

Research Article**Development of the Tendency of Lying in Digital Environments Scale (TOLDES) and Investigation of Psychometric Properties**

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Abstract

Lying is a multidimensional problem that occurs due to cognitive and social factors and harms the person in many ways. With the widespread use of digital technologies, lying behavior has become increasingly easier and more common. Revising existing measurement tools in the literature by incorporating digital media is a need of the digital age. This study aims to develop a valid and reliable scale to reveal individuals' Tendency to lie in the digital environment and to examine the psychometric properties of this scale according to some variables. The sample was created with 495 participants from across Turkey. The scale named 'Tendency of Lying in Digital Environments Scale' (TOLDES) consists of 30 items and 5 factors (Unrealistic sharing, Romantic deception, Exaggeration, Gossip, Anonymity) and explains 69.83% of the total variance. Confirmatory factor analysis of the scale resulted in acceptable goodness-of-fit values. Internal consistency reliability coefficient Cronbach Alpha value was found to be .95. According to Cohen's *d* calculations, the use of unrealistic sharing, romantic deception, and exaggeration in the TOLDES creates a difference with a medium effect size in men. It was concluded that the TOLDES was valid and reliable and it could be used in the next studies.

Keywords: Lie, Lying, Lying in Digital, Scale Development, Validity and Reliability

1. Introduction

As in philosophy, psychology, and other fields, researchers have had difficulty in defining lies and tried to clarify the concept of “lie” by expressing different views. There are many forms and derivatives of this concept in the literature, so it is difficult to make a general definition [1-3]. There are many studies explaining when the “deceptive” behavior started to be seen, how it was developed, what cognitive-social factors it is affected by, and what kind of lies are told in which situation [4,5]. The concept of deception is explained as the act of deliberately, consciously, and voluntarily changing any existing situation or expressing a situation that does not exist as if it existed [6-11]. The concept of “lie” is referred to as “deception” in the literature. It occurs as a knowing, willful, deliberate action, such as changing something that is known to be true or conveying information that is known to be false [11-14].

The word “lie” in Latin is expressed with the word “kizb” in Arabic and “yalan” in Turkish. It means hiding or distorting the truth, deceiving someone; unfounded, fabricated, fiction, diversion, and an attitude or behavior that are not true or made up [15,16]. Deception is explained as knowingly conveying information that is known to be false to other people as if it were true, an attempt to openly mislead another person to be rewarded or harming someone, fabricating, covering up, bluffing, exaggerating, hiding, deceiving, white lie, covering up, lying, cheating [17].

In explaining lies and types of lies, fabrication, small lies, misleading, faking, snitching, deception, cheating, etc. are used. It is mentioned that nearly 50 concepts such as these can be used [18]. Lee and Ross explained the three components of lying:

a) the statement is false, b) the speaker knows that the statement is false, and c) the speaker deliberately deceives the other person [19].

Some studies in the literature have focused on the tone of voice, pitch of the voice, response time, content of the conversation, eye contact, facial expressions, smiles and body movements of individuals who lie [20]. Vrij stated that anxious individuals lie to their spouses more often than non-anxious individuals [21]. Further, people with social anxiety lie more often because they lack self-confidence. Ultimately, this highlights the significant impact of social anxiety on deceptive behavior. Zuckerman explained the processes underlying deceptive behavior as general arousal, emotions, cognitive effort and behavioral control [13]. In the study of Zuckerman et al., individuals who lied reported making less eye contact and smiling, increased pupil dilation and blinking rates, more physical displacement, longer response times, more speech errors and pauses, and speaking slower and speaking in higher tones of voice. DePaulo reported that the responses of individuals who lied were less natural but more rehearsed and incongruent than those who told the truth. While lying, the pupil dilation and inconsistencies in body movements, speech disturbances, pauses, and the pitch of the voice have increased [22]. They reported that what they experienced as emotions were fear, guilt, and excitement.

