



# European Journal of Educational Research

Volume 10, Issue 2, 865 - 878.

ISSN: 2165-8714

<http://www.eu-jer.com/>

## Self-Regulation and its Relationship to Social Intelligence among College of Education Female Students at Prince Sattam University

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Received: May 4, 2020 • Revised: December 8, 2020 • Accepted: March 16, 2021

**Abstract:** The current study aimed to identify the level of self-regulation and social intelligence among students of the College of Education at Prince Sattam University in Wadi Al-Dawasir, and to reveal the relationship between self-regulation and social intelligence, as well as the possibility of predicting social intelligence through self-regulation. A sample consisting of (204) female students at the College of Education, Prince Sattam bin Abdulaziz University in Wadi Ad-Dawasir participated in this study. The measurement instruments included two researcher-made scales of self-regulation and social intelligence, and the SPSS program was used for statistical treatments. Results revealed that female students of the College of Education in Wadi Ad-Dawasir, Prince Sattam University, have a high level of self-regulation as well as social intelligence, and that there is a statistically significant positive correlation between the scores of self-regulation and social intelligence among the study sample. In addition, it was found that social intelligence can be predicted through self-regulation. It is possible to benefit from the results of this study in directing university planning officials to the importance of transforming the self-regulation and social intelligence of students into a culture and systematic practice through courses, symposiums and workshops, or integrating them into academic courses.

**Keywords:** *Self-regulation, social intelligence, female students, college of education, Prince Sattam University.*

**To cite this article:** Hashem, E. S. A. (2021). Self-regulation and its relationship to social intelligence among college of education female students at Prince Sattam University. *European Journal of Educational Research*, 10(2), 865-878. <https://doi.org/10.12973/eu-jer.10.2.865>

### Introduction

University students in general and female students in particular play the main role in the process of societal development, as they represent the top of the learning pyramid, and after their graduation, they form cadres upon which economic, social, administrative and cultural development is definitely dependent. As long as there is an interest in human development, human societies can advance. Furthermore, education helps the individual to become independent, direct themselves, and deliver the correct performance. Hence, self-regulation became one of the basic education goals. Self-regulation has a great value for individuals and plays a pivotal role in their lives, because it leads to higher achievement of the individual in the tasks that they perform, and thus leads to the acquisition of knowledge, social skills, and decision-making ability. It also plays an important role in developing the ability to make judgments and to maintain independence, which leads to self-affirmation.

Self-regulation begins at a young age and develops with age (McCabe & Gunn, 2007). Proper self-regulation helps individuals to become independent, to rely on themselves and to direct themselves in a correct manner that makes them feel satisfied.

Self-regulation is considered to be one of the basic dimensions of the human personality, as well as one of the positive skills that university female students must possess in order to be able to deal with difficult situations, whether in personal or professional life. What's more, it pushes them towards knowing the correct methods of dealing with others, as when the female student is able to organize herself, this enables her to acquire new skills that make it able to face life with efficiently and with balance. Subhi and Al-Sammak (2012) pointed out that self-regulation is the cornerstone of the human personality as its primary function is to seek the integrity and consistency of the personality so that the

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female student can adapt to the environment in which she lives. Self-regulation is a perceived hypothetical concept that is formed through the many environmental variables that they cannot be completely separated, as they share in varying degrees with each other, each affects the other and thus affects the organization of the human personality.

Self-regulation plays a pivotal role in the individual's life, as it is one of the factors that have a strong impact on what comes out of a person's activity. In addition, it helps the individual to control their behavior when they have their own thoughts regarding appropriate or inappropriate behavior and they choose actions accordingly.

Al-Obaidi (2011) believed that: It is necessary to have some form of internal self-regulation to ensure the cessation of non-social desires, in addition to the non-deviations from values while continuing to work on satisfying other needs that do not conflict with social trends and do not represent a violation of applied laws and regulations. (p. 71)

Al-Rab'a and Mukablah (2019) as well as Rakes and Dunn (2010) indicated that the failure of self-regulation leads to the occurrence of many problems, such as academic procrastination and low motivation to learn. Therefore, the study of Muttalib and Muhammad (2017) emphasized the importance of self-regulation among university students.

Self-regulation has a great impact on the daily life of the individual, as it is the basis of every action, and the gateway to increase the probability of success and reduce the possibilities of failure, in addition to using logic in a positive way, which makes the individual able to make better decisions in their personal and social life, and deal with others efficiently and intelligently (AL-Youssef, 2020).

God (Allah, Almighty) has honored man with the grace of reason (mind). The various mental capabilities of the human mind and the differences between people and their effects on their behaviors have received the attention of scholars, including the scientist Gardner and his theory of multiple intelligences in 1983 that Me'raj (2013) considered as one of the cognitive theories that, since its emergence, has produced a revolution in the field of educational practices as it aims at clarifying how individuals use their intelligence in unconventional ways. Me'raj mentioned that importance of such theory is highlighted in directing everyone to the job that suits them, and in helping a lot in solving problems if the appropriate type of intelligence is used in a proper way. Among these intelligences is social intelligence that is considered by theory of multiple intelligences as an important part of the individual's capabilities that cannot be overlooked.

