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ARTICLE

Uskudar Emotional Wisdom Scale (USEWS) validity and reliability studies and examining psychometric properties

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ABSTRACT

Without emotions, people cannot express themselves. In our age, Wisdom Psychology has gained importance as a methodology that reveals the importance of meaning and inquiry skills. It is evident that emotions should be reconsidered from a multidimensional existential perspective. Emotional Wisdom brought about the questioning of some new skills and created the need for a new measurement tool to obtain concrete data. In this study, it was aimed to develop a valid and reliable scale to measure emotional wisdom and to contribute to the related literature by performing its first psychometric analysis. Quantitative methodology was used in this study. The research sample consisted of 1300 volunteer participants from across Turkey. As a result of the validity and reliability studies, a 6-factor scale named Uskudar Emotional Wisdom Scale (USEWS) emerged. The internal consistency reliability coefficient Cronbach Alpha value of the scale, which explained 51.87% of the total variance, was found to be .88. Confirmatory factor analysis of the scale resulted in acceptable goodness-of-fit values. In the criterion validity study, it was found to be related to the Revised Schutte Emotional Intelligence Scale (r=.60). In the first psychometric examinations conducted with effect analyzes, men's emotional wisdom scores were found to be high and of medium effect (d=0.38; >0.2<0.5).

Keywords: emotional intelligence; emotional wisdom; positive psychology; validity and reliability

1. Introduction

While the industrial revolution and modernism exalted the mind, emotions were neglected. Self-interest, egocentrism and hedonism are important concepts used by the consumer economy to increase competition. People who transformed their self-interest into ego ideal had to abandon abstract values[1, 2]. Human beings have moved away from virtue and justice, focused on their individual pleasures and interests. While human beings became richer materially, they became poorer emotionally and began to harm those around them. Nowadays, many problems such as alcohol, tobacco, substance use, behavioral addictions, psychological disorders, communication and relational problems, inability to maintain a healthy family life, exhibiting wrong parenting attitudes and behaviors, resorting to physical or emotional violence, and suicide are rapidly spreading around the world like a virus[1-7]. It is reported that negative emotions that exist in the body for a long time and distorted, harmful, unbalanced relationship patterns threaten human health[8]. Likewise, there are statistical results that speak of an epidemic of depression and suicide[9].

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Emotions have concrete biological foundations and can be included in a scientific category with the definition of Emotional Intelligence. In cases where emotions are neglected, it has become more obvious what bad consequences will occur. While IQ was increasing, EQ (Emotional Intelligence) was decreasing and there was a search for solutions to increase it[9]. While the search for happiness continued, the science of positive psychology began to be studied on scientific grounds and taught as a course in universities. Positive psychology is an important complement to traditional psychology rather than replacing it. The science of positive psychology aims to increase life satisfaction and happiness of both healthy individuals and clinical populations[10-15].

In recent years, neuroscience findings have revealed that all human values and even conscience are learned operatively. The internal questioning system called conscience is formed through social learning. Studies on the neurobiology of morality, the accumulated literature, Gage and Eliot cases, wild child cases (Feral Child, Oxana Malaya etc.) have shown us that the human child, let alone the role of compassion, love, sexual identity, and even the behavior of being human, learns through social learning[16]. Thus, it is very important how we could achieve moral success through scientific methodology: Emotional Wisdom. This field is considered as a methodology that reveals the importance of meaning, questioning skills and emotional wisdom skills[16, 17].

According to Tarhan, a person who thinks concretely cannot be wise. Solid semantic foundations are required for the formation of wisdom criteria, and thus abstract thinking skills come to the fore. Measurability of emotional wisdom skills and the development of a valid and reliable scale for this in this study are considered important in terms of contributing future studies based on concrete data to the literature. Thus, the scale will bring a different perspective to many measurement tools in the literature on measuring emotional intelligence. It is considered original in terms of adding the concept of "emotional wisdom" to the scientific literature.

1.1. Emotion and emotional intelligence

When the concept of emotion is researched in the dictionary; it is defined as the echo, effect, reaction, impression, intuition, sensory perception, sensation and feeling that an event, person or object creates and evokes in the inner world of a person[18]. With the help of brain imaging methods, the biological origin of emotions and their biochemical counterparts in our brain, such as serotonin, noradrenaline, dopamine, are revealed[19]. Concepts such as education of emotions have begun to find a place in the scientific literature. People need to know the characteristics of their brain in managing emotions, thoughts and behaviors[9].

The left brain has the ability to collect data and add meaning. It generates rational and strategic thoughts and makes long-term plans. Waiting, acting realistically, and experimenting are also related activities. It uses the words "if" and "but" a lot and is prone to understanding things. Tends to be self-centered and cares about things that will make it happy, and uses its will logically. The right brain is emotional. It attaches importance to warmth and closeness, and thinks in a more rounded manner. The words it produces the most are "immediately" and "now". It does not like to postpone desires. It wants to solve things immediately instead of thinking strategically. Tends to make quick decisions and take action, and is hasty. The reason for this is that it is interested in the future[9]. On the other hand, the main things that affect a person's psychological well-being are the decisions one makes in their life. From this perspective, the ability to manage one's emotional brain (right brain) well is also linked to one's ability to manage life's goals and meanings[20].

A valid and reliable scale (USLIFE) with 28 items and 7 factors was developed by Tarhan and Tutgun-Ünal[20] in order to measure people's ability to manage their life meanings and goals. The scale can be applied to ages 15 and above. People's life goals can be measured in the dimensions of tangible semantic skills, belief in death, skill to postpone satisfaction, intangible semantic skills, internal control skills, medium and long-

term planning skills and ego ideal perception. The predominant use of the emotional brain is inversely proportional to the level of these skills.

