

## Applying Social Computing to Analyze the Effect of Negative Emotions on Social Desirability

Eun Joo Kim

Eulji University, Geonggido, South Korea  
*kej70@eulji.ac.kr*

**Abstract.** In order to improve the validity of self-reported measurement results commonly used in the social science field, it is necessary to search for independent variables that affect social desirability. This study analyzed the effects of inappropriateness on the social desirability of college students by measuring negative emotions and social desirability. For this purpose, a survey was conducted on 1000 second year college students enrolled in E University in the 4s of S city, Gyeonggi-do. The data collected for this study was analyzed using the PASW Statistics 18.0 program. The frequency and percentage were calculated to understand the general characteristics of the study subjects. An independent sample t-test was conducted to confirm which sub-factor among college students' negative emotions is the variable that has the greatest influence on social desirability and to analyze the differences between social desirability and negative emotions according to gender. And correlation analysis was conducted to analyze the relationship between the social desirability of college students and the sub-factors of negative emotions. In addition, multiple regression analysis was performed to confirm which sub-factor among college students' negative emotions is the variable that has the greatest influence on social desirability and to find out what is the most appropriate model to explain social desirability. The analysis showed that, first, the average values of social desirability and depression are higher among men than women, while petulance was higher among women than men. Second, all of the sub-factors of social desirability and negative emotion show negative correlation, and among the sub-factors of negative emotion, the correlation coefficient value between the petulance factor and social desirability was found to be the highest. This suggests that the negative emotion that mostly affects the social desirability of college students is the petulance factor. Third, it was found that among the sub-factors of negative emotion, competition, avoidance, depression, anxiety, and petulance, petulance and competition factors affect social desirability. In other words, in order to promote social desirability, it is necessary to keep petulance and competition at a low level.

**Keywords:** College students, negative emotions, social desirability, bias

## 1. Introduction

Humans are social beings. They are recognized with the abilities and virtues required by society, and have a desire to appear as such to others (Allen Rubin, Babbie, 2016). There can be a difference between the real self and the seen self. The positive degree of perceived or reported self compared to the actual self is called social desirability bias (Paulhus, 1984). Social desirability bias refers to an individual's desire or inclination to perceive themselves as socially positive or to be perceived by others (Stöber, 2001).

A person with a high social desirability bias refers to a person who has the characteristics of a behavior that is highly desirable but unlikely to actually occur and responds extremely positively. Alternatively, a person with a high social desirability bias refers to 'a person who responds extremely negatively to undesirable behaviors or traits that are common to virtually anyone' (Paulhus, 1984; Stöber, 2001).

In previous studies, people with high social desirability bias are more likely to have a different response from the reality in self-report measures of individual abilities and personality (Booth-Kewley, et al., 2007; Furnham, et al., 2002). Social desirability is related to emotional characteristics (Bartz, 1996). It was found that there was an effect on self-reported responses regarding behaviors (Cho, Ryu, 2016; Choi, Lee, 2015) such as internet game time, experiences of involvement in school violence, and eating habits.

Psychological tests measure the intelligence, aptitude, and personality of the examinee, and the theoretical constructs to be measured are implemented according to the operational definition (Park, 2002). It is different from a test that directly measures a physical object used in the natural sciences.

Therefore, the measurement method is difficult and often depends on the self-report of the examinee indirectly. Psychological tests are generally divided into cognitive tests and affective tests, and it is assumed that cognitive tests perform test tasks by maximizing the ability of the examinee, such as intelligence tests. However, the affective test is a test that asks about a feeling or attitude toward a certain event or object, such as a personality test, interest, or attitude test.

Scholars who study psychometrics argue that the results of affective tests are less stable than those of cognitive tests, and the stability of these affective tests is recognized as a problem in psychometrics (Costa, 1996; Hogan, 1992; Smith, Ellingson, 2002). They suggested distortion of the examinee's reaction as one of the causes of problems in psychometric measurement and conducted many studies on it. Controversy over response distortion, which is a psychometric problem in personality tests, is typically raised centered on social desirability, deceit, obedience and impulsivity.

Recently, a self-reported personality test for personality measurement has been used as an effective method to select and evaluate individuals within industrial organizations including large corporations (Ellingson, et al., 2001).

Interpretation of test results can be important as a tool for evaluation and prediction. In other words, the various personality traits measured in the personality test can serve as effective predictors of job performance. Therefore, it is very important for the personality test to measure how well the personality trait the researcher wants to measure. However, if the examinees recognize the purpose of the researchers and begin to conduct the examination, the validity of the examination results may become a problem.

As such, with the development of behavioral science in psychology, self-report-type tests are being widely used as a means of understanding and analyzing human behavior. The self-report type test is the most convenient method among various methods to understand human behavior and has been used in many studies. However, it is difficult to completely exclude the subjectivity of the respondents in the self-report type test. There has been discussion that the self-report test will be influenced by socially desirable responses (Chung, J., & Monroe, G. S., 2003).

There are response consistency, continuous identical response, and social desirability as evidence to confirm the reliability of the self-report test. Among the confidence indicators of the self-report test, social desirability refers to the tendency of humans to distort the measurement items without responding faithfully because they want to receive high social evaluation (Paulhus, 1991).

This response distortion is explained as social desirability. In other words, a test tool that does not show high social desirability is a highly reliable tool. Therefore, it is necessary to control the factors affecting the social desirability of the self-report test tool to derive reliable and valid test results.

Among the various factors that affect social desirability, this study intends to investigate which negative emotions among college students' negative emotions affect social desirability. The test tool this study will use, which considers social desirability in conducting a self-report test, will measure the following, according to its purpose as follows.

First, what is the difference between social desirability and negative emotions according to gender?

Second, what is the relationship between negative emotions and social desirability?

Third, which sub-factors of negative emotions affect social desirability?