In studies examining the relationship between social communication skills and deception, it is stated that there is a positive relationship between extraversion and successful deception and between high self-monitoring levels and successful deception [23-25]. According to Üretmen the underlying motives for deceiving are to save others from harm and embarrassment, to protect self or someone else from punishment or disapproval, to influence officials for self-gain, to make self-look better, to protect a gain, to make others do something for our benefit, persuading someone to do something, hurting someone for personal gain [1]. Kam revealed that motivations for lying fell into four general categories: (a) benefitting the self, (b) benefitting the other, (c) benefitting the relationship, and (d) miscellaneous motivations. These motivations are basic rewards, affiliation rewards, self-esteem-related rewards, and other rewards [26]. Buller and Burgoon mentioned three types of motivations related to the intention of the liar: instrumental, relational, and identity-related [27]. If we talk about the underlying motivations of lying combined into two basic categories; we can express them as self-centered and other-oriented motivation [28].

According to the study of Üretmen Zuckerman et al explained the processes underlying the lying attitude with four concepts: general arousal dimension, emotion dimension, cognitive dimension, behavioral control dimension [1,13]. In the study of Coleman and Kay the characteristics of deceptive behavior were listed as the statement of the liar being contrary to the facts, believing that the statement was false, planning to deceive the other person, and acting contrary to beliefs, intentions and facts [29]. On the other hand, the person who lies resorts to lying and shapes their reactions by considering their own structural characteristics and environment dynamics [20,22]. They have a tense, restless state, face and facial expressions [30]. Although they try to hide, MRI studies show that the brain cannot hide the lies [31]. Further, there are studies stating that as the degree of interpersonal closeness increases, the rate of detecting lies decreases [32].

While telling the truth is about expressing oneself as one is, sincerely, without excuses, and taking responsibility for one’s feelings and actions, People mostly defines the event that could cause the deterioration of attachment relationships in their romantic relationships as “lying” behavior [33,34]. From the child-adolescent perspective, this situation, which is related to the loss of trust in the relationship, is interpreted as the child having difficulty meeting the expectations of his/her parents or taking refuge in lies due to fear of punishment or pressure [2,35,36]. According to Uzyn, lies have dimensions [2]. The cognitive dimension of lying includes the skills of hiding the lie and constructing the lie. Emotional dimension of lying includes heart palpitations, physiological reactions, excitement, fear of being caught and anger. Behavioral dimension of lying includes trembling of the hands and knees, averting the eyes, tremor of the voice, disturbed speech, and long periods of silence between speeches.

Lying is mostly associated with feelings of guilt and fear [37].

Children under strict discipline, who are constantly in danger of being caught, scolded and punished, develop various fears, resort to deceptive behavior to avoid unwanted reactions from their parents, and exhibit undesirable behaviors such as spitting in tense situations [38,39]. It is even stated that a mother can tell when most of them are lying by looking at them [40]. Additionally, people who are encouraged to lie can lie just as much as people who are under pressure [6]. It is stated that we tell 41% of the lies to prevent someone from getting angry at us, 14% because we want to live a comfortable life, 8.5% because we want to look cuter, and 6% because of laziness [41]. Although the role of cognitive factors has generally been investigated in studies, deception is also an interpersonal situation shaped by social and environmental factors [42]. However, the child who grows up in an environment where lies are told sees deception as a natural part of life [43]. On the other hand, individuals who talk fluently, are thoughtful, extroverted, have high self-expression and social skills are evaluated as more honest and reliable [1].