From a more technical perspective, the harmony and balance between mind and emotion is the paradigm of the new age. When viewed from the perspective of neuroscience, the relationship of emotions with the amygdala and neocortex, the source of rational thought, comes to the fore. In the limbic system, there is the "amygdala", which can be called the emotional memory center. People whose amygdala is surgically removed have very weak emotional abilities, lose contact with their relatives, and become insensitive to them. LeDoux[21] was the first neurologist to discover this. When the amygdala senses that harm is imminent, it declares an emergency and releases norepinephrine in response to fear. It immediately scans similar past records. It independently prepares the body for the fight/flight response before the neocortex comes into play. The prefrontal area, on the other hand, enables us to make more appropriate and analytical moves against the sudden reactions of the amygdala, as Goleman[22] puts it, "like a switch that acts as a buffer" and prevents thought from emotion. Based on this information, it can be said that the prefrontal-amygdala circuit and both the rational and emotional brain complement each other. The brain uses its productivity potential at the highest level.

Without emotion, people cannot express themselves. In general, emotions are considered in two main groups: One of them is basic emotions, the other is advanced emotions. Basic emotions are present in humans and other living creatures and are mostly impulsive ones such as sexuality, aggression, hunger and thirst. The reward-punishment system works excessively in the brains of people who act only with their impulsive feelings. But the human brain is also capable of complex emotions. A person experiences many emotions such as love, surprise, anger, fear and sadness throughout life. Instead of considering these emotions as a single emotion, they should be seen as a cluster. Love, fear and trust are a cluster and there are clusters under this cluster. For example: the feeling of love includes compassion, mercy and goodness. Hatred, hostility, shame and anger are hidden in fear. Within the trust cluster, there are subclusters such as loyalty, diligence and righteousness. Mixing these in various proportions leads people to happiness. One of the basic principles of happiness is to be happy by sharing[9].

On the other hand, intelligence is one of the issues that psychologists have difficulty in agreeing on. It can also be said that "Intelligence is what intelligence tests measure"[23]. After the term "intelligence" was used with different meanings among the public and in the literature for years, it was Binet who used it in its current special meaning and prepared the first intelligence test. Terman made important contributions to the measurement of intelligence and stated that the ability to think on abstract symbols is the most important factor that can differentiate intelligence differences between individuals[24]. Intelligence also helps understand and predict behavior. Intelligence theories are also referred to as intelligent behavior theories[25]. Therefore, it is necessary to take a look at intelligence theorists to understand intelligence. However, since it is not the direct subject of this study, a brief summary of the subject of intelligence is given.

People trying to understand intelligence basically ponder on whether intelligence is an ability, a skill, or something consisting of many different abilities. Spearman's view that mental processes are carried out by a single factor was initially accepted in intelligence studies. Later on, the view that there is more than one factor that constitutes intelligence spread by Thurstone and other researchers. In recent years, it has been theoretically accepted that intelligence develops from birth until the age of 20. After this age, knowledge increases, but there is no development in intelligence capacity. Recent developments reveal that our knowledge on this subject needs to be reconsidered[26]. Howard Gardner stated that what it means to be intelligent is no longer based solely on psychological explanations, but on deep philosophical, biological, physical and mathematical knowledge. Thus, he put forward the theory of multiple intelligences. Accordingly, there are 8 different types of intelligence. These are: Logical-Mathematical Intelligence, Visual-Spatial Intelligence, Bodily-Kinesthetic

Intelligence, Musical Intelligence, Naturalistic Intelligence, Social/Interpersonal Intelligence, Intra-personal Intelligence, Verbal/Linguistic Intelligence[27].

In recent years, researchers have been interested in the concept of Emotional Intelligence in explaining human behavior. Accordingly, emotional intelligence is demonstrated by having competence in self-awareness, self-management, social awareness and social skills, at appropriate times and with sufficient frequency[28]. Emotional intelligence includes assessing one's own and others' emotions as well as managing emotions[29]. It is a mental skill and refers to understanding what emotions mean. In its simplest definition, emotional intelligence is the intelligent use of emotions[30].

Researchers have studied emotional intelligence dimensions and methods of measurement. Goleman[31] examined emotional intelligence abilities in five sub-dimensions in 1996. *Self-awareness* is considered the basis of Insight. It is the ability to recognize oneself and one's emotions, and especially to recognize emotions as they occur. Those who are self-aware can stay behind the wheel without being at the mercy of their emotions. They can watch their emotional world without judgment, criticism or reaction. For example, instead of getting angry and reacting, staying present with the emotion and becoming aware of the associated thoughts, and sometimes trying to calm down those emotions[32]. *Self-regulation* is the ability to manage destructive emotions. Being able to enduring emotional storms such as intense anger, anxiety and pessimism. Impulse control is the ability to delay gratification and control impulsive states. The basic thing to do is to calm yourself down by looking at different perspectives without suppressing your negative emotions, then confront the event or person, assert yourself constructively and resolve the conflict[33]. The third dimension is *motivation*. It means having the expectation that better days will come with realistic optimism, determination and perseverance, and a reasonable level of anxiety, without getting stuck. The fourth sub-dimension is *empathy*. It is the ability to understand the emotions of others. A prerequisite is understanding one's own emotions. Its social reflection is philanthropy. The last dimension is *social skills.* It is being able to manage relationships, to regulate the emotions of others, reading non-verbal messages, coping with rejection, showing up as one is, initiating and ending communication. The prerequisite is to be able to synchronize the mood with the other[34].

Social-emotional learning (SEL) program have been prepared under the leadership of UNESCO. It has started to be applied to children in the field of education in different parts of the world. For example, perceiving the messages given through body language to understand what the other feels is explained practically in empathy lessons. As a result of these programs, academic skills increased and behavioral problems in schools decreased significantly[35,36]. Children's self-confidence and empathy levels differed significantly. Achievements such as controlling negative emotions and impulses, resolving conflicts peacefully, listening effectively, and cooperating have been identified[37, 38]. The explanation of these in the world of neuroscience is made with the concept of neuroplasticity. In other words, the brain reshapes and changes functionally and structurally with repeated experiences[39]. In parallel with this flexibility of brain circuits, as Goleman says, "Temperament is not destiny".