## **2. Theoretical background**

People go through various emotional experiences in their daily life. Sometimes we experience positive emotions such as joy and happiness, and sometimes we

experience negative emotions such as sadness, anger, and despair. Although the emotional experience itself is natural, negative emotions and their reactions sometimes cause daily psychological discomfort. The specific emotions experienced by an individual do not necessarily result in direct actions and emotional experiences do have a variety of influences on our behavior. In general, positive emotions trigger creativity and help achieve current and future goals (Isen, et al., 1987), but negative emotions such as depression and anxiety sometimes hinder task performance or make it difficult to achieve goals (Cappelli, Cacciotti, 1985). Therefore, proper regulation of emotions is essential for a more adaptive and healthy life.

Humans reach emotions through various pathways such as physiological state, behavior, and cognition, and they control emotions by intentionally manipulating these pathways to maintain positive emotions or to change negative emotions into positive ones (Mauss, et al., 2007).

Emotions have long been considered “one of the most confusing and difficult topics in psychology”, and although the concept of emotion is commonly used in everyday life, there is no consensus among scholars on it (Frijda, 1986). In response to a fundamental question, William James (1884, 1894) viewed adaptive behavior and physiological response tendencies caused by evolutionarily important situations, and Lazarus (1991) described emotion as a response to changes induced physically or physiologically.

It was viewed as the result of an individual's interpretation, and Davidson (1984) said that it is accompanied by a change in facial expression and directs an organism's behavior. Campos, Campos and Barrett (1989) defined emotion as a simple emotion. Rather, it is the process of establishing, maintaining, or terminating the relationship between an individual's internal and external environment.

Negative emotions refers to a general dimension of subjective pain and unpleasantness that includes various aversive emotional states including anger, contempt, nausea, guilt, fear, and neurosis (Watson, et al., 1988). They were mainly found to have a negative effect on personal life satisfaction and behavior control (Park, Hwang, 2013).

Negative emotions do not simply have a negative effect on the process of pursuing a goal, but become a signal that helps to avoid obstacles in pursuing a goal and to find something new (Markman, et al., 2008). It has been found through various studies that negative emotions have an effect on task persistence (Schwarz, Clore, 1983). They are actively generated in response and reflection in the self-regulated learning stage, which consists of planning, monitoring, control, and response and reflection (Boekaerts, 2011).

These negative emotions can affect the social desirability that can appear in the self-report test (Zerbe, Paulhus, 1987). Social desirability refers to personal desires and dispositions to perceive oneself as a positive image that meets the standards of the current society or to be recognized by others (Stöber, 2001). In this regard,

Edwards (1957) viewed social desirability as a single concept and defined it as a positive response mode and type of response.

In particular, in social science research, it was said that it meant distortion that occurred in the process of respondents hiding their identity and trying to show a positive image. Paulhus and Reid (1991) interpreted social desirability by dividing it into impression management and self-deception. It contains items that can distinguish the group that wants to show a human appearance.

The self-report test results were evaluated by comparing and analyzing the external evaluation results. In other words, it can be seen that social desirability affects the measurement of individual attitudes and self-reported behaviors (Fisher, Katz, 2000). Blake (2006) defined it as a distortion of self-expression to convey a good impression to others, and in a similar context, it is also defined as a tendency to exaggerate the truth to create a favorable impression.

There has been much debate about whether social desirability is adaptive or maladaptive. Pavot, Diener, and Fujita (1990) viewed social desirability as uncritical obedience to social pressure and argued that it inhibits subjective well-being. It is argued that subjective well-being can be increased by accepting standards and supporting social activity (Hotard, et al., 1989). Based on the different arguments of scholars (Eriksen, et al., 1997; Grebot, et al., 2006; Lobel, 1987) who view social desirability as an immature defense, that is, maladaptive defense, it is a type of defense mechanism dealing with social demands or anxiety.

Kim Min-jung and Lee Ki-hak (2009) examined social desirability and defensiveness using the Marlowe-Crowne Social Desirability Scale (MCSD). On the other hand, in the study of Choi (2007), when BIDR-7 was used, there was a significantly high positive correlation between social desirability and adaptive defense types (humor, denial, sublimation, omnipotence). It reported the highest positive correlation and the highest negative correlation between impression management and immature defense styles (activation, separation, projection, etc.) (Bora, 2007). Social desirability was largely studied according to a single dimension and a two-dimensional approach (J Crowne, Marlowe, 1960; Fisher, Katz, 2000).

According to a study by Crowne and Marlowe (1960), who defined a unidimensional construct, social desirability refers to the desire to act and be recognized in a culturally appropriate and acceptable way. The Marlowe-Crowne Social Desirability Scale (MCSD) consists of 18 positive and 18 negative items, a total of 33 items, and is a general measure of motivation. This supplemented the limitation that Edwards (1957)'s Social Desirability Scale (SD), which consists of 79 items selected from 150 of the MMPI, contains pathological meanings and thus the meaning of the score is unclear, and is socially desirable but not commonly seen. It is possible to measure behaviors that attempt to positively represent both behaviors and non-behavioral behaviors (Edwards, 1957).

Later, a two-factor model that can supplement the simple explanatory power of a single-dimensional configuration was constructed according to specific hypotheses. First, Damarin and Messick (1965) organized social desirability into 'propaganda bias' and 'autistic bias toward narcissism'. Propaganda bias is an attitude toward the outside, meaning a conscious effort to lead one's evaluation in a positive and desirable direction, and autistic bias means a distortion of self-protection through rationalization as an attitude toward oneself.

Afterwards, researchers began to distinguish social desirability into self-deception and deception of others. According to the SDR scale of Sackeim and Gur (1979), self-deception is an excessively unrealistic positive description of oneself and the unconscious intention to believe it.

Deception refers to the conscious tendency to misrepresent oneself in order to deceive others. Based on this study, Paulhus and Reid (1991) conducted a study by dividing social desirability into two factors, 'impression management' and 'self-deceptive enhancement'. Impression management refers to the conscious effort to show a favorable image of oneself to others, and may vary depending on circumstances and motives. On the other hand, self-deceptive exaltation refers to an unconscious tendency to view oneself from a favorable point of view and to protect oneself safely according to social standards.

