis of the data (Table 2).

The independent t test showed that males had a significantly higher mean scale score than the females on the dependent (3.44±0.81) and spontaneous (2.61±0.84) decision-making scales. This result revealed that male managers are more dependent and spontaneous than female managers while making decisions. According to the Anova test, those with high school educational level had a significantly higher mean scale score on the intuitive (4.08±0.78), dependent (3.78±0.75) and avoidant (2.87±0.97) scales than those with graduate and master's degrees. In addition, managers with high school educational level had a significantly higher mean scale score in the spontaneous decision-making scale (2.80±0.8) than only the ones with graduate degrees. Again, only in the spontaneous decision-making scale, administrative manager (2.72±0.80) had significantly higher mean scale score than the nurse managers (2.24±0.68). According to the results of the test conducted to determine whether there was a significant difference between managers' decision-making styles in terms of management experience variable, it was determined that there was a significant difference between the groups in rational decision-making (p=0.000), dependent decision-making (p=0.000), and avoidant decision-making (p=0.000) scales. In the rational decision-making scale, it was observed that the difference was between the managers with less than 5 years and more than 11 years of management experience and that the managers with more management experience showed more rational decision-making behaviour. It was observed that there was a significant difference in terms of the dependent and avoidant decision-

making scale between the managers with less than 5 years and 6-10 years and more than 11 years of management experience. Those with less management experience showed more dependent and avoidant decision-making behaviour (Table 3). Accordingly, H1 hypothesis was accepted except for the marital status and management position variables.

**Table 1.** Demographic characteristics of the participants (n=170)

Characteristics		Mean	SD
Age		40.11	7.14
Year in profession		17.23	8.04
Year in present organisation		9.29	6.83
Year in present management position		4.96	4.62
Years in management position		6.77	5.35
Categories		N	%
Gender	Female	60	35.3
	Male	110	64.7
Marital status	Married	142	83.5
	Un married	28	16.5
Education	High school	22	12.9
	Bachelor	92	54.1
	MS/PhD	56	32.9
Job role	Physician manager	37	21.8
	Nurse manager	84	49.4
	Administrative manager	49	28.8
Management position	Senior	15	8.8
	Middle	52	30.6
	Lower	103	60.6
Unit	Clinic and polyclinic	51	30.0
	Administration	74	43.5
	Laboratory-X-ray, operating room, emergency, intensive care	45	26.5
Management experience	<5 years	67	39.4
	6-10 years	69	40.6
	>11 years	34	20.0

SD: Standard deviation

**Table 2.** Descriptive statistics of the key study variables

Scale and its subdimensions	N	Min	Max	Mean	SD	Skewness	Kurtosis
<b>Social intelligence scale</b>	170	1.00	5.00	3.42	0.32	-0.549	0.944
Social knowledge process	170	1.00	5.00	3.97	0.71	-0.387	-0.082
Social skill	170	1.00	5.00	2.42	0.61	-0.601	0.233
Social awareness	170	1.00	5.00	3.88	0.62	0.463	0.010
<b>Decision-making styles scale</b>	170	1.00	5.00	3.13	0.396	0.765	2.086
Rational decision-making	170	1.00	5.00	4.35	0.52	-0.572	0.305
Intuitive decision-making	170	1.00	5.00	3.58	0.68	-0.236	0.303
Dependent decision-making	170	1.00	5.00	3.29	0.71	0.256	-0.490
Avoidant decision-making	170	1.00	5.00	1.98	0.84	1.030	0.828
Spontaneous decision-making	170	1.00	5.00	2.45	0.77	0.490	-0.257