Some psychometric scales are used to measure emotional intelligence. Mayer Salovey and Caruso[40], developed the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT), which consists of 141 items. According to this test, emotional intelligence is built on four main lines: "Perceiving emotions, managing emotions, understanding emotions, using emotions". Goleman developed his scale based on Mayer and Salovey's model. He classified it under five main headings. Bar-On[41] developed a comprehensive scale and prepared a handbook. He is an expert who focuses specifically on emotional health. The mixed-model has five factors and sub-factors, making a total of 15 factors: "Self-awareness (Independence, self-actualization, assertiveness, self-regard, emotional self-awareness); Interpersonal relationship (Social responsibility, Interpersonal relationship, empathy); Adaptability (flexibility, reality-testing, problem-solving); Stress Management (Stress tolerance, impulse control); General mood (happiness, optimism)". The adaptation study was carried out by Mumcuoğlu[42]. It is a scale that can be used especially in the field of industrial psychology

and its studies were carried out with 125 people. Cronbach's alpha values of the factors were found to be between 0,48 and 0,84. Bar-On child and adolescent form was adapted by Karabulut[43].

The Schutte Self Report Emotional Intelligence Test, was created by Schutte et al. in 1998[44]. The SSEIT is structured off of the EI model by Salovey and Mayer. It was reshaped into 41 items by Austin et al.[45]. 20 of these contain positive items and the remaining contain negative items. It is a 5-point Likert type. It focuses on skills such as emotion perception, utilizing emotions, managing self-relevant emotions, and managing others' emotions. Turkish adaptation of the revised 41-item version was made by Tatar, Tok and Saltukoğlu[46]. The Turkish adaptation of Trait Emotional Intelligence Questionnaire–Short Form developed by Petrides and Furnham[47] who conceptualized emotional intelligence as a personal character trait, was made by Deniz, Özer and Işık[48]. It consists of 20 items. It has 4 factors called "well-being, self-control, emotionality and sociability".

When we look at more recently developed scales, we see the Rotterdam Emotional Intelligence Scale developed by Pekaar et al.[49]. It consists of 28 items. Turkish adaptation was made by Tanrıöğen and Türker[50]. The questionnaire reports on four different scales of emotional intelligence "Emotion recognition in oneself, Emotion recognition in others, Emotion regulation in oneself and Emotion regulation in others". Although they are not called emotional intelligence, there are other studies that draw on the same root such as Emotional Skills and Competence Scale[51], Emotional Self-Efficacy Scale[52], Social Emotional Competence Questionnaire[53] and Emotional Literacy Scale [54].

1.2. Emotional wisdom

According to Tarhan, the person who solves existence is wise. In order for a person to be wise, they must look at the concept of "I" as "I-consciousness" and add the meaning and purpose of life to their life by using their higher mental functions. There are various mental functions from decision making to action[17]. These are: Intelligence, thought, emotion, memory, episodic memory, perceptual memory, working memory, will, decision system and judgment. *Intelligence* is the human ability to learn and teach; *Thought* function produces thoughts and produces more in people with high intelligence levels. *Emotion* function can understand, produce and manage emotions. *Memory* saves and recalls. *Episodic memory* perceives and records events as a function of the mind. *Perceptual memory* creates future dreams and records them in order of importance. *Working memory*, provides data to our decision system. *Decision system* measures and evaluates. It establishes a relationship of acceptance or rejection, timing, order, difference and similarity. It waits for confirmation or rejection from emotional memory. If approval is received, the information is recorded as if the enter key was pressed. If repeated, it becomes a habit. If this situation lasts for an average of 6 months, this behavior enters chemical memory; changing behavior becomes difficult and behavior becomes automatic. *Attention*, means giving one's full awareness to a task that is important to them. *Will*, is a decision-making, *Judgement* function.

Emotions are divided into two groups: positive and negative. These emotions need to be kept balanced in order for the body to be balanced. Positive emotions can be listed as love, trust, hope, optimism, mercy and compassion, happiness, sense of aesthetics, sense of responsibility, loyalty, justice and sense of eternity. Negative emotions can be listed as selfishness, pride, arrogance, sense of superiority, shame, suspicion, jealousy, anger, grudge, sadness and hatred[9]. Emotional literacy is included in the literature as a concept for managing positive and negative emotions and making decisions by taking emotions into consideration. It has seen necessary for the wisdom of abstract thinking[17].

On the other hand, remaining calm in the face of events is one of the requirements of wisdom. Wisdom skills are related to the subject of life meaning and purpose skills, which include a number of skills such as tangible semantic skills, belief in death, skill to postpone satisfaction, intangible semantic skills, internal control skills, medium and longterm planning skills and ego ideal perception. A wise person is someone who is aware of the meaning and purpose of life and can manage these skills. In addition, emotional wisdom skills

include self-awareness, self-control and impulse control, emotional literacy, recognizing and expressing emotions, emotional resilience, patience and planned action, motivation and self-activation, problem solving, being harmonious and calm, optimism, love, being able to activate positive emotions such as compassion, setting goals and objectives, and being innovative and entrepreneurial[9, 20].

When the literature is investigated, scales using various concepts related to measuring emotions are encountered. Some of them used the concept of emotional intelligence, some used emotional competence, emotional self-efficacy and emotional literacy. As mentioned in the relevant literature, this study aimed to develop a valid and reliable scale that emotional wisdom skills. We can say that the strengths of the study are that the scale, which is thought to provide concrete data by measuring Emotional Wisdom skills psychometrically, is original. This will provide emotional wisdom measurement data to the literature in future studies.

2. Materials and methods

2.1. Participants

The sample of this study consisted of 1300 people, 62.8% of the participants were female (n=817) and 37.2% were male (n=483). Participants were between the ages of 18 and 77, and the mean of the age was 35 (Sd:20.0). For the education levels, 64.4% of the participants were at university level, 15.3% were at postgraduate level, 14.5% were at high school level, and 5.5% were at primary or secondary school level. For the marital status, 77.6% of the participants were married and 17.6% were single. 97.6% were social media users.

2.2. Data collection tools

Data collection tools of this research were the Uskudar Emotional Wisdom Scale (USEWS) and a demographic information form. Revised Schutte Emotional Intelligence Scale was also included during the criterion validity stage of the study.

2.2.1. Demographic information form

Participants were asked questions about gender, age, education level, marital status, daily social media usage time and the most preferred social media application in the demographic information form.