Paulhus (2002) presented three definitions for each level of theoretical elaboration for the construct of social desirability. First, it is a method that uses a minimal construct. This method does not provide an operational definition of social desirability, but uses a method of defining social desirability through the responses of test responders.

Among the personality test items, the method of selecting the items that received extreme ratings through the evaluation of the possibility of reflecting social desirability is used, or the items that define social desirability as items that can distinguish between the group who want to look good and the group who respond honestly will be. Second, we use a more sophisticated construct of "exaggerated positivity" for social desirability.

This is a way to make an operational definition. Social desirability items were defined so that responders can answer differently based on their gender. Third, social desirability was defined by applying the method of examining the correlation between measuring social desirability in a self-reporting way and the evaluation of a respondent by a self-reporting definition focusing on the practical measurement of social desirability.

In a study analyzing the relationship between social desirability bias and demographic characteristics, first, according to a study on children and adolescents, it appears that the social desirability bias decreases as the age increases. Dadds, Perrin, and Yule (1998) compared a group of children aged 7-10 with a group of 14-year-

olds, and found that the social desirability bias of young children was significantly higher.

Allaman, Joyce, and Crandall (1972) compared children aged 6-12 into two groups based on the median value. As a result, younger children had higher social desirability bias than older children. Also, in a study conducted by Kalliopuska (1992) with children aged 9 to 12, the social desirability bias decreased as the age increased. The same results were also found in Crandall, Crandall, and Katkovsky (1965) for grades 3-12 and Lepper, Corpus, and Iyengar (2005), who compared grades 3 to 8. Therefore, in the case of adolescents in the growing stage, it can be seen that there is a tendency that the social desirability bias decreases as the age increases.

On the other hand, in the case of adults, a pattern of increasing social desirability bias appears as the age increases. In Mwamwenda (1995), the social desirability bias of the adult group in their late twenties was lower than that of adolescents with an average age of about 20 has been reported to occur. As a result of meta-analysis of 19 studies conducted between 1974 and 1995 by Ones and Viswesvaran (1998), it was found that the social desirability bias tends to increase with increasing age.

In conclusion, it can be seen that the social desirability bias changes through the U-shape through the life cycle. Recalling that, as discussed above, social desirability bias is defined as the tendency to have relatively extreme responses (eg, very much or not at all), these U-shaped changes favor relatively extreme responses in childhood and old age. It is also consistent with the study results (Shin, Son, 2014; Austin et al., 2006).

The fact that the social desirability bias decreases as the age of adolescent students increases can be explained in relation to the development of metacognition and self-concept. It is known that young children have a high self-concept due to the immature metacognition and lack of social experience. Thus, they perceive themselves as superior and upright to a considerable extent.

This unrealistically high self-concept appears as a social desirability bias. However, this tendency tends to be gradually alleviated as social comparison experiences are accumulated and opportunities for self-reflection become frequent. If the same tendency exists for Korean students, the social desirability bias will tend to decrease from elementary school to high school. On the other hand, individuals who maintained a critical view of society in their youth tend to affirm and internalize the rules of their society as vested interests as they go through middle age and adulthood. This tendency may explain the increase in social desirability bias in adulthood.

There are few studies reporting the relationship between variables indicative of socioeconomic status (SES) (eg, household income, parental education, regional size) and social desirability. In the study of Crandall, Crandall, and Katkovsky (1965), there was no significant relationship between SES and social desirability among students in grades 3 to 12. On the other hand, in a study by Miller et al. (2014) with 4th grade students, it was found that students with low SES had higher social

desirability bias. So far, it is difficult to find studies on the relationship between regional scale and social desirability bias.

On the other hand, the relationship between gender and social desirability bias does not appear consistently. In some studies, it is reported that the social desirability bias of girls under the age of 10 is higher than that of boys, but there is no gender difference at the age thereafter (Kang, Park, 2014). Studies reporting high social desirability of women (Chung, Monroe, 2003; Crandall, et al., 1965), studies reporting high social desirability of men (Seol et al., 2005; Fraboni, Cooper, 1989; Ones, Viswesvaran, 1998), and studies that reported no significant gender differences are mixed (Kim, 2018; Lewinsohn, et al., 1998; Meydith, et al., 2003; Robinette, 1991).

It is presumed that these differences in research results are due to differences in the characteristics of the groups, such as social background and target age, for each study. Therefore, the analysis of differences in social desirability and inappropriate emotions according to gender differences in this study suggests the need for a study on gender differences in the social desirability bias of Korean college students.

### **3. Research method**

In this study, from May 1 to June 2, 2021, a survey was conducted among college students attending a four-year university located in Gyeonggi-do. This study is a quantitative study to confirm the influence of negative emotional factors affecting the social desirability of college students. Multiple regression analysis was performed to identify which sub-factor among college students' negative emotions is the variable that has the greatest influence on social desirability and to find out which model can best explain social desirability. The model of this study is as follows.

$$Y = \beta_0 + \beta_1 (\text{compete}) + \beta_2 (\text{evasion}) + \beta_3 (\text{depressed}) + \beta_4 (\text{unrest}) + \beta_5 (\text{petulance})$$

#### **3.1. Research subject**

This study measured the negative emotions and social desirability of all second-year students enrolled in 4-year E university in S city, Gyeonggi-do. For the recruitment of research subjects, an online survey was conducted after posting an advertisement for applicants on the website of the Faculty of Liberal Arts targeting those who took liberal arts courses. In addition, in order to comply with research ethical standards such as personal information protection and prior consent in online survey research conducted by individuals, consent forms from research participants were collected and submitted in electronic file form during the online survey. The valid sample used in this study was 995 students. The general characteristics of the study subjects are presented in Table 1.