1.1. Types of Lies

Goffman distinguished between exploitative fabrications (lies that serve the deceiver and harm the deceived) and benign fabrications (lies that benefit the deceived or cause no harm) [18]. Lewis emphasized the intention of the person who lies and who it benefits [44]. He has suggested a taxonomy of lying and deception such as “Lying to protect the feelings of another”, “Lying for self-protection to avoid punishment” and “self-deception”. As a result of their interviews with adult participants, DePaulo et al., defined three different types of lies as outright lies, exaggerate lies and subtle lies [28]. Later, DePaulo et al. defined four different types of lies as serious lies, little lies, self-serving lies and other-oriented lies [45]. According to Aydin’s study lie types are classified as “prosocial lies” and “negative lies” [46]. They also clarified concepts such as “altruistic prosocial lies”, “self-serving negative lies”, “antisocial lies”, “true lies”, “white lies”, “ambiguous gray lies” and “legitimate gray lies” have been clarified.

According to Ulu soy, the kinds of lies include “deceptive lies”, “pathological lies” and “white lies” [3]. In Uzyn’s study, the types of lies used during adolescence are imaginary lies, imitation lies, social lies, defensive lies and sublimated lies [2]. To Çetiner-Sağel, types of lies are explained as lies that people tell for themselves (instrumental lies), lies that people tell for others (polite lies, lies told to keep secrets) [47].

The concept of “pathological lying” is a symptom of mood disorders and describes deceptions that occur at the subconscious level and are self-deceptive and situations in which defense mechanisms play an active role in the person’s discourse [48]. Pathological lying not only harms the other person but also harms the development and personality of the person telling the lie and puts the person in a difficult situation, It is the type of lie told by people who put lies at the center of life, believe in the reality of lies, and see lies as a means of pleasure and pleasure, not for a simple benefit or

purpose, but due to some kind of neurological disorder Lies told with the aim of not offending or harming the others are different from antisocial lies and are referred to as white lies (positive social lies) [49-51].

While it is a fact that individuals can hide and deny events without realizing them due to their cognitive functions, it is stated that body language never lies [52]. Behavioral cues such as experiencing negative emotions, decreased eye contact and body orientation, decreased facial lines, withdrawal symptoms, and an extra mental effort to resolve the feeling of conflict needing time to think about the word to say in the face of a sudden question and pausing to evaluate the possibilities, searching for a word or idea, experiencing a change in facial expression, movement of the body, change in voice, swallowing in the throat, deep or shallow breathing, long pauses between words tone of voice, pitch, response time, content of the conversation, eye contact, facial expressions, smile, and body movements change [21,37]. Lying generally involves suppressing or denying a response and increases response time. It involves generating a response rather than telling the truth. Such a practical achievement requires using cognitive processes in addition to those used in telling the truth [53].

1.2. Lies and Relationships

It can be said that lying behavior harms friendships, breaks up families, deteriorates neighborly relations, and blunts the sense of cooperation in society and negativities in marriage, friendship relations, and business and commercial relations [54,55]. DePaulo et al., individuals with a high degree of Machiavellianism lie more and most of these lies are self-centered lies [28]. It has been reported that university students lie to one in three people with whom they interact socially, and to one in five people in society. The people who evaluate their relationships as warm and satisfying lie less. According to DePaulo and Kashy a positive relationship was found between the degree of closeness and the rate of other-oriented lies [12]. It has been mentioned that emotional closeness, frequency of communication, and duration of the relationship affect this relationship.

It has been mentioned that men lie more successfully than women are more successful in detecting lies than men, women tell fewer but more other-oriented lies than men participants of both genders evaluated a lie told to a friend more negatively than a lie told to a stranger or colleague and that men more likely to justify lying than women [28,56-59]. The variety of lies in daily life was mentioned in one study. These are bluffing, exaggeration, emergency lies, propaganda, jokes, lies to explain or impose a situation, commercial lies, official lies, perjury, charm, well-wishing lies, white lies [2]. Results shows that, there is no significant difference in the frequency of lying between men and women, all individuals can lie when necessary, regardless of gender men lie more successfully than women men tell more self-centered lies while women tell more other-oriented lies [24,56]. It is emphasized that women resort to more well-intentioned lies than men [28]. Aydin and Balım

stated that even doctors attempt to hide some facts when informing patients and/or their relatives about health-related problems, and such situations can be seen in various areas of life [60].