2.2.2. Revised Schutte Emotional Intelligence Scale

Revised Schutte Emotional Intelligence Scale, was originally developed by Schutte et al.[44], and its first 41-item revised version was made by Austin et al.[45]. The Turkish adaptation study of the revised version was made by Tatar, Tok and Saltukoğlu [46]. As a result of the linguistic equivalence and adaptation study conducted on a sample of 1743 participants between the ages of 17-78, the three-factor scale structure was consistent and the internal consistency reliability coefficient Cronbach Alpha value was found to be ,82. The three factors of the 41-item Revised Schutte Emotional Intelligence Scale are (1) Optimism/Mood Regulation, (2) Utilizations of Emotions, (3) Appraisal of Emotions. The scale was chosen due to its similarity with the developed scale. It was used for testing during the criterion validity phase.

2.2.3. Uskudar Emotional Wisdom Scale (USEWS)

Content validity, construct validity, discriminant validity, criterion validity, internal consistency reliability and confirmatory factor analysis were evaluated during the validity and reliability studies of Uskudar Emotional Wisdom Scale (USEWS). First, an in-depth literature review was conducted. Items were created by

taking into consideration the perspectives of emotional intelligence[9], wisdom psychology[16,17]. While designing the scale, a total of 5 experts who were academicians in the department of psychology, psychiatry and communication were consulted. With the expert evaluation inventory, each candidate questions in the scale were evaluated as "Appropriate to remain in the scale", "Can remain in the scale but unnecessary" and "Not appropriate to remain in the scale". Experts reached to the inventories via e-mail. Then, the compliance rates of the items were calculated with Miles and Huberman's formula[55].

Compliance rates for each item were determined using the ratings in the inventory. Accordingly, the relevant item received a score between 0 and 1, and care was taken to ensure that it did not fall below .80. In addition, each item was reviewed and edited in terms of spelling, grammar and expert opinions. Thus, the candidate 80-item USEWS questionnaire was prepared in a 5-point Likert type (from Never to Always). Later, the data collection phase for factor analysis was started.

Exploratory Factor Analysis (EFA) is a multivariate statistical calculation technique. It is utilized during the construct validity of scale development. Before performing EFA, one must test if the data set is convenient for factor analysis by using the Bartlett test and the Kaiser-Meyer-Olkin (KMO) test[56]. A KMO value of .90 and above is "excellent", a value between .80-.89 is "very good", a value between .70-.79 is "good", a value between .60-.69 is "fair", and a value between .50-.59 is "weak". Below is considered "unacceptable"[57]. Additionally, the Bartlett Sphericity value is expected to be significant. EFA can be conducted later.

During the construct validity stage of the scales, the number of factors is determined. For this, Eigenvalue statistics are used. actors with an Eigenvalue equal to or greater than 1 are considered significant[58]. It is ideal for the explained variance ratio revealed by factor to vary between 40% and 60% in social sciences[56]. Another stage is the discriminant validity study. At this stage, it is determined to what extent the items in the scale are suitable for the feature to be measured, and the discrimination index is calculated. Responses to each item are listed as points, 27% sections are taken from the upper group and lower group, and the difference between the two groups is examined with an independent group t-test. The results also give an idea about the consistency of the scale[55]. Thus, the data obtained from 1300 participants were divided into two separate groups of 351 people and the difference was examined in this study.

In the criterion validity stage, data is collected with another scale in the scientific literature that is similar to the developed scale and the correlation between the two scale scores is examined. When interpreting correlation values, between 0.30-0.70 are considered "medium"; values above 0.70 indicate a "high" relationship and values below 0.30 indicate a "weak" relationship [56]. During the reliability studies stage, item internal consistency analyzes were performed according to the item variances of the scale and Cronbach's Alpha coefficients were calculated.

To see if the factors confirm the scale structure, confirmatory factor analysis (CFA) study is carried out. Goodness of fit values are determined with the structural equation model. They should be in accordance with the acceptable ranges in the literature.

2.3. Inclusion/exclusion criteria

While creating the study group in the research, care was taken to include volunteer participants aged 18 and over. People under the age of 18 were not included in the research for the groups.

2.4. Procedures

Pilot Application: The online survey was first applied to 10 people for trial purposes and the understandability of the questions was tested. No problems were experienced at this stage. Later, field application was initiated.

Application of Scales: The online survey included the Demographic Information Form and USEWS. It was applied digitally and voluntarily, for 3 weeks, between 1-30 May 2022, after the Ethics Committee approval dated 30th of April, 2021.

2.5. Data processing and statistical analysis

Exploratory factor analysis (EFA) was performed in the structure validity studies of USEWS. In order to determine the relationship between the subscales and the total scale, the Pearson product of moments correlation coefficient was calculated. In criterion validity studies, Pearson Correlation Coefficient test was applied using the data set created by applying the data collection tool containing a similar scale to 450 people. Cronbach Alpha value determined the internal consistency reliability coefficient of the scales. Goodness of fit values (X^2/df, RMSEA, NFI, NNFI, CFI, GFI, AGFI) were evaluated with the structural equation model on the data set of 400 people at the confirmatory factor analysis stage. For psychometric analyzes, parametric tests (independent group t-test, one-way analysis of variance) were used since a normal distribution was seen. SPSS 26.0 statistical programs were utilized for validity/reliability analyzes and comparison tests. AMOS was used in confirmatory factor analysis.

3. Results

3.1. Uskudar Emotional Wisdom Scale (USEWS) validity and reliability studies

In this part of the study, statistical analyzes and evaluations were made for the Uskudar Emotional Wisdom Scale (USEWS). Content validity, construct validity, discriminant validity, criterion validity, internal consistency reliability and confirmatory factor analysis studies were included to develop the scale.

3.1.1. Content validity

The item pool of USEWA was initially created with 80 items. Interdisciplinary expert opinions were obtained for content validity studies. The items were examined by 5 experts and their item compatibility was calculated. Thus, a compliance rate of .80 was sought in the study, and it was decided for 80 items to remain in the scale pool. Compliance rate of items was between .80 and 1. Subsequently, the candidate scale consisting of 80 items was applied to 1300 people and the construct validity stage was started with the obtained data set.