**Table 3.** Relationships between sosyo-demografic characteristics, decision-making styles and social intelligence

Charecteristics	Categories	N	Mean	SD	F	P	Difference
Dependent DMS <sup>a</sup>	Male	60	3.44	0.81	6.230	0.044	
	Female	110	3.21	0.64			
Spontaneous DMS <sup>a</sup>	Male	60	2.61	0.84	4.601	0.052	
	Female	110	2.36	0.71			
Rational DMS <sup>a</sup>	Male	60	4.32	0.57	1.593	0.209	
	Female	110	4.36	0.49			
Intuitive DMS <sup>a</sup>	Male	60	3.71	0.68	0.051	0.822	
	Female	110	3.52	0.68			
Avoidant DMS <sup>a</sup>	Male	60	3.71	0.68	3.623	0.060	
	Female	110	3.52	0.68			
Social intelligence <sup>a</sup>	Male	60	3.40	0.37	3.115	0.079	
	Female	110	3.43	0.28			
Independent variable: education							
Intuitive DMS <sup>b</sup>	High school (1)	22	4.08	0.78	6.398	0.003	1-2 p=0.010; 1-3 p=0.014
	Bachelor (2)	92	3.50	0.69			
	MS/PhD (3)	56	3.52	0.54			
Dependent DMS <sup>b</sup>	High school (1)	22	3.78	0.75	6.212	0.003	1-2 p=0.002; 1-3 p=0.003
	Bachelor (2)	92	3.22	0.67			
	MS/PhD (3)	56	3.20	0.70			
Avoidant DMS <sup>b</sup>	High school (1)	22	2.87	0.97	17.355	0.000	1-2 p=0.000; 1-3 p=0.000
	Bachelor (2)	92	1.90	0.69			
	MS/PhD (3)	56	1.75	0.81			
Spontaneous DMS <sup>b</sup>	High school (1)	22	2.80	0.81	3.922	0.022	1-2 p=0.018
	Bachelor (2)	92	2.32	0.71			
	MS/PhD (3)	56	2.53	0.80			
Rational DMS <sup>b</sup>	High school (1)	22	4.18	0.54	1.408	0.248	
	Bachelor (2)	92	4.36	0.53			
	MS/PhD (3)	56	4.40	0.50			
Social intelligence	High school (1)	22	3.2	0.46	3.444	0.034	1-3 p=0.027
	Bachelor (2)	92	3.43	0.29			
	MS/PhD (3)	56	3.47	0.27			
Independent variable: job role							
Spontaneous DMS <sup>b</sup>	Physician manager (1)	37	2.58	0.81	7.166	0.001	2-3, p=0.001
	Administrative manager (2)	49	2.72	0.80			
	Nurse manager (3)	84	2.24	0.68			
Rational DMS <sup>b</sup>	Physician manager (1)	37	4.36	0.49	0.319	0.727	
	Administrative manager (2)	49	4.39	0.59			
	Nurse manager (3)	84	4.31	0.49			
Dependent DMS <sup>b</sup>	Physician manager (1)	37	3.37	0.72	0.454	0.636	
	Administrative manager (2)	49	3.22	0.82			
	Nurse manager (3)	84	3.29	0.65			
Avoidant DMS <sup>b</sup>	Physician manager (1)	37	1.89	0.85	0.275	0.760	
	Administrative manager (2)	49	1.97	0.99			
	Nurse manager (3)	84	2.02	0.75			

**Table 3. Continued**

Charecteristics	Categories	N	Mean	SD	F	P	Difference
Intuitive DMS <sup>b</sup>	Physician manager (1)	37	3.50	0.67	2.716	0.069	
	Administrative manager (2)	49	3.77	0.67			
	Nurse manager (3)	84	3.51	0.69			
Social intelligence	Physician manager (1)	37	3.44	0.30	0.099	0.906	
	Administrative manager (2)	49	3.42	0.37			
	Nurse manager (3)	84	3.41	0.29			
Independent variable: management experience							
Rational DMS <sup>b</sup>	< 5 years (1)	67	4.17	0.55	9.082	.000	1-3, p=0.000
	6-10 years (2)	69	4.38	0.45			
	>11 years (3)	34	4.62	0.47			
Dependent DMS <sup>b</sup>	<5 years (1)	67	3.58	0.72	10.703	.000	1-2, p=0.001 1-3, p=0.000
	6-10 years (2)	69	3.13	0.69			
	>11 years (3)	34	3.02	0.54			
Avoidant DMS <sup>b</sup>	<5 years (1)	67	2.36	0.97	14.989	0.000	1-2, p=0.000 1-3, p=0.000
	6-10 years (2)	69	1.80	0.64			
	>11 years (3)	34	1.58	0.62			
Intuitive DMS <sup>b</sup>	<5 years (1)	55	3.57	0.75	0.777	0.461	
	6-10 years (2)	51	3.68	0.61			
	>11 years (3)	64	3.52	0.68			
Spontaneous DMS <sup>b</sup>	<5 years (1)	55	2.41	0.92	0.592	0.554	
	6-10 years (2)	51	2.55	0.76			
	>11 years (3)	64	2.41	0.63			
Social intelligence <sup>b</sup>	<5 years (1)	67	3.33	0.33	6.586	0.002	1-3 p=0.001
	6-10 years (2)	69	3.44	0.31			
	>11 years (3)	34	3.56	0.23			
Independent variable: management position							
Decision making style	Senior	15	3.04	0.27	1.332	.267	
	Middle	52	3.08	0.38			
	Lower	103	3.17	0.41			
Social intelligence	Senior	15	3.59	0.258	2.369	.097	
	Middle	52	3.39	0.26			
	Lower	103	3.41	0.34			
Independent variable: gender							
*t-test for independent group, <sup>b</sup> Analysis of variance							