Social intelligence is "the ability to understand and interact with others, interpret and adapt their behaviors, in order to achieve self and social benefit" (Al-Janabi, 2019, p. 73). Social intelligence is an important variable for the individual's success in life, especially their social life, and that success is reflected in their personality, as they become more confident in their abilities and more resilient, and have positive self-concept (Abdul-Raouf, 2018).

Abdulrahman and Abdullah (2007) mentioned that social intelligence expresses the individual's ability to deal effectively with others and includes the ability to understand people, interact with them and act in different social situations. Social intelligence is considered to be an important link between an individual's practical and scientific life, and the weakness of this link makes the individual vulnerable to social, psychological as well as personal disorders. Moreover, social intelligence is important in building a cohesive society, dealing with others and accepting them, and it represents a significant factor for the success of the individual in their social life. As the success of the individual is the basis of the success of society, knowing the extent to which female students possess social intelligence is of great importance.

Since university female students play a pivotal role in building and developing society, it is necessary to identify their interests and help them to build their personalities in a correct manner. The study of Subhi and Al-Sammak (2012, p. 73) "recommended the necessity of taking into account the psychological aspects of university female students because they are considered the basis for the formation of their personalities".

In view of the interest of modern psychology in positive variables of the human personality, that represent the power of personality in the face of life and its different situations which has been confirmed by the studies of Muttalib and Mohammed (2017), Nasr (2018) and Said (2020) in their investigation of self-regulation among university students, in addition to the studies of Asiri (2017), Al-Momani (2018) and Al-Quraishi (2020) in their study of the social intelligence of university students, and based on the importance of the university female role students' in the meaningful participation in building society, and the lack of studies linking their self-regulation and social intelligence, the importance of the current study stems from the importance of its topic as it tries to identify the level of self-regulation and social intelligence among university students, as well as the correlational between them. It also provides data for researchers to use in conducting other research, which gives the topic social and academic importance, according to the researcher's view.

Based on the above, the study problem raised the following sub-questions:

1. Is there a difference between the mean scores of the study sample and the hypothetical mean on the scales of self-regulation and social intelligence?
2. Is there a correlation between the scores of self-regulation and social intelligence among the study sample?

### 3. Can social intelligence be predicted through self-regulation?

#### Literature Review

##### 1. Self-regulation

Murray and Rosanbalm (2017) defined self-regulation as the act of managing thoughts and feelings so as to achieve success in school, relationships, as well as work. Odinokaya et al. (2019) also defined it as the students' ability to critique and evaluate external behavior and mental activity; whereas, according to Al-Rab'a and Mukablah (2019, p. 435), self-regulation is the ability of the individual to understand their learning, to develop knowledge and trends, to control emotional behaviors, to focus and actively participate in a group, and to monitor progress towards achieving goals.

Webb et al. (2018) referred to self-regulation as the control mechanism that enables the student to manage attention, emotion, behavior, and perception to participate in goal-oriented actions. Besides, Park et al. (2019) indicated that self-regulation is the cognitive, behavioral and emotional skills that allow individuals to work efficiently towards achieving their desired goals, especially when they are under stress

Listiana et al. (2020) argued that self-regulation includes the skills of time management, planning and managing strategies, and perseverance in completing difficult tasks. These skills increase the individual's ability to learn and can be improved and developed through training. The social cognitive theory is concerned with studying the system that individuals develop in self-regulation and its processes, and thus individuals manage the surrounding conditions based on their perception and awareness of their efficacy. This activity, that may be described as scientific, describes their control, activity and management of their various capabilities in facing the situations and experiences they encounter (Qatami, 2004).

Bandura (as cited in Mahmoud & Matar, 2011, p. 205) stated that "people are able to regulate themselves through direct control over their behaviors and through selecting or changing the environmental conditions that in turn affect their behaviors, thus creating their own incentives that drive and lead their behavior".

Gorgoz & Tican (2020) revealed that, with age, students become free and more independent, have more developed self-regulation skills, and conduct their learning in a more planned and conscious manner.

This is confirmed by the study of Assabab (2016) in that self-regulated students are distinguished by having many ways in which they organize their motivation as well as set suitable goals for their abilities and their surrounding conditions. They also have the ability to modify their circumstances if there is any change in the surrounding environment. On the other hand, students who have less self-regulation adopt unrealistic goals that are greater than their abilities or set goals with a very low ceiling.

There are numerous studies focused on self-regulation, such as Odinokaya et al. (2019) which concluded that self-regulation is related to students' awareness of their professional and personal goals, in addition to the study of Hussain (2018). Results of these studies revealed that a self-regulated person plans and sets future goals that they seek to achieve successfully despite their concern with respect to the Future. Besides, the study of Julian et al. (2019) revealed the effect of negative parenting treatment (neglect) on poor self-regulation of children. Jamil (2019) also recommended paying attention to self-regulation skills, as well as the necessity of developing them through various activities and programs.