Table 1: General characteristic (N=995)

		Gender		Total
		Male	Female	
Department	Department of Nursing	9	80	89
	Department of Physical Therapy	25	45	70
	Department of Beauty and Cosmetic Science	2	37	39
	Department of Radiology	45	39	84
	Department of Health, Environment and Safety	19	40	59
	Department of Sports and Outdoors	19	21	40
	Department of Food Industry and Food Service	19	41	60
	Department of Food and Nutrition	4	32	36
	Department of Optics	28	37	65
	Department of Early Childhood Education	2	42	44
	Department of Emergency Rescue	14	18	32
	Medical IT Department	31	31	62
	Department of Medical Management	20	21	41
	Department of Medical Engineering	20	15	35
	Department of Medical Public Relations Design	4	25	29
	Department of Clinical Pathology	16	54	70
	Funeral Guidance Department	8	16	24
	Department of Addiction Rehabilitation and Welfare	11	31	42
	Department of Dental Hygiene	3	71	74
Total		299	696	995

### 3.2. Measuring tool

To measure the negative emotions and social desirability of college students, the MLST-II(Multi-dimensional Learning Strategy Test, 2nd) learning strategy test tool for college students was used (Hakjisa, 2017). This questionnaire consists of 17 subscales and 185 questions in 4 domains (personal characteristics, emotional characteristics, motivational characteristics, and behavioral characteristics).

This test tool consists of reliability indicators (response consistency, consecutive identical responses, social desirability, non-response), additional information (grades, learning time, sexual satisfaction, psychological discomfort), personality characteristics (efficacy, result expectation, sincerity), and emotional characteristics (depression, anxiety, petulance), motivation characteristics (learning motivation, competitive motivation, avoidance motivation), and behavioral characteristics (time management, study environment, class taking, note taking, concentration strategy, reading strategy, memory strategy, test strategy).

It is composed of different types (initiative, conscientious, latent, and stagnant). In the MLST-II item composition, social desirability among reliability indicators was used as a dependent variable, and emotional characteristics (depression, petulance, anxiety) and motivation characteristics (competition motive, avoidance motive) were used as independent variables.

The social desirability index, which is a dependent variable in this study, is a reliability index and refers to the degree to which people intentionally try to be seen well by others. Among negative emotions, which are independent variables, the indicators of depression, anxiety, and petulance mean the degree of emotional difficulty or pain for the corresponding emotion. Competitive motivation also refers to the desire to show off one's abilities or achievements to others, the competitive spirit to be ahead of others, and the desire to be recognized. Avoidance motivation refers to a demand not to show one's inferiority or deficiencies, and to avoid performing tasks.

Table 2: Metrics of MLST-II learning strategy test

Area	Details (underlined items are negative sentiment)
Reliability Indicators	Response consistency, successive identical responses, social desirability, non-response
Additional Information	Grades, learning time, sexual satisfaction, psychological discomfort
Psychological Traits	Efficacy, expectation of results, sincerity

Emotional Traits	<b><u>depressed, irritable, anxious</u></b>
Synchronous Characteristics	Learning motivation, <b><u>competition motivation, avoidance motivation</u></b>
Behavioral Traits	Time management, study environment, class taking, note taking, concentration strategy, reading strategy, memory strategy, test strategy
Learning Type	Initiative, conscientious, latent, stagnant

### 3.4. Data analysis

PASW Statistics 18.0 program was used to analyze the data collected in this study. Frequency and percentage were calculated to understand the general characteristics of the study subjects, and an independent sample t-test was performed to analyze whether the difference in the mean values of the measured variables according to the gender difference was statistically significant.

Cronbach's  $\alpha$  coefficient was calculated to determine the degree of internal fit of the survey tool. The mean and standard deviation were calculated as descriptive statistics of negative emotions and social desirability. In addition, multiple regression analysis was performed to confirm which negative emotions among college students' negative emotions are the variables that have the greatest influence on social desirability and to find out what is the most appropriate model to explain social desirability.

At this time, as a method of selecting variables to be included in the most appropriate regression model, when adding variables one by one, the significance of each variable already included in the model is tested and if not significant, variables are selected using the most used step selection method.

In addition, in order to increase the predictive power of the multiple regression equation, the correlation between the dependent variable and each independent variable should be high and the correlation between the independent variables should be low. In other words, tolerance and variance inflation factor (VIF) were calculated to check multicollinearity between independent variables.

When both tolerance and VIF are close to 1, it is judged that there is no multicollinearity, and in the case of VIF, it is considered that there is multicollinearity when it is 10 or more. The maximum tolerance limit was 0.994 and the VIF was 6.106, confirming that the correlation between independent variables was not high enough to be a problem.

That is, both tolerance and VIF met the basic assumptions for multiple regression analysis.

## 4. Results

### 4.1. Differences between social desirability and negative emotions according to gender

In order to analyze the influence of negative emotions on the social desirability of college students, descriptive statistics of the measurement variables were calculated, and the average value of the measurement variables according to the gender difference was calculated. The analysis results are presented in Tables 3~4.

Table 3: Descriptive statistics of social desirability and negative emotion (N=995)

Sub-factor	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
Social desirability	14.40	81.30	52.7782	9.70538
competition	32.90	79.52	48.9109	9.84216
Evasion	28.51	85.05	51.0449	10.83531
depression	38.89	101.32	52.0751	12.01090
Unrest	36.25	83.01	51.7781	10.44544
Petulance	36.11	94.42	49.8595	11.37812

In Table 3, the average value of social desirability of college students was 52.77. Among the sub-factors of negative emotion, the average value of depression was the highest at 52.07, and the average value of competition was the lowest at 48.91.