1.3. Lying in Children and Adolescents

In the study of Pop liger et al. they correlated the lying stages of children with their age ranges according to their developmental periods [4]. They explained it as primary lie (2-3 years old), secondary lie (4-6 years old) and tertiary lie (7-8 years old). As children grow up, they learn how to use deceptive body language and how to get themselves out of difficult situations by lying [41]. Adolescents try to lie effectively and thus gain a place for themselves in society [49]. Lying behavior is among the behavioral problems that secondary school teachers frequently encounter and they have to deal with it as a disciplinary problem, it is emphasized in studies that adolescents and emerging adults often lie to their parents as a way of asserting their right to autonomy [61]. While 32.67% of the students who lied to their parents at least once about 6 different subjects were high school students, this rate was 28.50% for university students [62].

When the literature is examined, it is seen that language development is effective in the lying of children under the age of 10. In later periods, belief and intention gain importance. While children with low mental levels tell untrue lies, those with normal and superior intelligence tell logical lies and make up detailed stories [63]. It is reported that the skills required for lying in children are necessary for regulating behavior and directing relationships. It is also stated that the type and content of the lie may change as the child enters adolescence [64]. This situation may be related to developing technological-social opportunities, family structure, and understanding of education [19]. Speech, vibration in the voice, or the idea of a lie constructed in the mind may be reflected in the expression [22]. Feelings of inferiority, guilt, aggression, and jealousy are important factors that cause lying behavior [65]. In families with high expectations, there is a constant danger of being caught, scolded, and punished, and thus especially young individuals, whose every word is judged and questioned, may resort to lying to increase their sense of personality, to have their presence accepted, to hide or compensate for their shortcomings and to prove their importance [66,67].

In the study of Aydin, the factors affecting lying behavior are; cognitive factors (theory of mind, executive functions, intelligence) and social factors (parenting, cultural factors) [68]. Studies are showing that the basics of “lying” behavior can be acquired within the family, through learning, imitation, and observation in the education given by parents [36,38,69,70]. It can be said that “lying” behavior is observed in children and young people who are constantly criticized, under strict discipline, and forced to perfection as a result of parents’ harsh, strict, authoritarian, and punishing attitudes towards children and young people [7,38,69,71].

1.4. Lying and Mental Disorders

Psychopathological addiction diagnostic criteria such as “internet addiction, social media addiction, nomophobia, technology addiction, problematic internet use, gaming addiction”, which are frequently encountered in the literature, are often accompanied by “lying” behavior [72-75].

It is mentioned that the psychopathological patterns of Narcissistic personality disorder, Antisocial personality disorder, Histrionic personality disorder, Paranoid personality disorder and mythomania are accompanied by “lying” behavior [3,40]. To Uzyn when lying behavior begins to be repeated obsessively, “mythomania” also called pathological lying, occurs [2]. It is reported that this disorder can occur in childhood, adolescence and even adulthood and is seen at serious levels. The person makes up lies and convinces the self and the others. The severity of lying behavior gradually increases as wanting to attract attention and becoming the focal point. Symptoms include starting to exaggerate and dramatize events [76]. It is explained that lying is linked to various mental states in a chain manner. People with little or no sense of shame are generally antisocial. People with antisocial personality type often do not obey social rules, lie, break traffic rules and violate social boundaries. They do not feel conscientious concern because the behavior they exhibit is a part of their personality [40].