##### 2. Social Intelligence

Gunduz (2017) defined social intelligence as the individual's ability to create, develop and maintain interpersonal social relationships, and Sekar (2016) defined social intelligence as the ability to understand and deal with people. To add, Demir and Doganay (2019) defined social intelligence as the depth of knowledge about the social world, and this process consists of two dimensions, namely understanding human behavior and dealing with human behavior. Many studies have been interested in researching in the field of social intelligence and its relationship to some other variables, such as the study of Zainudin and Istiyono (2019) which aimed to identify the relationship between the types of learning and social intelligence, and concluded that there is an interaction between the types of learning and social intelligence and that students who have high level of social intelligence and learned using scientific learning or direct learning have the same high fluency of responses.

Gunduz (2017) revealed that the social intelligence of university students is higher than that of students in the previous educational levels. In addition, Kriemeen and Hajaia (2017) showed that social intelligence is linked to various skills, such as interaction and communication with others, and these skills require a distinct organization and a high level of capabilities. They recommended the necessity of training in social intelligence and the development of educational programs that depend on social intelligence. Al-Khateeb and Alrub (2015) also recommended the need to develop social intelligence among university students because of its great importance. Similarly, Abdul Razzaq (2018), indicated the importance of training students in social intelligence.

Sekar (2016) aimed to explore the differences between genders (males and females) in social intelligence, and concluded that girls have higher social intelligence than boys. The study of Edwan (2018) explored the relationship between social intelligence and academic adaptation, and the results showed the existence of a statistically significant positive correlational between social intelligence and academic adaptation. In the same context, Girgis and Jasim (2018) found that there is a positive correlation between tolerance and social intelligence. In addition, Mohsen (2017) found that university students have social intelligence and that social intelligence is not related to academic achievement or academic intelligence in general.

The study of Zainudin and Istiyono (2019) confirmed that fluency responses on multi-solution tasks of students with high social intelligence are better than those of students with low social intelligence, and that students who have higher social intelligence show higher communication skills. Abbas (2019) generally examined the multiple intelligences among university students, such as intrapersonal, linguistic, visual, Kinesthetic, and social intelligence. It also investigated their availability among students. Results of the study of Stephanou and Athanasiadou (2020) disclosed that "the positive interpersonal relationships were predominately attributed to stable, personally controllable and self-student controllable factors". (p. 13)

Social Intelligence can be operationally defined as the female student's ability to understand the feelings and concerns of others, interact with them, and behave well in different social situations. It is operationally expressed by the score that the participant on the scale of social intelligence (with its three dimensions) in the current study.

Based on the above-mentioned, the importance of studying self-regulation and social intelligence as well as the relationship between them can be concluded, as the previous studies did not discuss the relationship between them.

### Methodology

The descriptive correlational method was adopted in the current study as it is suitable to its nature, goal as well as topic.

#### *Study Goal*

The goal of the current research was to identify:

1. the differences between the mean scores of the study sample and the hypothetical mean on the scales of self-regulation and social intelligence.
2. correlation between the scores of both self-regulation and social intelligence among the study sample.
3. the possibility of predicting social intelligence through self-regulation.

Study hypotheses:

The current study sought to test the following hypotheses:

1. There are no statistically significant differences between the mean scores obtained by the study sample and the hypothetical mean on the two scales of self-regulation and social intelligence.
2. There is no statistically significant positive correlation between the scores of self-regulation and social intelligence among the study sample.
3. Social intelligence cannot be predicted through university female students scores on self-regulation scale and its dimensions in a statistically significant manner.

#### *Sample and Data Collection*

A- A piloting sample (to validate study instruments): the piloting sample consisted of (50) participants randomly selected from the College of Education female students, at Prince Sattam University in Wadi Ad-Dawasir, with an average age (20.887) and a standard deviation (0.593), in order to ensure the validity and reliability of the current study instruments so that they can be applied in the main study.

B- The main study sample: The main study sample consisted of (204) female students randomly selected from the kindergarten departments, namely the departments of Home Economics and Special Education at the College of Education in Wadi Ad-Dawasir, Prince Sattam bin Abdulaziz University, with an average age (20.886) and a standard deviation (0.610).

The following tools were used to collect the data:

### 1. Self-regulation scale. (Prepared by the researcher, 2020)

After reviewing the previous studies, related literature as well as what was written about self-regulation, in addition to the available scales in this field, the researcher developed a self-regulation scale as a measurement instrument so as to test the hypotheses of this study. The preparation of this scale went through the following steps:

- reviewing the theoretical frameworks and scales that dealt with self-regulation.
- formulating a number of (22) items, and classifying them into four dimensions: goal setting, self-monitoring, self-evaluation, and self-reinforcement, with five alternatives (5 Strongly agree - 4 Agree - 3 Neutral - 2 Disagree - 1 Strongly Disagree) in front of each item from which the students chooses what is appropriate for their points of view.