Table 4: Descriptive statistics and independent sample t-test of gender(N=995)

		N	M	SD	t	p
Social desirability	Male	299	55.2625	8.62701	5.366***	.000
	Female	696	51.7109	9.95041		
	Total	995	52.7782	9.70538		
Competition	Male	299	49.0720	9.65967	0.338	0.735
	Female	696	48.8417	9.92560		
	Total	995	48.9109	9.84216		
Evasion	Male	299	50.7456	10.58219	-0.571	0.568
	Female	696	51.1735	10.94725		
	Total	995	51.0449	10.83531		

Depression	Male	299	52.4751	12.67984	0.688*	0.491
	Female	696	51.9033	11.71703		
	Total	995	52.0751	12.01090		
Unrest	Male	299	51.6795	9.64302	-0.195	0.845
	Female	696	51.8205	10.77821		
	Total	995	51.7781	10.44544		
Petulance	Male	299	49.0911	10.65473	-1.397*	0.163
	Female	696	50.1897	11.66699		
	Total	995	49.8595	11.37812		

\*\*\* $p < .001$ , \* $p < .05$

As a result of calculating descriptive statistics according to gender in Table 4, social desirability, competition, and depression were found to be relatively higher in men than in women. Petulance showed to be higher in women than men. Other factors did not show significant differences between men and women.

An independent sample t-test was performed to analyze whether the difference in the mean values of the measured variables according to the gender difference was statistically significant.

As a result of the analysis, only the social desirability variable, the depressed variable, and the petulance variable at the significance level of .05 and .001 showed that the difference in the mean values of the measured variables according to the gender difference was statistically significant.

The social desirability variable and the depressed variable showed a higher average value for men than for women, and the average value for the petulance variable was higher in women than in men.

#### 4.2. The relationship between social desirability and negative emotions

Table 5 presents the results of correlation analysis to find the relationship between competition, evasion, depression, unrest, and petulance among the sub-factors of college students' social desirability and negative emotions.

Table 5: Correlation between social desirability and negative emotion (N=995)

	Social desirability	Competition	Evasion	Depression	Unrest	Petulance
Social desirability	1.000					

Competition	-.300	1.000				
Evasion	-.331	.660	1.000			
Depression	-.358	.350	.511	1.000		
Unrest	-.324	.479	.589	.655	1.000	
Petulance	-.450	.435	.583	.796	.705	1.000

As a result of examining the correlation between the social desirability of college students and the sub-factors of negative emotion in Table 5, all of the sub-factors of social desirability and negative emotion show a negative correlation, and among the sub-factors of negative emotion, the correlation coefficient value between the petulance factor and social desirability was found to be the highest. This suggests that the negative emotion that mostly affects the social desirability of college students is the petulance.

#### 4.3. Effect of Negative Affective Factors on Social Desirability

Tables 6 and 7 show the results of testing the statistical significance of the model for measuring the effect of negative emotional factors on college students' social desirability.

Table 6: ANOVA for regression model (N=995)

	Sum of squares	df	Mean square	F	p
Regression Model	20196.929	2	10098.464	136.420	.000 <sup>f</sup>
Residual	73432.388	992	74.025		
Total	93629.317	994			
$R^2(\text{adj. } R^2) = .216(.214)$					

Table 6 shows the the results of the ANOVA test to analyze whether the regression model is statistically significant. If the results are significant through analysis of variance, the model is judged to be suitable. Here, the F statistic is 136.420, and the significance probability for the regression model was .000, which is lower than .05. It was confirmed that the hypothesis that negative emotional factors affect the social desirability of college students was established. The  $R^2$  value is the explanatory power of the dependent variable explained by the independent variable. The adjusted  $R^2$  value is the proportion of variance explained by the independent variables that actually affect the dependent variable. In other words, as the influence

of negative affective factors that actually affect social desirability, petulance and competition have an influence of about 21.4% on social desirability.

Table 7: Multiple regression analysis of social desirability (N=995)

Independent variable	Unstandardized regression coefficients		Standardized regression coefficients	t	p	Collinearity Statistics	
	B	Standard error	$\beta$			tolerance	VIF
(constant)	75.741	1.538		49.233	.000		
petulance	-.336	.027	-.394	-12.605	.000	.811	1.233
competition	-.127	.031	-.129	-4.133	.000	.811	1.233

As a result of multiple regression analysis on social desirability, it was confirmed that there was no multicollinearity with tolerance and VIF of 0.1 or more and less than 10, respectively. Next, as a result of checking the significance of each pathway, it was confirmed that the effect of irritation ( $p < .001$ ) and competition ( $p < .001$ ) on social desirability, excluding avoidance, depression, and anxiety factors, among the sub-factors of negative emotion was confirmed. As a result of checking the non-standardized coefficients for significant variables, both irritation ( $B = -.336$ ) and competition ( $B = -.127$ ) were negative, indicating that social desirability decreases as irritation and competition increase. In addition, it was found that irritation ( $\beta = -.394$ ) and competition ( $\beta = -.129$ ) had an effect on social desirability in the order of irritation and competition.

The regression equation showing the relationship with negative emotions (independent variables) explaining social desirability is as follows.

$$\text{Social Desirability} = 75.741 - .336 (\text{Angry}) - .127 (\text{Competitive})$$

In this equation,  $-.336$  and  $-.127$  are the standardized regression coefficients when each variable is standardized. According to the derived regression equation, when petulance and competition are 0, the average of social desirability is 75.741, and when petulance increases by 1 point when other independent variables are the same, social desirability decreases by  $-.336$  points on average, and competition is 1. As the point increases, it can be predicted that the social desirability will decrease by  $-.127$  points

on average. Therefore, it can be seen that social desirability is negatively affected by irritation and competition. In other words, in order to promote social desirability, it is necessary to keep petulance and competition at a low level.

## 5. Conclusions and implications

According to a previous study that people with high social desirability are more likely to have different responses from actual self-report measures on individual abilities and personality, social desirability bias is related to emotional characteristics (Bartz, 1996), Internet game time, and school violence. It broadly affects self-reported responses to behaviors (Cho, Ryu, 2016; Choi, Lee, 2015) such as implicated experiences and eating habits. Therefore, in order to improve the validity of self-report measurement results commonly used in the social science field, it is necessary to search for independent variables that affect social desirability.

In this study, negative emotions and social desirability were measured among 1,000 college students, and what kind of negative emotions had an effect on their social desirability was analyzed. For this purpose, a study was conducted on all 2nd year students enrolled in E University in the 4s of S city, Gyeonggi-do.