1.5. Measuring Lies

When the literature is examined, “Types of Lies” and “Attitude Towards Lies” scales are encountered. The original version of the scale, developed by Shkuratova in 2007, is widely used in Russia [69]. The “Types of Lies” scale, consisting of 48 items, is a four-point Likert-type scale (0 = Not appropriate at all, 1 = Less appropriate, 2 = Appropriate, 3 = Very appropriate). The highest score that can be obtained from the scale is 18, and the total scores determine which lie type is the highest. It has 8 sub-dimensions: *moral lie, noble lie, fantasy lie, justify lie, false silence, false gossip, self-revealing lie, and motives of lie*. The “Attitude Towards Lying” scale aims to measure people’s attitudes towards people who lie. This scale consists of 28 items, is a 3-point Likert-type scale (A = I would behave normally, as if I did not notice anything, B = I would change my behavior under the influence of what I hear, but I do not let the other person notice, C = I would directly tell the other person that they are lying) and. It scores between 0 and 2. As the score obtained from the scale increases, the harshness of the person’s reaction to the lie also increases. The majority of answers A indicates being too tolerant of others’ lies. The fact that the answer B is the majority indicates individuals who are introverted, vindictive, and not inclined to learn the truth of things. The fact that the answer C is the majority indicates people who are more honest, open, and impatient with insincere behavior. The scale has the same subscales as the “Types of Lies” scale. Accordingly, the dimensions that make up the subscales are as follows:

- **Moral Lie:** This type of lie is one of the most common types of lies used to avoid violating generally accepted rules of etiquette.
- **Nobel Lie:** It is a type of lie told to hide information to prevent it

from harming the other party.

- **Fantasy Lie:** It is a harmless type of lie. They are exaggerated and extraordinary features that the narrator adds to himself/herself and the event they describe during the narration of any subject.

- **Justify Lie:** It is a type of lie that a person tells to protect himself/herself in order to prevent the current event or behavior from occurring in the face of an inappropriate situation.

- **False Silence:** It is not considered as a type of lie entirely. It is caused by insufficient information or incorrect transfer of information.

- **False Gossip:** It is the most commonly used type of lie. The person conveys information that is unclear or does not reflect reality about the events and people around him/her.

- **Self-Revealing Lie:** It is a type of lie that a person uses against others who do not know him/her well. The person uses it to promote himself/herself by conveying information about himself in unrealistic and exaggerated ways.

- **Motives of Lie:** The main factors in the formation of lying motifs are emotions such as panic, fear and anxiety. In addition to these basic emotions, people lie for reasons such as protecting the other person, maintaining the relationship they have established, protecting their own interests, or greed [77]. Lies told in daily life to avoid hurting the other party and to appear polite become habits over time, and thus become a method used to protect one's own interests. Another lying motif is the act of lying that a person resorts to defend himself/herself. In this lying motif, the person resorts to lying to justify his/her actions and to place the verbal criticism directed at him/her on a reasonable basis [69]. Again, in daily life, in bilateral relations, the lies used by the liar to turn the communication in the direction he wants and to ensure the continuation of communication with the other person are among the most frequently encountered lying motifs. Here, the person sees the lie as a source of motivation. For this reason, the real reason for the lie and the lie motif used may not be compatible with each other.

When the research on lying and lie motifs are examined, it can be seen that Heavy Penalty (fraud), fear of punishment, harming others, manipulation, protecting others, lies told for pleasure (looking funny, fantasy, joke), mythomania, pathological lying, self-centered lies, self-serving lies, lying to oneself (to maintain the balance in one's inner world), lies told to make oneself look good, lies told due to lack of knowledge, lies told in relationships with others (to maintain communication) and lies that have become a profession [69].

The "Types of Lies" and "Attitudes Towards Lies" scales developed by Shkuratova were translated from Russian to Turkish by Movsumlu in 2015. They were used in the study titled "Adaptation of the Lie Perception Inventory in Adolescents to Turkish" [69].