The psychometric properties of the scale of self-regulation were verified as follows:

#### Self-regulation scale validity

1. *Validity of referees*: The preliminary form of the scale of self-regulation was submitted to a group of jury members consisting of (5) professors of kindergarten, mental health and psychology with the purpose of determining the suitability of scale items to measure the self-regulation of university female students, as well as to modify and add what they see as appropriate items. The panel have recommended not to delete any of the scale items and modified the wording of (3) items. The scale was administered to the sample of the pilot study, which consisted of (50) female students from the College of Education at Prince Sattam University.

2. *Construct Validity*: the construct validity the scale of self-regulation was verified by calculating the correlation of the score of each item with the dimension to which it belongs. In addition, the correlation of each dimension with the total score of the scale was also calculated, and all correlation coefficients were statistically significant at the level of (0.01) as shown in Tables 1 and 2.

Table 1. Correlation coefficients between the score of each item and the score of the dimension to which it belongs in the self-regulation scale (n = 50)

Dimension	Item	Correlation coefficient	Dimension	Item	Correlation coefficient
Goal setting	1	0.524 **	Self-monitoring	7	0.777 **
	2	0.632 **		8	0.630 **
	3	0.551 **		9	0.646 **
	4	0.632 **		10	0.720 **
	5	0.809 **		11	0.713 **
	6	0.535 **		12	0.621 **
Self-evaluation	13	0.510 **	Self-reinforcement	18	0.709 **
	14	0.698 **		19	0.662 **
	15	0.912 **		20	0.775 **
	16	0.811 **		21	0.840 **
	17	0.622 **		22	0.676 **

\*\* Significant at the level of (0.01).

Table 2. Correlation coefficients of the four dimensions of the self-regulation scale with the total score of the scale.

Correlation coefficients	Total score of the scale
Goal setting	0.664 **
Self-monitoring	0.884 **
Self-evaluation	0.818 **
Self-reinforcement	0.754 **

\*\* Significant at the level of (0.01).

### 3. Factor validity

In addition to the above, the researcher verified the validity of the scale statistically through factorial validity after making sure of the suitability of the sample and scale for factor analysis by using Kaiser-Meyer-Olkin formula. Bartlett's Test was used to fit the scale for factor analysis as shown in Table 3. The factor analysis for the scale items (N=22) was done using the Hotelling's principal components method.

The researcher followed the Guttman Criterion to determine the number of factors, whereby the factor is considered essential if its eigenvalue is (1) or greater than (1) integer. The factors were rotated orthogonally through the varimax method. The factor analysis resulted in four factors, on which (22) items were saturated, and their saturation was more

than (0.30). The factors are: the first factor is goal setting on which (6) items were saturated; the second factor is self-monitoring on which (6) were saturated; the third factor is self-evaluation on which (5) were saturated, and the fourth factor is self-reinforcement on which (5) were saturated.

Thus, the number of the scale items in its final form became (22) distributed on the four factors of the scale, and the total score of the scale ranged from (22 - 110) according to the five-point Likert scale: (5) Strongly agree - (4) Agree - (3) Neutral - (2) Disagree - (1) Strongly disagree.

*Table 3. Results of using Kaiser-Meyer-Olkin formula to verify the suitability of the sample for performing factor analysis and using Bartlett's Test to fit the scale for factor analysis.*

Dimension	Kaiser-Meyer-Olkin	Sig.	Bartlett's Test	Sig.
Goal setting	0.558	0.01	66.47	0.01
Self-monitoring	0.801	0.01	71.84	0.01
Self-evaluation	0.616	0.01	99.89	0.01
Self-reinforcement	0.721	0.01	91.13	0.01
The scale as a whole	0.616	0.01	654.52	0.01

Table 3 shows the suitability of the sample number to perform factor analysis, as well as the suitability of the responses of the sample members on the scale to complete factor analysis, as the level of significance is (0.01).

*Table 4. Results of the factor analysis of self-regulation scale for university female students*

Items	First factor saturation	Items	Second factor saturation	Items	Third factor saturation	Items	Fourth factor saturation
1	0.638	7	0.820	13	0.471	18	0.790
2	0.723	8	0.691	14	0.673	19	0.780
3	0.530	9	0.649	15	0.926	20	0.812
4	0.543	10	0.763	16	0.809	21	0.815
5	0.788	11	0.658	17	0.679	22	0.491
6	0.484	12	0.549				
Eigenvalue	3.99		3.96		2.99		2.35
Percentage of variance	18.14		18.04		13.62		10.71
Eigenvalue of the scale as a whole	7.089						
Total percentage of variance	60.52						

#### *Reliability of the scale*

In order to ensure the reliability of the scale of self-regulation, the researcher used the Cronbach's alpha method and split-half method with the piloting sample which consisted of (50) female students of the College of Education in Wadi Ad-Dawasir at Prince Sattam University. Table 5 shows the reliability coefficients of the scale using the methods of Cronbach's alpha and split-half.