As a result of the study, first, the social desirability and depression variables showed a higher average value for men than for women, and the average value for the petulance variable was higher in women than in men.

Second, all of the sub-factors of social desirability and negative emotion show negative correlation, and among the sub-factors of negative emotion, the correlation coefficient value between the petulance factor and social desirability was found to be the highest. This suggests that the negative emotion that mostly affects the social desirability of college students is petulance.

Third, it was found that among the sub-factors of negative emotion, petulance and competition factors affect social desirability. In order to secure the validity of the self-report measurement, the results of this study need to prevent petulance and competition factors from appearing or exerting influence among the negative emotions of the respondents.

In particular, the 20s are a time to prepare for economic, mental, and physical independence, and there is a risk of difficulties due to emotional instability or problems of adaptation. In addition, they are vulnerable to various psychological problems by experiencing various stresses such as academic and employment, economic problems, relationships with the opposite sex and friends, and establishment of values. Therefore, it is necessary to reduce petulance and competition factors among college students to maintain a stable emotional state. In the case of adults, as the age increases, the social desirability bias tends to increase. Mwamwenda (1995) reported that the social desirability bias of the adult group in their late twenties was lower than that of the average age of about 20, but in many studies, the social desirability bias tends to increase during the period from youth to



middle age to old age (Mwamwenda, 1995; Erskine, et al., 2007; Kozma, Stones, 1988; Thomsen, et al., 2005).

People go through various emotional experiences in their daily life. Emotion is a psychological mechanism shared by all people and includes emotions such as anger, fear, and joy, as well as cognitive, physiological, expressive, and social factors. Sometimes we experience positive emotions such as joy and happiness, and sometimes we experience negative emotions such as sadness, anger, and despair. Although the emotional experience itself is natural, negative emotions and their reactions sometimes cause daily psychological discomfort. Although the specific emotions experienced by an individual do not necessarily result in direct behavior, emotional experiences do have a variety of influences on our behavior. In general, positive emotions trigger creativity and help achieve current and future goals (Isen, 1987), but negative emotions such as depression and anxiety sometimes interfere with task performance or make it difficult to achieve goals (Cappelli, Cacciotti, 1985). Therefore, it can be seen that proper emotional regulation is essential for a more adaptive and healthy life.

In addition, social desirability as one of the causes of response distortion has been studied for a long time and various measures have been developed to measure it. Controversy continues as to whether or not it should be considered because it is only a trait. Based on the situation in various personality tests and selection, it is possible to check whether the control of social desirability affects the job concept or relationship, or compare the measurement scores in a directing situation that induces a faking and a natural situation, etc. Its effects have been continuously confirmed and compared through research and experimental studies.

Based on these controversies, this study focuses on factors such as competition, evasion, depression, unrest, and petulance as negative emotions. In order to derive accurate responses through various self-report measures in the social sciences and to reduce response distortion, it is necessary to control the negative emotions of respondents. In particular, as in the results of this study, petulance and competition should not be induced. These results suggest that the psycho-emotional state of the respondent should be considered in order for a self-reported diagnostic survey to be conducted effectively in the future.

Recently, the Ministry of Education is emphasizing the establishment of a systematic safety net in cooperation with external specialized agencies to provide customized support for students who are experiencing psychological and emotional difficulties as daily life is restricted due to COVID-19 and non-face-to-face classes continue. To this end, for early detection of high-risk groups, it is proposed to conduct mental health examinations for students in transition (new students and sophomores) in the first half of the year, and to provide customized management of selected students in cooperation with local mental health and welfare centers. In particular, it is strengthening administrative and financial support so that universities can play a

pivotal role in promoting student mental health, and the operation of various student mental health programs. Maintaining and managing the psychological and emotional state of college students in a healthy state has become an important task in these government policies as well.

Despite the positive implications of the results of this study, the following limitations were identified.

First, there is a limit to generalizing the results of this study to all college students because the survey subjects were collected from a sample only.

Second, the scope of the study to control all the influences of other independent variables in terms of social desirability bias other than negative emotions is limited.

Third, in this study, the 'size' of negative emotions was indicated and used as data, but the work of clarifying or classifying which emotions were not dealt with. Negative emotion refers to the general dimension of subjective pain and unpleasantness, including a variety of aversive emotional states, such as anger, contempt, nausea, guilt, fear, and neurosis. In future research, it may be possible to subdivide the types of negative emotions.

In addition to the limitations of this study, another implication will be found if a follow-up study is conducted on the difference between college students who experience negative emotions and those who do not.

## References

Allaman, J. D., Joyce, C. S., & Crandall, V. C. (1972). The antecedents of social desirability response tendencies of children and young adults. *Child Dev.* 43(4), 1135-1160.

Allen Rubin., & Earl R. Babbie (2016). *Research Methods for Social Work*, 8th Edition, Ki-duk Kim, Yong-seok Kim, Tae-gyun Yoo, Ki-young Lee, Seon-woo Lee, Seul-gi Jeong (2016), Seoul: Sensei Learning Korea Co., Ltd.

Austin, E. J., Deary, I. J., & Egan, V. (2006). Individual differences in response scale use: Mixed Rasch modelling of responses to NEO-FFI items. *Personality and Individual Differences*, 40(6), 1235-1245. doi:10.1016/j.paid.2005.10.018.

Bartz, A. E., Blume, N. E., & Rose, J. (1996). Gender differences in self-report measures of anger: The role of social desirability and negative affect. *Journal of Social Behavior & Personality*, 11(5), 241–253.

Boekaerts M. (2011). Emotions, emotion regulation, and self-regulation of learning, *Handbook of Self-Regulation of Learning and Performance* eds Zimmerman B. J., Schunk D. H. (New York, NY: Routledge; ) 408–425.