Managers with more than 11 years of management experience had a significantly higher mean scale score than managers with less than 5 years of management experience ( $p=0.002$ ) in the social intelligence scale (Table 3). Accordingly, H2 hypothesis was rejected except for the management experience variable.

The correlation relationships between variables are shown in Table 4. While social intelligence was significantly positively related with rational decision-making style ( $r=0.513$ ,  $p<0.01$ ), it was significantly negatively related with dependent ( $r=-0.267$ ,  $p<0.01$ ) and avoidant ( $r=0.463$ ,  $p<0.01$ ) decision-making styles. While social knowledge process was significantly positively related with rational decision-making style ( $r=0.551$ ,  $p<0.01$ ), it was significantly negatively related with dependent

( $r=-0.438$ ,  $p<0.01$ ) and avoidant ( $r=0.595$ ,  $p<0.01$ ) decision-making styles. While social skills were significantly positively related with rational decision-making style ( $r=0.523$ ,  $p<0.01$ ), it was significantly negatively related with dependent ( $r=-0.463$ ,  $p<0.01$ ), avoidant ( $r=-0.671$ ,  $p<0.01$ ) and spontaneous ( $r=-0.163$ ,  $p<0.01$ ) decision-making styles. While social awareness was significantly negatively related to rational decision-making style ( $r=-0.362$ ,  $p<0.01$ ), it was significantly positively related with dependent ( $r=0.557$ ,  $p<0.01$ ) and avoidant ( $r=0.640$ ,  $p<0.01$ ) decision-making styles. Accordingly, H3 hypothesis was accepted but not in the intuitive and spontaneous decision-making styles dimensions.

A simple linear regression analysis was performed to determine

**Table 4.** Correlations between social intelligence and its sub-dimensions and decision-making styles

Factors	Social knowledge process	Social skills	Social awareness	Rational	Intuitive	Dependent	Avoidant	Spontaneous
Social knowledge process	1	0.711**	-0.529**	0.551**	0.012	-0.438**	-0.595**	-0.037
Social skills	0.711**	1	-0.664**	0.523**	-0.089	-0.463**	-0.671**	-0.163*
Social awareness	-0.529**	-0.664**	1	-0.362**	0.089	0.557**	0.640**	0.117
Overall social intelligence	0.861**	0.743**	-0.180**	0.513**	0.009	-0.267**	-0.463**	-0.057

the effect of general social intelligence levels of healthcare managers on their decision-making styles (Table 5). Social intelligence levels predicted rational, dependent, and avoidant decision-making styles. It was observed that increased social intelligence was related with increased rational decision-making ( $\beta=0.513$ ,  $p=0.000$ ), decreased dependent ( $\beta=-0.267$ ,  $p=0.000$ ), and avoidant ( $\beta=-0.463$ ,  $p=0.000$ ) decision-making styles. General social intelligence clarified 25% of the change in rational decision-making style (adjusted  $R^2=0.259$ ), 6.6% of the change in dependent decision-making style (adjusted  $R^2=0.066$ ), 20% of the change in avoidant decision-making style (adjusted  $R^2=0.209$ ) (Table 5). Based on the results H4 hypothesis was accepted but not in the intuitive and spontaneous decision-making styles dimensions.

## Discussion

This study examined the relationship between socio-demographic characteristics, social intelligence and decision-making styles in a sample of healthcare managers. The discussion part of this study was presented in three parts in order to achieve the purpose of the study.