*Table 5. Reliability coefficients: Cronbach's alpha and split-half of Self-regulation scale (N = 50)*

Dimension	Number of items	Cronbach's alpha reliability coefficients	Split-half reliability coefficients	
			Spearman-Brown Formula	Guttman Formula
Goal setting	6	0.667	0.632	0.595
Self-monitoring	6	0.742	0.747	0.737
Self-evaluation	5	0.749	0.869	0.781
Self-reinforcement	5	0.754	0.598	0.591
Scale as a whole	22	0.871	0.745	0.743

Table 5 shows that the self-regulation scale and its four dimensions have a high degree of validity and reliability that make it valid for use in the main study.

#### *Final form of the self-regulation scale*

The final form of the scale of self-regulation consists of (22) items distributed on the four dimensions of self-regulation, and the total score of the scale ranges from (22-110) according to the five-point Likert scale.

Table 6. Distribution of self-regulation scale items in its final form

Dimension	Sum of items	Number of items
Goal setting	6	1-2-3-4-5-6
Self-monitoring	6	7-8-9-10-11-12
Self-evaluation	5	13-14-15-16-17
Self-reinforcement	5	18-19-20-21-22

## 2. Social Intelligence Scale (Preparation of the researcher 2020)

After reviewing the previous studies, related literature as well as what was written about self-regulation, in addition to the available scales in this field, the researcher developed a scale of social intelligence consisted of three dimensions (social interest, social self, social skills) for university female students as a measurement instrument so as to test the hypotheses of this study. The preparation of this scale went through the following steps:

- reviewing the theoretical frameworks and scales that dealt with social intelligence.
- formulating a number of (17) items with five alternatives (5 Strongly agree - 4 Agree - 3 Neutral - 2 Disagree - 1 Strongly Disagree) in front of each item from which students choose what is appropriate for their points of view. The psychometric properties of the social intelligence scale were ascertained as follows:

### Social intelligence scale validity

1. *Validity of referees*: the preliminary form of the scale of social intelligence was submitted to a panel of jury members consisting of (5) professors of kindergarten, mental health and psychology with the purpose of determining the suitability of the scale items to measure social intelligence of university female students, as well as to modify and add what they see as appropriate items. The panel have recommended not to delete any of the scale items and modified the wording of (2) items. The scale was administered to the sample of the pilot study, which consisted of (50) female students from the College of Education at Prince Sattam University.

2- *Construct Validity*: the construct validity the scale of social intelligence was verified by calculating the correlation of the score of each item with the dimension to which it belongs. In addition, the correlation of each dimension with the total score of the scale was also calculated, and all correlation coefficients were statistically significant at the level of (0.01). Tables 7 and 8 show the internal consistency of the scale of social intelligence as an indicator of the construct validity.

Table 7. Correlation coefficients between the score of each item and the score of the dimension to which it belongs in the social intelligence scale (n = 50)

Dimension	Item	Correlation coefficient	Dimension	Item	Correlation coefficient	Dimension	Item	Correlation coefficient
Social interest	1	0.856**	Social self	7	0.785**	Social skills	13	0.671**
	2	0.830**		8	0.779**		14	0.651**
	3	0.646**		9	0.535**		15	0.802**
	4	0.679**		10	0.811**		16	0.877**
	5	0.571**		11	0.675**		17	0.628**
	6	0.798**		12	0.660**			

\*\* Significant at the level of (0.01).

Table 8. Correlation coefficients of the three dimensions of the social intelligence scale with the total score of the scale

Correlation coefficients	Total score
Social interest	0.873**
Social self	0.920**
Social skills	0.927**

\*\* Significant at the level of (0.01).

## 3. Factor validity

In addition to the validity of referees, the researcher verified the validity of the scale statistically through factor validity after confirming the suitability of the sample and the scale for the factor analysis by using the Kaiser-Mayer-Olkin formula to verify the suitability of the sample to conduct factor analysis and using Bartlett's Test fit the scale for factor analysis as shown in table (9). The factor analysis of the scale items (n=17) was done using the Hotelling's principal components method.

The researcher used the "Guttman" criterion to determine the number of factors, whereby the factor is considered essential if its eigenvalue is (1) or greater than (1) integer. Then, the factors were rotated orthogonally by Varimax method. The factor analysis resulted in three factors, on which (17) items were saturated, and their saturation was more than (0.30). The factors are: the first factor is social interest on which (6) items were saturated; the second factor is social self on which (6) were saturated; the third factor is social skills on which (5) were saturated, and the fourth factor is self-reinforcement on which (5) were saturated.

Thus, the number of the scale items in its final form is (17), distributed on the three dimensions of the scale, and the total score of the scale ranges from (17 - 85) according to the five-point Likert scale: (5) strongly agree - (4) agree - (3) neutral - (2) disagree - (1) Strongly disagree.