Booth-Kewley, S., Larson, G. E., & Miyoshi, D. K. (2007). Social desirability effects on computerized and paper-and-pencil questionnaires. *Computers in Human Behavior*, 23(1), 463–477. <https://doi.org/10.1016/j.chb.2004.10.020>

Bora Choi (2007). Validation of social desirability scales. *Master Thesis, Ewha Womans University*. Korea

Blake, B. F., Valdiserri, J., Neuendorf, K. A., & Nemeth, J. (2006). Validity of the SDS-17 measure of social desirability in the American context. *Personality and Individual Differences*, 40(8), 1625–1636.

Campos, J. J., Campos, R. G., & Barrett, K. C. (1989). Emergent themes in the study of emotional development and emotion regulation. *Developmental Psychology*, 25(3), 394.

Cappelli, M., & Cacciotti, C. (1985). Effects of mood manipulation on personality and task performance. *Perceptual and motor skills*, 61(1), 67-72.

Cho, Minkyu, & Ryu, Seongjin. (2016). A study on respondents' perception and response bias in self-report survey: Focusing on Internet game use time. *Journalism Research*, 16(4), 335-373.

Choi, Moonyoung, & Lee, Dong-hyeong. (2015). Potential bias factors for self-reporting of the role of bullying participation: Focusing on the variables of individual characteristics and evaluation conditions. *Journal of the Korean Psychological Association: School*, 12(2), 203-224.

Chung, J., & Monroe, G. S. (2003). Exploring social desirability bias. *Journal of Business Ethics*, 44(4), 291-302.

Costa, P. T. (1996). Work and personality: Use of the NEO-PI-R. In M.L. Riecke (Eds.), 16PF fifth edition, technical manual. Campaign, IL: Institute for Personality and Ability Testing.

Crandall, V. C., Crandall, V. J., & Katkovsky, W. (1965). A children's social desirability questionnaire. *Journal of Consulting Psychology*, 29(1), 27-36. [doi:10.1037/h0020966](https://doi.org/10.1037/h0020966)

Crowne, D. P., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology*, 24(4), 349–354.

Dadds, M. R., Perrin, S., & Yule, W. (1998). Social desirability and self-reported anxiety in children: An analysis of the RCMAS Lie Scale. *Journal of Abnormal Child Psychology*, 26(4), 311-317. doi:10.1023/A:1022610702439

Damrin, F., & Messick, S. (1965). Response styles as personality variables; A theoretical integration of multivariate research. *Educational Testing Service*, 1, 116.

Davidson, Donald (1984). *Inquiries into Truth and Interpretation*, Oxford: Clarendon Press.

Edwards, A. L. (1957). *The social desirability variable in personality assessment and research*. New York: Dryden.

Ellingson, J. E., Smith, D. B., & Scakett, P. R. (2001). Investigating the influence of social desirability on personality factor structure. *Journal of Applied Psychology*, 86, 122-133.

Eriksen, H. R., Olff, M., & Ursin, H. (1997). The CODE: A revised battery for coping and defense and its relations to subjective health. *Scandinavian Journal of Psychology*, 38(3), 175–182. <https://doi.org/10.1111/1467-9450.00025>

Erskine, J.A.K., Kvavilashvili, L. & Kornbrot, D.E. (2007). The predictors of thought suppression in young and old adults. *Personality and Individual Differences*, 42, 1047–1057.

Fisher, R. J., & Katz, J. E. (2000). Social-desirability bias and the validity of self-reported values. *Psychology & Marketing*, 17(2), 105–120.

Fraboni, M., & Cooper, D. (1989). Further validation of three short forms of the Marlowe-Crowne Scale of Social Desirability. *Psychological Reports*, 65(2), 595-600. doi:10.2466/pr0.1989.65.2.595

Frijda, N. H. (1986). *The Emotions*. Cambridge University Press.

Furnham, A., Petrides, K. V., & Spencer-Bowdage, S. (2002). The effects of different types of social desirability on the identification of repressors. *Personality and Individual Differences*, 33(1), 119–130.

Grebot E, Paty B, & Girard Dephanix N. (2006). Styles défensifs et stratégies d'ajustement ou coping en situation stressante. *Encéphale*, 32, 315-324.

Hakjisa. (2017). *MLST-II (Multi-dimensional Learning Strategy Test, 2nd) learning strategy test tool*. Seoul: Hakjisa

Hogan, R. T. & Hogan, J. C. (1992). *Manual for the Hogan Personality Inventory*. Tulsa, OK: Hogan Assessment Systems.

Hotard, S. H., McFather, R. M., McWhirter, R. W. & Stegall, M. E. (1989). Interactive effects of extraversion, neuroticism, and social relationships on subjective well-being. *Journal of Personality and Social Psychology*, 57, 321-331.

Isen, A. M., Daubman, K. A., & Nowicki, G. P. (1987). Positive affect facilitates creative problem solving. *Journal of personality and social psychology*, 52(6), 1122.

JAMES, W. (1884). What is an Emotion?. Pp. 168–87 in William James: Essays in Psychology, edited by Frederick H. Burkhardt, Fredson Bowers and Ignas K. Skrupskelis. Cambridge, MA: Harvard University Press.

JAMES, W. (1894). The Physical Basis of Emotion. Pp. 299–314 in William James: Essays in Psychology, edited by Frederick H. Burkhardt, Fredson Bowers and Ignas K. Skrupskelis. Cambridge, MA: Harvard University Press.

Kagan, S. (1994). *Cooperative Learning*. San Juan Capistrano, CA: Kagan Cooperative Learning.

Kalliopuska, M. (1992). Social desirability related to children's age, sex, and willingness to help. *Psychological Reports*, 70(2), 479-482.

Kang, Hyeon-Kyung, Park, Young-Shin. (2014). Prosociality according to age, gender, and intentional control of preschool children The difference between lies. *Journal of the Korean Psychological Association: Development*, 27(1), 1-18.

Kim, Yongseok. (2018). Validation and application of the Social Desirability Scale (SDS-24). *Social Welfare Research*, 49(3), 87-114. doi:10.16999/kasws.2018.49.3.87

Kozma, A., & Stones, M. J. (1988). Social desirability in measures of subjective well-being: Age comparisons. *Social Indicators Research*, 20(1), 1–14.