3.1.2. Construct validity

Kaiser Meyer Olkin (KMO) sampling coefficient and Bartlett's sphericity test were used to measure the suitability of the data for factor analysis. KMO coefficient value was found to be .90. The Bartlett Test of Sphericity result was found to be significant (X^2=15786,74; df:561; p=0,00). It can be said that the data is suitable for factor analysis[82]. Exploratory factor analysis (EFA) was conducted with the 80-item draft scale created after the field academician assessment stage. During EFA, values with an Eigenvalue greater than 1 for USEWS formed a factor and a 6-dimension structure model emerged[57].

Table 1. USEWS factor structure and explained variance ratio.

USEWS	Eigenvalue	Variance	Cumulative Variance
Factor 1	8.00	23.55	23.55
Factor 2	2.76	8.12	31.67
Factor 3	1.99	5.86	37.54
Factor 4	1.79	5.28	42.82
Factor 5	1.57	4.62	47.45
Factor 6	1.50	4.42	51.87

Table 1 shows that the eigenvalues of the factors vary between 8.00 and 1.50. The explained variance rate in the total scale was found to be 51.87%. Item factor loadings were examined after determining the number of factors. When the lower cut-off point of the factor load of each item was .50, an appropriate structure with 34 items and 6 factors emerged. Thus, 46 items in the scale (1, 2, 7, 8, 11, 14, 15, 16, 17, 18, 19, 28, 29, 30, 31, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 47, 49, 51, 53, 54, 55, 56, 58, 59, 60, 62, 63, 64, 65, 68, 69, 70, 71, 72, 74, 75) were erased from the scale due to their existence in more than one factor or low factor loading. Factor load values of the items are given in **Table 2**.

Table 2. USEWS item factor loads, item total correlations and cronbach alpha values.

Factor	New Item Nu.	Items	Factor Loads	Item Total Correlation	Cronbach Alpha
F1	1	Q23: I am confident in achieving my goals.	.77	.76	.90
	2	Q22: I generate various options to achieve my goal.	.72	.69	
	3	Q20: I can visualize my life goals.	.70	.66	
	4	Q10: I value myself.	.70	.68	
	5	Q12: I know how to make myself happy.	.66	.66	
	6	Q13: I know I can overcome difficulties.	.65	.68	
	7	Q32: I am at peace with myself.	.65	.69	
	8	Q21: I always choose alternative goals for myself.	.65	.66	
	9	Q52: I trust myself.	.64	.65	
	10	Q25: I think my inner self is at peace.	.62	.61	
	11	Q24: I think I am in control of my life.	.62	.56	
	12	Q33: I am generally positive; I do not despair.	.57	.57	
F2	13	Q80: I am known as a sincere person.	.68	.61	.75
	14	Q78: I am a person with a high sense of compassion.	.66	.57	
	15	Q44: I think I am humble.	.61	.57	
	16	Q79: I am a person with a sense of contentment.	.58	.58	
	17	Q73: I am generally cheerful.	.55	.62	
	18	Q57: I enjoy being a giver and helping people.	.54	.50	
	19	Q61: I can be happy with small things.	.54	.52	
F3	20	Q50: I can manage my anger most of the time, I am resilient.	.73	.66	.70
	21	Q6: I can manage my emotions.	.68	.72	
	22	Q66: I am generally not hasty or impatient.	.58	.72	
	23	Q9: I can be positive, calm and careful in the face of difficulties.	.57	.70	
F4	24	Q4: I recognize what someone is trying to imply when they speak.	.77	.68	.72
	25	Q5: I recognize how others feel about me.	.72	.68	
	26	Q67: I can understand other people's thoughts from their facial expressions.	.71	.65	
	27	Q3: I understand how others feel.	.61	.50	
F5	28	Q48: I work on myself instead of correcting others, I am resilient.	.71	.78	.68
	29	Q46: When I am treated unfairly, I question myself first.	.67	.52	
	30	Q77: Instead of fixing the world, I'm trying to fix myself.	.63	.67	
F6	31	Q27: I do not look down on anyone.	.78	.73	.62
	32	Q26: I am not spoiled when I'm praised, I am in control.	.73	.65	
	33	Q76: I do not like hypocritical people at all.	.55	.51	
	34	Q45: When I suffer an injustice, I do not immediately blame it on someone else.	.54	.50	
Total					**.88**

As a result of the EFA, the USEWS form, consisting of 34 items and 6 factors, was rated on a 5-point Likert type as 'Never', 'Rarely', 'Sometimes', 'Often' and 'Always'. A minimum of '1' and a maximum of '5' points can be obtained from each item.

Table 2 shows the factor and item distributions in the scale. Subsequently, items were renumbered and renamed. The factors to which the items belong were given names. Accordingly, Factor 1 (Items 1-12) is named as 'Self-awareness, motivation, goal setting, being innovative and enterpriser'. Factor 2 (Items 13-19) is named as 'Being hopeful, safe, sincere, loving and optimistic'. Factor 3 (Items 20-23) is named as 'Self-control, controlling impulses'. Factor 4 (Items 24-27) is named as 'Emotional literacy, understanding and expressing emotions'. Factor 5 (Items 28-30) is named as 'Emotional resilience, planning and patience'. Factor 6 (Items 31-34) is named as 'Problem solving, being controlled, harmonious and calm'. Item-total correlations were found to be within the acceptable range and related to the scale (r>.30)

Cronbach Alpha values were found to be between .62 and .90, and the total of the scale was found to be .88. Furthermore, the relationship between the 6 factors resulting from the factor analysis was calculated with the Pearson Correlation Coefficient and is given in **Table 3**.

Table 3. Relationship between USEWS and its dimensions.

Sub-scales/Scale	F1	F2	F3	F4	F5	F6
F1	1					
F2	.36	1				
F3	.46	.38	1			
F4	.32	.36	.28	1		
F5	.32	.37	.30	.23	1	
F6	.27	.29	.29	.20	.26	1
USEWS	**.86**	**.62**	**.63**	**.44**	**.49**	**.44**

When **Table 3** is examined, the factors were found to be related. When interpreting correlation values, between 0.30-0.70 is considered 'medium'; values above 0.70 indicate a 'high' relationship and values below 0.30 indicate a 'weak' relationship. It seems that the factors are generally 'moderately' related to each other. It is understood that one factor has a high relationship with the scale. The relationship between the factors varies between medium and weak relationship levels. The relationships were found significant ($p<0.05$).