The researcher used the Guttman Criterion to determine the number of factors, whereby the factor is considered essential if its eigenvalue is (1) or greater than (1) integer. The factors were rotated orthogonally through the varimax method. The factor analysis resulted in four factors, on which (22) items were saturated, and their saturation was more than (0.30). The factors are: the first factor is goal setting on which (6) items were saturated; the second factor is self-monitoring on which (6) were saturated; the third factor is self-evaluation on which (5) were saturated, and the fourth factor is self-reinforcement on which (5) were saturated.

Therefore, the number of the scale items in its final form became (17) distributed on the three factors of the scale, and the total score of the scale ranges from (17 - 85) according to the five-point Likert scale: (5) Strongly agree - (4) Agree - (3) Neutral - (2) Disagree - (1) Strongly disagree.

*Table 9. Results of using Kaiser-Meyer-Olkin formula to verify the suitability of the sample for performing factor analysis and using Bartlett's Test to fit the scale for factor analysis.*

Dimension	Kaiser-Meyer-Olkin	Sig.	Bartlett's Test	Sig.
Social interest	0.740	0.01	119.47	0.01
Social self	0.760	0.01	102.53	0.01
Social skills	0.732	0.01	76.83	0.01
Scale as a whole	0.752	0.01	588.12	0.01

Table 9 shows the suitability of the sample number to complete the factor analysis, as well as the suitability of the responses of the sample members on the scale to complete the factor analysis, as the level of significance came at the level of (0.01).

*Table 10. Results of factor analysis of the social intelligence scale among university female students*

Items	First factor saturation	Items	Second factor saturation	Items	Third factor saturation
1	0.846	7	0.791	13	0.744
2	0.839	8	0.798	14	0.585
3	0.583	9	0.578	15	0.764
4	0.706	10	0.830	16	0.895
5	0.579	11	0.631	17	0.656
6	0.831	12	0.623		
Eigenvalue	4.231		3.71		3.07
Percentage of variance	24.88		21.82		18.05
Eigenvalue of the scale as a whole	7.422				
Total percentage of variance	64.77				

#### *Reliability of the scale*

In order to ensure the reliability of the scale of social intelligence, the researcher used the Cronbach's alpha method as well as split-half method with the piloting sample which consisted of (50) female students of the College of Education in Wadi Ad-Dawasir at Prince Sattam University. Table 11 shows the reliability coefficients of the scale using the methods of Cronbach's alpha and split-half.



Table 11. Reliability coefficients: Cronbach's alpha and split-half of social intelligence scale (N = 50)

Dimension	Number of items	Cronbach's alpha reliability coefficients	Split-half reliability coefficients	
			Spearman-Brown Formula	Guttman Formula
Social interest	6	0.825	0.788	0.756
Social self	6	0.801	0.773	0.771
Social skills	5	0.764	0.773	0.747
Scale as a whole	17	0.915	0.882	0.881

Table 11 shows that the scale of social intelligence has a high degree of validity and reliability that make it valid for use in the main study.

#### Final form of the social intelligence scale

The final form of the scale of social intelligence consists of (17) items distributed on the three dimensions of social intelligence, and the total score of the scale ranges from (17-85) according to the five-point Likert scale.

Table 12. Distribution of social intelligence scale items in its final form

Dimension	Sum of items	Number of items
Social interest	6	1-2-3-4-5-6
Social self	6	7-8-9-10-11-12
Social skills	5	13-14-15-16-17

#### Statistical treatment

To test the validity of the hypotheses, the SPSS was used to perform the statistical treatment. Mean and standard deviation were used to calculate the level of self-regulation and social intelligence, Pearson correlation coefficient was used to measure the correlation between the two study variables; whereas, the analysis of variance and regression analysis were used to find out the extent to which self-regulation contributes to predicting the overall degree of social intelligence.

## Results

#### Results regarding testing the first hypothesis

Hypothesis one predicted that "there are no statistically significant differences between the mean scores of the study sample and the hypothetical mean on the scales of self-regulation and social intelligence".

Table 13. Means and standard deviations of the two scales of self-regulation and social intelligence, and their dimensions among university female students, arranged in descending order

Self-regulation and its dimensions	Mean	standard deviation	Hypothetical mean	Level	Order
Self-monitoring	25.303	3.192	18	High	1
Goal setting	23.652	3.239	18	High	2
Self-reinforcement	21.107	2.920	15	High	3
Self-evaluation	20.764	2.765	15	High	4
Scale as a whole	90.828	9.678	66	High	
Social intelligence and its dimensions					
Social interest	24.622	3.503	18	High	1
Social self	23.568	4.099	18	High	2
Social skills	19.436	3.370	15	High	3
Scale as a whole	67.627	9.528	51	High	

According to what is shown in table 13, the level of self-regulation among university female students is high, and the dimensions of self-regulation come in the following order: self-monitoring is in first place, goal setting comes second, self-reinforcement comes third, and self-evaluation comes fourth. All dimensions of self-regulation and the total score of self-regulation come at a high degree among university female students.