Lazarus, R. S. (1991). *Emotion and adaptation*. Oxford University Press.

Lepper, M. R., Corpus, J. H., & Iyengar, S. S. (2005). Intrinsic and extrinsic motivational orientations in the classroom: Age differences and academic correlates. *Journal of Educational Psychology*, 97(2), 184-196.

Lewinsohn, P. M., Gotlib, I. H., Lewinsohn, M., Seeley, J. R., & Allen, N. B. (1998). Gender differences in anxiety disorders and anxiety symptoms in adolescents.

*Journal of Abnormal Psychology*, 107(1), 109-117. doi: 10.1037//0021-843x.107.1.109

Lobel, T. E., Kashtan, O., & Winch, G. L. (1987). The relationship between defense mechanisms, trait anxiety and need for approval. *Personality and Individual Differences*, 8(1), 17–23.

Markman, K. D., McMullen, M. N., & Elizaga, R. A. (2008). Counterfactual thinking, persistence, and performance: A test of the reflection and evaluation model. *Journal of Experimental Social Psychology*, 44(2), 421–428.

Mauss, I.B.; Crystal, L.C.; Jennifer, Y.L.; Gross, J.J. (2007). Individual differences in cognitive reappraisal: Experimental and physiological responses to an anger provocation. *Int. J. Psychol*, 66, 116–124.

Merydith, S. P., Prout, H. T., & Blaha, J. (2003). Social desirability and behavior rating scales: An exploratory study with the child behavior checklist/4–18. *Psychology in the Schools*, 40(2), 225-235.

Miller, P. H., Baxter, S. D., Hitchcock, D. B., Royer, J. A., Smith, A. F., & Guinn, C. H. (2014). Test-retest reliability of a short form of the children’s social desirability scale for nutrition and health-related research. *Journal of Nutrition Education and Behavior*, 46(5), 423-428.

Minjeong Kim, & Ki-Hak Lee. (2009). A Study of Self-Esteem Types based on Self-Esteem Instability, Self-Esteem Level, and Defensiveness, *Korean Counseling Psychology Association*, 10(3), 1413-1425.

Mwamwenda, T. S. (1995). Age differences in social desirability. *Psychological Reports*, 76(3), 825-826. doi:10.2466/pr0.1995.76.3.825

Ones, D. S., & Viswesvaran, C. (1998). The effects of social desirability and faking on personality and integrity assessment for personnel selection. *Human Performance*, 11(2-3), 245-269. doi:10.1080/08959285.1998.9668033

Park, Jae-Hwang & Hwang, Ji-Young. (2013). The relationship between stress and suicidal ideation in college students: negative mood control expectations, positive emotions, and the modulating effects of negative emotions. *Adolescent Studies*, 20(5), 25-48.

Paulhus, D. L. (1984). Two-component models of social desirable responding. *Journal of Personality and Social Psychology*, 46, 598-609.

Paulhus, D. L. (1991). Measurement and control of response bias. In J. P. Robinson, P. R. Shaver, & L. S. Wrightsman (Eds.), *Measures of personality and social psychological attitudes* (pp. 17–59). Academic Press. <https://doi.org/10.1016/B978-0-12-590241-0.50006-X>

Paulhus, D. L. (2002). Socially desirable responding: The revolution of a construct In H. I. Braum, D. N. Jackson & D. E. Wiley (Eds.), *The role of constructs in psychological and educational measurement* (pp. 49-69). Mahwah, NJ: Lawrence Erlbaum.

Paulhus, D. L., & Reid, D. B. (1991). Enhancement and denial in socially desirable responding. *Journal of Personality and Social Psychology*, 60(2), 307–317.

Pavot, W., Diener, E., & Fujita, F. (1990). Extraversion and happiness. *Personality and Individual Differences*, 11(12), 1299–1306.

Robinette, R. L. (1991). The relationship between the Marlowe-Crowne form C and the validity scales of the MMPI. *Journal of Clinical Psychology*, 47(3), 396-399

Sackeim, H. A., & Gur, R. C. (1979). Self-deception, other-deception, and self-reported psychopathology. *Journal of consulting and clinical psychology*, 47(1), 213.

Schwarz, N., & Clore, G. L. (1983). Mood, misattribution, and judgments of well-being: Informative and directive functions of affective states. *Journal of Personality and Social Psychology*, 45(3), 513–523.

Seol, Hyunsoo, Kim, Eunsoo, Kim, Dongmin. (2005). Marlowe-Crowne's Social Orientation Using the Rasch Model Scale justification. *Education Evaluation Research*, 18, 101-123.

Shin, Hakkyung, Son, Wonsuk. (2014). TIMSS 2011 Math Interest Scale Response Form with Mixed Rasch Model quest. *Education Evaluation Research*, 27, 429-448.

Shin Kyung-ran, & Hong Chang-hee. (2013). The relationship between perceived problem-solving ability and suicidal ideation of college students: the mediating effect of depression. *Journal of the Korean Psychological Association: Cultural and Social Issues*, 19(3), 389-407.

Smith, D. B., & Ellingson, J. E. (2002). Substance versus style: A new look at social desirability in motivating contexts, *Journal of Applied Psychology*, 87, 211-218.

Stöber, J. (2001). The Social Desirability Scale-17 (SDS-17): Convergent validity, discriminant validity, and relationship with age. *European Journal of Psychological Assessment*, 17, 222-232.

Thomsen, M. S., Gurgel, C. F. D., Fredericq, S. & McGlathery, K. J. (2005). *Gracilaria vermiculophylla* (Rhodophyta, Gracilariales) in Hog Island Bay, Virginia: a cryptic alien and invasive macroalga and taxonomic correction. *J. Phycol.* 42: 139–41.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: the PANAS scales. *Journal of personality and social psychology*, 54(6), 1063.

Zerbe, W. J., & Paulhus, D. L. (1987). Socially desirable responding in organizational behavior: A reconception. *The Academy of Management Review*, 12(2), 250-264.