In another study, the "Lying Tendency Scale" was established to measure the lying habits of middle school students. It was conducted with 391 participants consisting of 6th, 7th and 8th grade students of a secondary school in Gaziantep, the criterion validity

value of the scale was found to be $r=.31$. The scale consists of 23 items and 2 factors (lies due to social reasons, lies due to emotional reasons). In the confirmatory factor analysis results, it was seen that the two-dimensional structure of the 23 items was compatible ($\chi^2 / Sd=2.44$, $RMSEA=.056$, $SRMR=.045$, $TLI=.90$, $CFI=.91$). Looking at the Cronbach Alpha reliability coefficients of the scale, it is $.89$ for the lies due to social reasons factor and $.84$ for the lies due to emotional reasons factor. The reliability coefficient of the total scale is $.91$. To measure the test-retest reliability coefficient, the scale was evaluated by applying the scale to 68 participants with an interval of 2 weeks. Test-retest coefficients are found as $r=.77$ ($p<.000$) for the lies due to social reasons subscale, $r=.56$ ($p<.000$) for the lies due to emotional reasons subscale, $r=.79$ for the total scale score. As a result of validity and reliability studies, it was found that the Lying Tendency Scale has high validity and reliability values [71].

Another scale that appears to be used in the literature is the "Lying in Everyday Situations Scale", developed by Hart et al. in 2019. The scale aims to measure lies told in various situations of daily life on a wide scale. The scale aims to broadly measure lies told in various situations of daily life. The Cronbach Alpha reliability coefficient of the scale, which was transformed from its original 45-item version into a two-dimensional 14-item version, is $.91$. Concurrent validity of the scale was conducted using Lying Scales, Machiavellianism Scale, Social Desirability Scale, and actual lie frequency reports over a 24-hour period. The scale was found to be positively correlated with the antisocial personality (Cronbach's $\alpha=.93$) and relatedness (Cronbach's $\alpha=.94$) subscales, and negatively correlated with the social Desirability Scale. It is also positively correlated with Mach IV and Machiavellianism Personality Scale. Finally, in evaluating the validity of the scale, a positive correlation was obtained between Lying in Everyday Situations scale scores and people's self-reports of lying within 24 hours ($r(76) = .41, p < .001$) [78].

The aim of this study is to develop a scale by conducting validity and reliability studies to measure tendency of lying in the digital environment. When the domestic and foreign literature is examined, it is seen that there are a limited number of scales for measuring lies. In addition, there is no type of scale to measure lying specifically in the digital environment. For this reason, it is thought that this scale can contribute to the literature by using it in measuring lying tendencies in digital environments such as Instagram, Twitter (X), YouTube, and Facebook and by including it in dimensional measurements. In addition, it is important to include some initial psychometric analyses in this study as it will lay the groundwork for future studies.

2. Materials and Methods

2.1. Ethical Approval

This study was approved by the Üsküdar University Non-Interventional Research Ethics Committee report number 61351342/ April 2023-31 (28th of April, 2023). This study was conducted by

the Declaration of Helsinki for the use of humans in experimental research.

2.2. Participants

The sample of the study consisted of 495 participants aged 18 and over. A random sampling technique was used in the research. 68.5% of the participants were women (n = 339) and 30.9% were men (n = 153). Their ages range from 18 to 65, and the average age is 33. Their education level is 8.3% is primary school (n=41), 17.4% is high school (n=86), 6.3% is college (n=31), 50.1% is university (n=248), 11.7% at master's degree (n=58) and 6% at doctoral level (n=30).

2.3. Data Collection Tools

Data collection tools of this research are the Tendency of Lying in Digital Environments Scale (TOLDES) and a demographic information form. Types of Lies Scale was also included during the criterion validity stage of the study.

2.3.1. Demographic Information Form

Demographic characteristics (age, gender, education level), social media use and the digital environment (daily usage time, social media preferences, liking preferences, live chat frequencies, number of profiles, identity preferences in the digital environment, etc.) information were collected.