It is also noted from table 13 that the level of social intelligence among university female students is high, and the dimensions of social intelligence come in the following order: social interest is in first place, social self comes second, and social skills come third. All dimensions of social intelligence the total score of social intelligence come at a high degree among university female students.

The result of this hypothesis is consistent with the studies of Al-Qaisi and Latif (2016), Joudeh (2018), and Milad et al. (2018), which pointed out the high level of the skill of self-regulation among early childhood major female students, and that university students have self-regulation, in addition to their organization skills of behavior and performance by monitoring, evaluating, and judging themselves in accordance with the events that they face in their daily lives. This result is also in consistency with the studies of Sekar (2016), Mohsen (2017) as well as Abdi and Gracia (2020), which concluded that university students (males and females) have high levels of social intelligence.

The researcher attributes this result to the fact that the Kingdom of Saudi Arabia has attached great importance to females, especially in the recent period, by giving them a role in society and providing them with the opportunity to teach, work and travel to study, which made female students have a great desire to prove themselves, show their abilities and compete to obtain an important position in society. The high level of social intelligence of female students can also be attributed to several factors, the most important of which is social emotional maturity in this stage.

This result can also be attributed to the fact that the Kingdom of Saudi Arabia has worked on the development of the social skills of female students in different stages of education and has enabled them to have social communication with various institutions. All this worked to raise the level of social intelligence among female students and to make them have the ability to deal with others effectively and efficiently. Furthermore, the university education of female students makes them more able to organize themselves and have social intelligence. The study of Uygun and Aribas (2020) confirmed that social intelligence is one of the factors affecting success in life, and that the more an individual is present in social settings, the more they develop and improve their social intelligence.

#### *Results regarding testing the second hypothesis*

Hypothesis two predicted that “There is no statistically significant positive correlation between the scores of self-regulation and social intelligence among the study sample”. In order to test the validity of this hypothesis, Pearson correlation coefficients were calculated between the scores of self-regulation and those of social intelligence among the study sample, as shown in table 14:

*Table 14. Correlation coefficients of self-regulation and social intelligence*

<b>Variables</b>	<b>Social intelligence</b>
Self-regulation	0.678**

\*\* Significant at the level of (0.01).

It is clear from table 14 that there is a statistically significant positive correlation between the scores of both self-regulation and social intelligence at the level of significance (0.01). This result is consistent with Ayoub's study (2013) and Judah (2018) in the existence of a positive relationship and a positive effect of self-regulation on some academic and psychological variables. Self-regulated students who plan, reach the goal and monitor their behaviors while performing tasks feel an improvement in their thinking skills and attention. Thus, self-regulation makes them able to face the different social situations and deal with them intelligently

Nasr (2018) and Said (2020) affirmed that students' self-regulation depends to a large extent on internal reinforcements, and that the cognitive activity of future perceptions is what makes the individual able to plan their goals and determine the effort required for them, and to use self-monitoring strategies and continuous evaluation of their behaviors and feedback on what has been done. All this makes the individual able to assess their personal competence in facing society and dealing with others intelligently.

The researcher views self-regulation as the female student's ability to control her own behavior, therefore it gives her a sense of pride and self-satisfaction. Self-regulation is a process that is distinguished by that it stems from the person him/herself. Self-regulation skills work to provide psychological and emotional stability for the female student through setting goals as well as self-monitoring, evaluation and reinforcement of behavior. Self-regulation is related to the female student's self-efficacy (Kuo et al., 2020).

Thus, self-regulation provides the female student with a sound psychological environment that is free from tension, which helps her to deal with others with effective social intelligence. Studies, such as Kiema et al. (2020) as well as Millett and Kevelson (2020) confirmed that the social skills of university students enhance their participation as well as interaction among students by increasing social support and improving social relationships with each other. Hence, we can conclude that there is a positive statistically significant correlation between the scores of self-regulation and social intelligence.

#### *Results regarding testing the third hypothesis*

Hypothesis three predicted that “Social intelligence cannot be predicted through university female students' scores on the scale of self-regulation and its dimensions in a statistically significant manner.” The following is the result obtained:

Table 15. Results of analysis of variance of the contribution of self-regulation to predicting the total score of social intelligence

Source of Variance	Sum of squares	Degree of freedom	Mean squares	F	Sig.
Regression	8736.86	1	8736.862		
Residual	10280.133	202	50.892	171.675	0.01
Total	19016.995	203			

As shown in table (15), the value of F is (171,675) and the significance level is (0.01), thus the third hypothesis, which stated that "Social intelligence cannot be predicted through university female students' scores on the scale of self-regulation and its dimensions in a statistically significant manner" is not fulfilled and rejected. Hence, social intelligence can be predicted through university female students' scores on the scale of self-regulation and its dimensions in a statistically significant manner