### *I. Evaluating the social intelligence and decision-making styles of healthcare managers.*

First of all, the findings of the study showed that the managers adopted avoidant decision-making style the least while they adopted rational decision-making style the most. This finding was similar to Şen et al. (30) and Küçükkendirci et al. (4) who showed that public health managers at the provincial level adopted rational decision-making style more. In addition, another study similarly revealed that nurse managers adopted rational decision-making behaviour (31). However, the findings did not agree with Aliakbari et al. (32) who reported that clinical nurses mostly adopted the intuitive decision-making style. In particular, the importance of intuitive decision-making in nursing services was emphasized (33). Because, unlike the studies which consider intuition and rationality as alternative decision-making approaches, there are also studies which argue that intuition is not an independent process from analysis and that intuition and analysis are complementary to each other in

decision-making (34).

The findings regarding the social intelligence of healthcare managers showed that the managers had a high level of social intelligence, especially in terms of their social information processing skills. This may be related to the managers' constant interaction with those around them and it demonstrates their ability to recognize and anticipate the feelings and behaviours of others. This finding was similar to Korauš et al. (35) who reported that the managers had higher empathy levels than the ones who were not managers.

### *II. Evaluating the relationship between healthcare managers' social intelligence, decision-making styles and socio-demographic characteristics.*

Second, the relationships between social intelligence and decision-making styles were examined according to socio-demographic characteristics. Regarding the socio-demographic characteristics and decision-making styles of healthcare managers, the study revealed that the managers' decision-making styles were significantly related with gender, education level, job role, and management experience. When the relationship between gender and decision-making style was analyzed, it was found that male managers were more dependent and spontaneous than female managers while making decisions. The findings were similar to previous studies. Küçükkendirci et al. (4) showed that male managers in public health institutions adopted a more dependent and intuitive decision-making style. However, there was no significant difference between gender and rational, intuitive, and avoidant decision-making styles. There are different research results in the literature on this subject. For example, Şen et al. (30) did not find a significant difference between the gender of public health administrators and the five decision-making styles. However, Acar et al. (36) revealed in his study on education managers that male managers made more intuitive decisions than female managers, they referred to more opinions of others when making decisions, and they adopted more avoidant decision-making behavior. When the relationship between education level and decision-making style was analyzed, no significant relationship was found only between rational decision-making style and education level. A significant relationship was found between education level and intuitive, avoidant, dependent and

**Table 5.** The influence of overall social intelligence on decision-making styles

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	Std. error	Beta		
Constant	1.468	0.373		3.933	0.000
Social intelligence	0.841	0.109	0.513	7.754	0.000
Summary statistics of the research model regarding the effect of social intelligence on dependent decision-making styles R=0.267, adj.R <sup>2</sup> =0.066, F=12.846, p=0.000					
Model	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	Std. error	Beta		
Constant	5.342	0.574		9.303	0.000
Social intelligence	-0.598	0.167	-0.267	-3.584	0.000
Summary statistics of the research model regarding the effect of social intelligence on avoidant decision-making styles R=0.463, adj.R <sup>2</sup> =0.209, F=45.718, p=0.000					
Model	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	Std. error	Beta		
Constant	6.172	0.623		9.915	0.000
Social intelligence	-1.223	0.181	-0.463	-6.762	0.000
Summary statistics of the research model regarding the effect of social intelligence on intuitive decision-making styles R=0.009, adj.R <sup>2</sup> =-0.006, F=0.015, p=0.904					
Model	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	Std. error	Beta		
Constant	3.520	0.570		6.172	0.000
Social intelligence	0.020	0.166	0.009	0.121	0.904
Summary statistics of the research model regarding the effect of social intelligence on spontaneous decision making styles R=0.057, adj.R <sup>2</sup> =-0.003, F=0.015, p=0.463					
Model	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	Std. error	Beta		
Constant	2.923	0.639		4.571	0.000
Social intelligence	-0.137	0.186	-0.057	-0.736	0.463
Summary statistics of the research model regarding the effect of social intelligence on rational decision-making styles R=0.513, adj.R <sup>2</sup> =0.259, F=60.120, p=0.000					

spontaneous decision-making styles. It was found that healthcare managers with high school education level adopted a more intuitive, avoidant, dependent and spontaneous decision-making style. Based on this finding, it can be said that the managers with a lower education level tend to avoid responsibility, consider their feelings and intuitions as the main source of knowledge, and make sudden decisions without thinking. There are different research results related to this finding in the literature. There are studies reporting that education level has no effect on decision-making styles (4,30,36). In addition, Demir et al. (37) found that proportion of athletes with high school graduate rational and dependent decision-making style was significantly higher than athletes with bachelor's degree and primary school graduate.