3.1.3. Discriminant validity

At this stage, for the discriminant validity study of USEWS, 27% of the data set with 1300 participants was calculated as 351. Groups of 351 people with the highest and lowest scores from USEWS were created. An independent group t-test was conducted on the total scale and between the factors. The result was found to be significant and are given in **Table 4** (**Appendix 2**). Thus, it was concluded that USEWS dimensionally measures the level of emotional wisdom.

3.1.4. Criterion validity

Since USEWS and the Revised Schutte Emotional Intelligence Scale are thought to be similar, the Pearson Correlation (r) coefficient of these two scales was calculated for criterion validity. A relationship was found between the scales as expected. As in **Table 5**, it is seen that this relationship is at moderate level and that this relationship is significant ($r=.60$; $p<0.001$).

Table 5. Pearson correlation value of scales.

Scales	N	X	r	p
USEWS & Revised Schutte Emotional Intelligence Scale	450	3.66	.60	.00
	450	3.74		

3.1.5. Confirmatory factor analysis

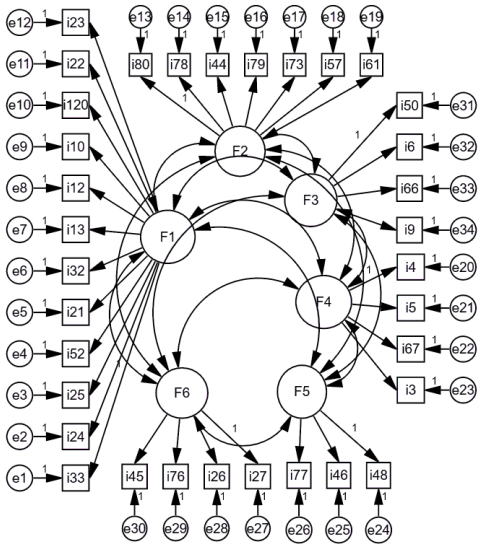


Figure 1. USEWS scale standardized model.

Once the factors emerged in construct validity stage, a scale model was drawn using the AMOS program with the data set created from 400 participants. Calculations were made with confirmatory factor analysis. The accuracy of the model was tested with goodness of fit values. Covariance was created between the dimensions in the model. Goodness of fit values were emerged within the acceptable range and thus the model was confirmed (X^2/sd=2.97<3; RMSEA=.06<.08; NFI=.93>.90; NNFI=.96>.95; CFI=.97>.95; GFI=.91>.90; AGFI=.87>.85).

The first average score of the developed scale is 127.40. This result obtained from a sample of 1300 people, and it indicates high level of emotional wisdom (See Appendix A). Then, psychometric examinations were carried out by focusing on intergroup differences.

As a result of the scale development stages, the average score of the sample was calculated. Groups were compared according to gender with the effect size analysis (d) proposed by Cohen (**Table 6**).

While performing statistical analyzes, the scale scores were compared with the independent group t-test to calculate the difference by gender and the result was found to be significant (t=4.21; p<.001). The USEWS score of men was found to be higher than women (X=3.87). The effect size of the difference between men and women was examined by Cohen's d effect size calculation, taking into account the scale scores. Accordingly, men were found to be closer to the medium impact area in terms of their levels of emotional wisdom compared to women (d=0.38; >0.2<0.5).

In score comparisons made by gender using the independent group t-test, a significant difference was found in 2 of the 6 factors (p<0.001). Among these factors, F1 (Self-awareness, motivation, goal setting, being innovative and enterpriser) scores created a difference between genders. It was revealed that men are more Self-awareness, motivation, goal setting, being innovative and enterpriser than women (X=1.33; t=5.04; p<0.05). When the effect size d value of this difference was examined, an effect close to medium strength was detected (d=0.45; >0.2<0.5). A significant difference was also found in the F3, and men are more self-control, controlling impulses than women (X=.42; t=5.61; p<0.05). The effect size of F3 is slightly above medium strength according to Cohen's d result (d=0.57; >0.2<0.5). When the scores obtained from the F2, F4, F5 dimensions are compared with the independent group t-test, it is revealed that there is no difference according

to gender. (p>0.05). The graphical representation obtained from gender comparisons according to the USEWS total score is given in **Figure 2**.

Tablo 6. Average USEWS scale scores of groups.

Groups	X	SS	d
USEWS – Female (n=817)	3.72	.41	
USEWS – Male (n=483)	3.87	.36	0.38[ab]
Total (n=1300)	3.74	.38	
Factors			
F1 – Female (n=817)	1.23	.23	
F1 – Male (n=483)	1.33	.21	
F2 – Female (n=817)	.87	.09	
F2 – Male (n=483)	.87	.09	0.45[cd]
F3 – Female (n=817)	.38	.07	-
F3 – Male (n=483)	.42	.07	0.57[ef]
F4 – Female (n=817)	.43	.06	--
F4 – Male (n=483)	.44	.06	-
F5 – Female (n=817)	.33	.05	
F5 – Male (n=483)	.32	.05	
F6 – Female (n=817)	.46	.09	
F6 – Male (n=483)	.47	.07	

The range is between 1-5.

[a]Reference group was calculated as USEWS female total X_1-X_2/SD_{Female}

[b]Reference group was calculated as USEWS male total X_1-X_2/SD_{Male}

[c]Reference group was calculated as F1 female total X_1-X_2/SD_{Female}

[d]Reference group was calculated as F1 male total X_1-X_2/SD_{Male}

[e]Reference group was calculated as F3 female total X_1-X_2/SD_{Female}

[f]Reference group was calculated as F3 male total X_1-X_2/SD_{Male}

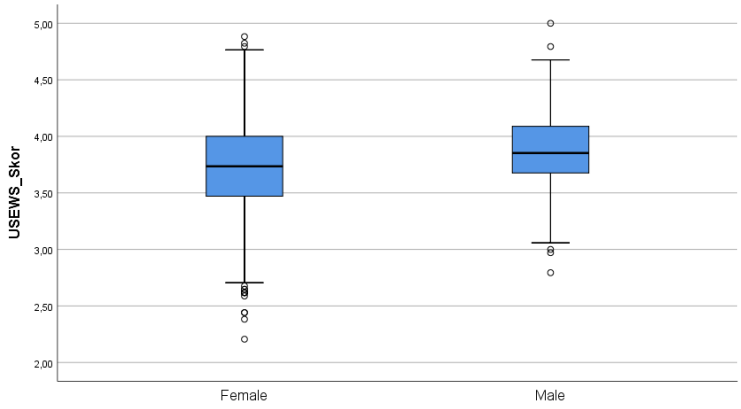


Figure 2. USEWS scores of the groups (Cutoff point 2.5 was accepted as the middle value.)