Table 16. Results of regression analysis of the contribution of self-regulation to predicting social intelligence

Field	Beta	Regression coefficients	t	Regression constant	R	R <sup>2</sup>
Self-regulation	0.678	0.688	13.102	44.26	0.678	0.459

As shown in table 16, the beta values "regression weights" as well as their significance indicate that self-regulation contributes to predicting the total score of social intelligence. This is confirmed by the value of the significance of the regression coefficient, whose value reached (13.102), which is significant at the level of (0.01). This means that the relationship between the two variables is real. From table 16, we can conclude the regression equation as follows:

The general formula for regression:  $y = b x + a$

Where (y) is the value of the dependent variable, that is, (social intelligence), (x) is the value of the independent variable, that is, (self-regulation), (b) is the regression coefficient of the independent variable, and the value of (a) is the regression constant and equals (44.26). Thus, the equation becomes as follows: -

Predicted social intelligence score (y) = 0.688 × (total score of self-regulation) + 44.26.

The result of this hypothesis is in agreement with the study of Jameel (2019), which concluded that the level of students' social skills can be predicted through their skills of self-regulation, and the study of Al-Haidari (2015), which argued that self-regulated students organize their uses of both information and strategies, use various patterns of thinking, as well as depend on the process of self-evaluation and self-monitoring, which enable them to solve the problems they face, and thus deal with others in different situations with social intelligence.

Al-Burai (2018) believed that social intelligence has a role in students' self-discipline, as the student who has social intelligence, accept others, admits mistakes, has conscience, responsibility efficacy, self-control and self-management. The study of Al-Frehat (2017) also found that social intelligence works to enhance and increase students' self-efficacy, and that the individual who is characterized by high social intelligence, has high levels of positive social relationships, self-motivation, awareness and organization of feelings and self-confidence and is able to face obstacles.

The university atmosphere and the study requirements may increase the level of self-regulation and social intelligence among students. The study of Al-Youssef (2020) confirmed that university students possess a high level of self-regulation due to the requirements of university study, which is mainly based on organizing the tasks assigned to accomplish them on specific dates, which requires students to practice self-regulation. Al-Quraishi (2020) also confirmed that university students possess a high level of social intelligence due to the fact that they are young and that university atmosphere provides them with skills and means to help them understand the feelings of others.

Therefore, self-regulation skills are seen as the basis for effective social interactions. Therefore, self-regulation skills of the student increase intended social reactions, reduce socially unwanted behaviors, as well as positively affect the female student's ability to have social adaptation and the extent of her social skills, and thus she possesses a high level of social intelligence.

In addition, a female student who has high level of social intelligence will have the ability to deal with social situations that need coping and wisdom to overcome difficulties and solve problems between her and others away from negative emotion, and here comes the role of self-regulation as skills that the female student possesses for self-monitoring and self-evaluation, which leads her to show good behavior and deal smartly with others. The results of the current study confirm the importance of self-regulation with respect to achieving social intelligence, as self-regulation helps the female student to become independent, feel confident, and be able to control her emotions, her thinking, as well as her emotions, and thus increases her ability to deal with others intelligently.

Sawalhah and Al-Zoubi (2020) affirmed that self-regulation is one of the most important things that help the learner to improve their level on the one hand, and on the other hand, it works to improve self-esteem and appreciation and

develops motivation that directs behavior towards specific goals in order to reach the best levels of academic performance and gain information and skills. Listiana et al. (2020) confirmed that self-regulation is a proactive process organized by students who manage their thinking and behavior so as to achieve satisfaction and stability. Thus, it can be concluded that social intelligence can be predicted through self-regulation.

### Recommendations

In light of the results of the current study, the researcher recommends the following:

- Taking advantage of social intelligence and its elements and teaching that as an independent course or combining it with other courses.
- Transforming students' self-regulation and social intelligence into a culture and a systematic practice.
- Employing curricula, teaching methods, academic guidance and evaluation methods to develop self-regulation and social intelligence.
- The need for programs designed by practitioners to develop and enhance the level of self-regulation and social intelligence among students of different ages.
- Conducting studies to identify the relationship of self-regulation and social intelligence with other variables, such as achievement motivation and thinking styles, and conducting the study on other samples.

### Acknowledgements

Researcher -Ebtsam Saad Amin Hashem - Associate Professor, Department of Kindergarten - College of Education in Wadi Al-Dawasir- thanks Prince Sattam bin Abdulaziz University for its support and funding for this research project No. (2020/02/16460). This study is supported by the Deanship of Scientific Research at Prince Sattam Bin Abdulaziz University in the Kingdom of Saudi Arabia. The researcher also acknowledges that there is no conflict in the current study.

<u>Funding sponsor</u>	<u>Funding number</u>	<u>Acronym</u>
Prince Sattam bin Abdulaziz University	2020/02/16460	PSAU

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