When the relationship between job role and decision-making style was analyzed, a significant relationship was found only between the spontaneous decision-making style and job role. It

was revealed that administrative managers adopted spontaneous decision-making style more than nurse managers. Spontaneous decision-making behaviour is described as a tendency to make rapid, impulsive, and immediate action (21). The nature of the decisions taken by the administrative managers makes their taking quick decisions understandable. In addition, spontaneous decision-making may be insufficient in making decisions about patient care. This finding was similar to the study finding of Krasniqi et al. (38) which showed that directors of corporations adopted more intuitive and spontaneous decision-making behaviour. According to the authors, the managers who use intuitive and spontaneous decision-making styles make brave and quick decisions and tend to be more entrepreneurial. There are also studies that do not find a significant relationship between job role and decision-making styles (30).

When the relationship between managers' decision-making style and their management experience was analyzed, no significant relationship was found between management experience and intuitive and spontaneous decision-making styles, while a significant relationship was found between management experience and rational, dependent, and avoidant decision-making style. It was seen that the managers with more management experience adopted rational decision-making style while the managers with less management experience adopted dependent decision-making style the most and then adopted avoidant decision-making style. Rational decision-making is defined as the most promising, functional, and effective decision-making process for managers, leaders, and individuals (22). These results were similar to the findings of other studies (4,22). However, there are studies which do not report the work experience as a manager in a meaningful way as well (31).

Regarding the socio-demographic characteristics and social intelligence of healthcare managers, a significant relationship was found between the education level and management experience variable and social intelligence. No significant relationship was found with gender, job role, and management position. Being male or female did not change the social intelligence level in this study. Many studies in the literature reported that social intelligence levels do not differ according to gender (6,39). But there are also studies that report significant differences in the social intelligence levels in terms of gender (40). Regarding the job role variable, it was found that being a physician, nurse and administrative manager did not significantly differentiate the social intelligence level. Similarly, Kul and Yüksekbilgili (41) found no significant difference in the social intelligence level according to the working position (doctor, nurse-midwife, health officer, technician). Finally, regarding the management position; there was no significant difference in the social intelligence levels of senior, middle and lower managers. There are studies with different results in the literature regarding this finding. For example, Korauš et al. (35) showed that senior managers had higher social intelligence than low-level managers.

Healthcare managers with more than 11 years of management experience had a significantly higher level of social intelligence than the managers with less than 5 years of management experience. Managers should have a high level of social competence as well as a high level of knowledge about the management profession (35). Therefore, managers with more management experience may have improved their social competencies. Similarly, Kul and Yüksekbilgili (41) found a significant relationship between professional experience and social skill. The authors revealed that the social skill level was higher in healthcare profession with 5-10 years of professional experience than in other groups (below 5 years and over 10 years). In terms of the education level variable, managers with a master's degree or higher had a significantly higher the social intelligence level than managers with a high school education level. Similarly, Özdemir and Adigüzel (39) found that the social intelligence levels of healthcare profession with a master's degree were significantly higher. However, there are also results showing that education level is not effective on

social intelligence (40, 41).

### *III. Relating healthcare managers' social intelligence and decision-making styles.*

Third, there was no significant relationship between healthcare managers' social intelligence and their intuitive and spontaneous decision-making style. There was a statistically significant negative relationship between dependent and avoidant decision-making styles, while there was statistically significant positive relationship between healthcare managers' social intelligence and their rational decision-making styles. To our knowledge, there is no study examining the relationship between social intelligence and decision-making styles in the literature. However, as emphasized by Albrecht et al. (13), emotional intelligence may be associated with social intelligence and well-known and accepted leadership and management approaches. In this respect, these findings are consistent with the study of Ibrahim and Elsabahy (31). The authors showed that there was a statistically significant positive relationship between nurse managers' emotional intelligence and their rational, intuitive, and spontaneous decision-making styles, and a statistically significant negative relationship between emotional intelligence and avoidant decision-making style.