In another impact analysis conducted with USEWS scores, daily social media use was examined. Daily social media usage was divided into 3 groups, USEWS scores were compared with One-Way Anova analysis, and differentiation was calculated with the LSD Test. Then, the effect size (d) of the difference between groups was examined (**Table 7**).

Table 7. Average USEWS scores of daily social media usage groups.

Groups of Daily Use of Social Media	X	SS	d
Group 1: USEWS – Less than 1 hour (n=205)	3.90	.37	0.62^{ac}
Group 2: USEWS – 1-3 hours (n=836)	3.73	.41	0.43^{ab}
Group 3: USEWS – More than 4 hours (248)	3.66	.40	0.17^{bc}
Total (n=1289)	3.74	.41	

The range is between 1-5.

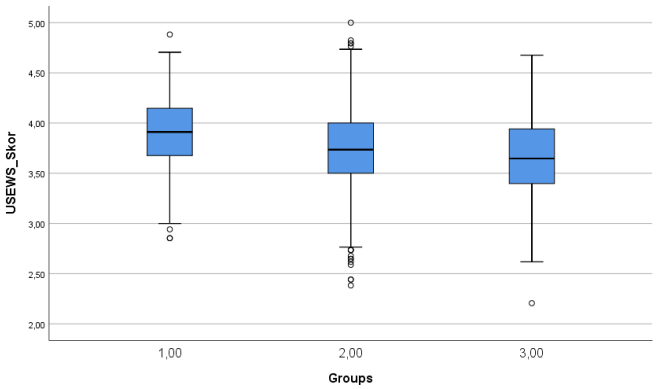
[a]Reference group1 was calculated as USEWS – less than 1 hour of daily use X_1-$X_2/SD_{\text{Less than 1 hour}}$

[b]Reference group2 was calculated as USEWS – 1-3 hours of daily use X_1-$X_2/SD_{\text{1-3 hours}}$

[c]Reference group3 was calculated as USEWS – more than 4 hours of daily use X_1-$X_2/SD_{\text{More than 4 hours}}$

According to the variance analysis, it was understood that daily social media usage time revealed a significant difference in terms of USEWS scores. ($p<0.01$). According to the subsequent LSD comparison test, it was determined that all three groups differed from each other. Accordingly, the USEWS scores of the group using social media for less than 1 hour a day were found to be the highest (X=3.90), while those using social media for more than 4 hours were found to have the lowest scores (X=3.66). Accordingly, the emotional wisdom level of those who use social media for less than 1 hour a day is higher than those who use social media for 4 hours or more.

When **Table 7** are examined, it is seen that the effect size between the group using social media for less than 1 hour and the group using social media for more than 4 hours is high (d=0.62; >0.5). Similarly, there was a difference between less than 1 hour of use and 1-3 hours of use ($p<0.01$), and USEWS scores of those who used 1-3 hours were found to be lower than those who used less. The effect analysis results of this differentiation created a medium strength effect size, although not as much as those who used it for more than 4 hours (d=0.43; >0.2<0.5). Although 1-3 hours of use and more than 4 hours of use revealed a significant difference ($p<0.01$), the effect size of this difference was found to be lower (d=0.17; <0.2). As a result, it has been revealed that the level of emotional wisdom decreases as the daily social media usage time increases. The graphical representation of the results obtained is as in **Figure 3**.



Group '1': Less than 1 hour; Group '2': 1-3 hours; Group '3': More than 4 hours

Figure 3. USEWS scores of the groups (cutoff point of 2.5 was accepted as the middle value).

4. Discussion

In recent years, various studies have been conducted focusing on emotions and their measurement, using the concepts of emotional intelligence, emotional competence, emotional self-efficacy and ultimately

emotional literacy[9, 34, 43, 46-54]. At this point, there is a need to understand emotions at a higher level, that is, to reconsider them from an existential perspective with the addition of meaning and questioning skills, and to turn this into a scientific methodology and discuss it on scientific grounds. As the relationship between emotions and the brain is examined, it should be reconsidered from a more abstract but meaningful perspective, that is, in terms of the journey of understanding existence and wisdom skills[16, 17]. The existence of emotional wisdom skills depends on a person's ability to establish the right-brain and left-brain balance. Measuring these skills has become important in order to obtain concrete data.

Emotional wisdom skills include self-awareness, self-control and impulse control, emotional literacy, recognizing and expressing emotions, emotional resilience, patience and planned action, motivation and self-activation, problem solving, being harmonious and calm, optimism, love, being able to activate positive emotions such as compassion, setting goals and objectives, and being innovative and entrepreneurial. In order to measure these, USEWS was developed by conducting validity and reliability studies with data collected from 1300 people aged 18 and over in this study. USEWS, consisting of 34 items and 6 factors, explained 51.87% of the total variance. Internal consistency reliability Cronbach Alpha value was found to be .95. In addition, a model with a 6-factor structure was created using the AMOS program with a data set of 400 people, and the model was validated with confirmatory factor analysis to obtain acceptable goodness-of-fit values.

In the first psychometric analyses, the average USEWS score of the sample of 1300 people was found to be 3.74 (Total USEWS point is 127). There was a difference in gender and daily social media use ($p<0.01$) and a medium-sized effect size was found ($d=0.38$; $>0.2<0.5$). Accordingly, the emotional wisdom level of men was found to be higher than women ($x=3.87$). The fact that this rate is partially higher in men can be interpreted as a biological reason that they use thought processes more because their left brain is dominant, and as a sociopsychological reason that society does not foresee such a wise role for them. It was found both interesting and impressive that Tarhan's [59] statement, "In our age, women need to stop being sad princesses and become wise women more" was confirmed by the quantitative data obtained as a result of the research.

Another result is that emotional wisdom scores increase significantly when daily social media use is less than 1 hour ($X=3.90$; $p<0.01$). In particular, using social media for 4 hours or more had a high-strength effect by significantly reducing the level of emotional wisdom compared to using less than 1 hour ($X=3.66$; $p<0.01$; $d=0.62$; >0.5). When the literature is examined, there are studies showing that social media use affects emotions [60-62]. Accordingly, using social media for 4 hours or more a day leads to a disinhibition effect on social media, that is, excessive emotions (excessive anger, excessive joy, excessive sadness, excessive hatred or hostility, etc.) [62]. As a result of this research, the level of emotional wisdom varies depending on social media usage. As usage increases, emotional wisdom skills are disrupted. An important result of the research was that those who use social media a lot lag behind in becoming wiser. When we interpret it in connection with the literature, this research result gives a clue that the disinhibition effect reduces emotional wisdom. Disinhibition behavior, that is, the inability to control wrong and harmful impulses, leads to the problem of loss of skills and attention deficit problems. In order to progress towards becoming wiser, it is necessary to be more successful in attention and time management. This means attention training and life success. Wisdom increases self-management skills. It confirms the thesis that those who cannot manage themselves cannot manage others. The process of emotional wisdom has a positive effect on the ability to manage brain chemistry, defined as neuro-leadership.

In addition, this result indirectly emphasizes that digital media and even excessive screen viewing behavior influence establishing balance between brain areas. When social media use exceeds 4 hours a day, there is a risk of social media abuse and addiction. In this level of usage, meaningful results have been achieved in studies that focus on emotions and behaviors such as people's benevolence and malevolence

characteristics[63] , social media addiction levels[64, 65] , life meanings and goals [20] , family commitment and satisfaction levels[66], etc. It was emphasized in a study that as the daily use of social media increases, people's benevolence levels decrease[63] . In this study, as the social media daily usage time increases, the level of emotional wisdom decreases, supporting the differences in the emotional context of social media. This issue should be studied in detail in new research. The findings create a need for new research with the inclusion of the USEWS developed in the study.

Conflict of interest

The authors declare no conflict of interest.

Ethical approval

This study was approved by the Uskudar University Non-Interventional Research Ethics Committee report number of 61351342/April 2021-27 (30 April 2021). This study was conducted in accordance with the Declaration of Helsinki for the use of humans in experimental research.

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Appendix A: Uskudar Emotional Wisdom Scale (USEWS)

Item No		**Never**	**Rarely**	**Sometimes**	**Often**	**Always**
1	I am confident in achieving my goals.					
2	I generate various options to achieve my goal.					
3	I can visualize my life goals.					
4	I value myself.					
5	I know how to make myself happy.					
6	I know I can overcome difficulties.					
7	I am at peace with myself.					
8	I always choose alternative goals for myself.					
9	I trust myself.					
10	I think my inner self is at peace.					
11	I think I am in control of my life.					
12	I am generally positive; I do not despair.					
13	I am known as a sincere person.					
14	I am a person with a high sense of compassion.					
15	I think I am humble.					
16	I am a person with a sense of contentment.					
17	I am generally cheerful.					
18	I enjoy being a giver and helping people.					
19	I can be happy with small things.					
20	I can manage my anger most of the time, I am resilient.					
21	I can manage my emotions.					
22	I am generally not hasty or impatient.					
23	I can be positive, calm and careful in the face of difficulties.					
24	I recognize what someone is trying to imply when they speak.					
25	I recognize how others feel about me.					
26	I can understand other people's thoughts from their facial expressions.					
27	I understand how others feel.					
28	I work on myself instead of correcting others, I am resilient.					
29	When I am treated unfairly, I question myself first.					
30	Instead of fixing the world, I'm trying to fix myself.					
31	I do not look down on anyone.					
32	I am not spoiled when I'm praised, I am in control.					
33	I do not like hypocritical people at all.					
34	When I suffer an injustice, I do not immediately blame it on someone else.					

Uskudar Emotional Wisdom Scale (USEWS) consists of 34 items and 6 factors. Each item can be scored between 1-5. A minimum of 34 points and a maximum of 170 points can be obtained from USEWS. Factor 1 (Items 1-12) is "Self-awareness, motivation, goal setting, being innovative and enterpriser"; Factor 2 (Items 13-19) "Being hopeful, safe, sincere, loving and optimistic"; Factor 3 (Items 20-23) "Self-control, controlling impulses"; Factor 4 (Items 24-27) "Emotional literacy, understanding and expressing emotions"; Factor 5 (Items 28-30) "Emotional resilience, planning and patience"; Factor 6 (Items 31-34) is named as "Problem solving, being controlled, harmonious and calm".

Evaluation: 34-79: Low Emotional Wisdom: 80-125: Moderate Emotional Wisdom; 126-170: High Emotional Wisdom

Appendix B: Discriminant validity of USEWS (Table 4. Discriminant validity of USEWS)

Sub-Scale/Scale	Group	N	X	SS	Sd	t	p
F1	Upper Group	351	51.40	3.12	700	61.87	.00
	Lower Group	351	31.80	5.04			
F2	Upper Group	351	33.64	1.06	700	67.92	.00
	Lower Group	351	25.97	1.83			
F3	Upper Group	351	16.33	1.09	700	62.69	.00
	Lower Group	351	9.75	1.63			
F4	Upper Group	351	17.34	1.22	700	49.56	.00
	Lower Group	351	12.72	1.46			
F5	Upper Group	351	13.62	0.91	700	61.15	.00
	Lower Group	351	8.90	1.11			
F6	Upper Group	351	18.97	0.79	700	48.42	.00
	Lower Group	351	11.98	2.58			
USEWS	Upper Group	351	144.03	6.59	700	60.01	.00
	Lower Group	351	110.04	8.31			