When the effect of social intelligence on decision-making styles was analyzed, it was determined that the social intelligence of healthcare managers had a significant positive effect on rational decision-making styles. The social intelligence abilities of healthcare managers can be explained by their understanding and anticipation of the behaviour of others and their behaving accordingly. In this sense, it can be said that managers with high social intelligence tend to make rational decisions that enables determining and evaluating the alternatives in a comprehensive way regarding the decision criteria. Al-Mehsin (5) showed that social skill level had an effect on the quality of decision-making.

It was determined that the social intelligence of healthcare managers had a significant negative effect on dependent and avoidant decision-making style. Healthcare managers with high social intelligence tend to be less prone to avoidant and dependent decision-making behaviour. This situation can be explained by the fact that individuals, who are aware of the social environment, understand the emotions and behaviours of others and act accordingly, prefer social support and avoidant strategy less (35). Because, perceiving the social environment and behaving accordingly do not cause people to seek advice from others or avoid any situation. This finding was consistent with the study findings of Korauš et al. (35) in which they examined the effect of managers' social intelligence on performance motivation.

### **Study Limitations**

The primary limitation of this study was that it analyzed the role of social intelligence in explaining the decision-making style of healthcare managers in only three public healthcare facilities. Because it is not known whether similar findings have emerged when analyzing other healthcare facilities and other countries, this questionnaire should be repeated in future

research in other contexts. Subsequently, the research design used might be a limitation; a cross-sectional study design could not establish a causal relation between the variables that were investigated. Longitudinal or qualitative studies will provide further theoretical detail underlying the findings of this study. In addition, there are many factors (e.g. organizational factors such as perception, personality, size, ownership, technology) that can affect the decision-making style of managers (30).

It is suggested that future studies should investigate other variables that may have an effect on the decision-making style of healthcare managers as well as social intelligence.

### Implications

Various theoretical and practical implications emerged from the research findings. The theoretical implication of this research is that it provides a better understanding of the decision-making behaviour of healthcare managers by evaluating the effect of social intelligence on the decision-making style. Decision making is an important function in management. However, to our knowledge, there is no previous study examining the influence of social intelligence on decision-making styles in the sample of healthcare managers. The study offered empirical evidence as to influence of social intelligence on decision making style in the sample of physicians, nurses, and administrative managers. These findings showed that the social intelligence of healthcare managers had a significant positive effect on rational decision-making style and a significant negative effect on dependent and avoidant decision-making style. Considering how important rational decision-making style is for the management work, it can be said that social intelligence is an important driving force in rational decision-making style.

There are also some practical implications of this research. Regardless of the level, all managers (physician-nurse-administrative) in health institutions make certain types of decision. Their decisions affect patients, employees, and others. One of the factors that predict effective decision-making style of healthcare managers is social intelligence. Social intelligence is an important skill. Healthcare managers have high social intelligence which will lead the organization to success. Another practical implication is that this study raises awareness in terms of social intelligence and decision-making styles for healthcare managers at all levels when selecting and evaluating managers for health institutions.

### Conclusion

The aim of this study was to examine the relationship between healthcare managers' social intelligence and their decision-making styles. Previous research has shown that emotional intelligence has an impact on decision making in managers. Yet, we still know relatively little about the relationship between social intelligence and decision-making style in the context of healthcare managers. This research provided evidence regarding that the social intelligence of healthcare managers could predict decision-making style. Research findings showed that healthcare managers with high social intelligence adopted more rational

decision-making behaviour and less dependent and avoidant decision-making behaviour.

### Ethics

**Ethics Committee Approval:** The research protocol was approved by the ethics committee of a public university (date: 09.30.2019; number: 31900080-600-E.15719).

**Informed Consent:** Written permission was obtained from the hospitals where the study was conducted.

**Peer-review:** Externally peer reviewed.

### Authorship Contributions

Concept: A.Y., Design: A.Y., Data Collection or Processing: S.A.K., Analysis or Interpretation: S.A.K., Literature Search: M.Ö., Writing: A.Y.

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