2.3.2. Types of Lies Scale

The “*Types of Lies Scale*” was developed by Shkuratova in 2007 and consists of 48 items. It is a 4-point Likert-type scale. It was translated from Russian to Turkish by Movsumlu in 2015 and used in the study titled “Adaptation of the Lie Perception Inventory in Adolescents into Turkish” [69]. The scale consists of 8 sub-dimensions: moral lie, noble lie, fantasy lie, justify lie, false silence, false gossip, self-revealing lie, and motives of lie. The scale is coded between 0 (Not applicable at all) and 3 (Very applicable) and contains reverse items (4, 18, 24, 33, 39, 43). Total scores determine which lie type is higher.

2.3.3. Tendency of Lying in Digital Environments Scale (TOLDES)

Content validity, construct validity with factor analysis, discriminant validity, criterion validity, and internal consistency reliability were applied during the validity and reliability phase of the Tendency of Lying in Digital Environments Scale (TOLDES). First, an in-depth literature review was conducted and an item pool was created by considering the relevant scales. While designing the scale, a total of 6 experts who were academicians in the Department of Psychology, psychiatry, and Communication were consulted. With the expert evaluation inventory, each candidate's 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 out to the inventories via e-mail. Then, the compliance rates of the items were calculated with Miles and Huberman's formula [79].

Compliance rates for each item were determined using the ratings in the inventory. The relevant item received a score between 0 and 1, and care was taken to ensure that it did not fall below 80. Further, each item was reviewed and edited in terms of spelling, grammar, and expert opinions. Thus, the candidate 60-item Tendency of Lying in Digital Environments Scale (TOLDES) form was prepared in a 5-point Likert type (from Never to Always) and 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 [80]. For this, the Bartlett test and the Kaiser-Meyer-Olkin (KMO) test were performed [81,82]. A KMO value of,90 and above is considered “excellent”, a value between,80-, and 89 is “very good”, a value between,70-, and 79 is “good”, and a value between,60-, and 69 is “fair”, and a value between50-,59 is “weak”. Below is “unacceptable”. Additionally, the value obtained from the Bartlett test should be significant. During the construct validity stage, the number of factors is decided according to EFA. Eigenvalue statistics are used for this. Factors with an Eigenvalue equal to or greater than 1 are considered significant. However, if they are less than 1, they are not considered significant [83]. It is ideal for the explained variance ratio revealed by a factor to vary between 40% and 60% in social sciences [80]. However, the correlation values of the relevant scales are examined in the criterion validity study of the scale. When interpreting them, 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 [80].

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% of 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 [80]. Thus, in this study, the data obtained from 495 participants were divided into two separate groups of 133 people and the difference was examined.

In the criterion validity stage, the relationship between the scale developed in the study and similar scales is analyzed. This is done by calculating the Pearson Correlation coefficient. In this study, the Types of Lies Scale was applied to 156 people at a different time, and correlation analysis between Types of Lies Scale and TOLDES was performed. A confirmatory factor analysis (CFA) study is performed to find out whether the obtained confirms the scale structure. The goodness of fit values is calculated with the structural equation model. They should be by the acceptable ranges in the literature. During the reliability studies stage, item internal consistency analyses were performed according to the item variances of the scale, and Cronbach's Alpha coefficients were calculated, and

the results for all analyses are given in the findings section.

2.4. Inclusion/Exclusion Criteria

While creating the study group of 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.

2.5. Procedures

• **Pilot Application:** The online survey was first applied to 15 people for trial purposes and the understandability of the questions was tested. No problems were experienced at this stage. Subsequently, a field application was initiated.

• **Application of Scales:** The online survey included the Demographic Information Form and TOLDES. It was applied digitally and voluntarily, for a month, between 1-30 May 2023, after the Ethics Committee approval dated 28th of April, 2023.

2.6. Data Processing and Statistical Analysis

Exploratory factor analysis (EFA) was performed in the structure validity studies of TOLDES. To determine the relationship between the subscales and the total scale, the Pearson product of moments correlation coefficient was calculated. In criterion validity studies, the Pearson Correlation Coefficient test was applied using the data set created by applying the data collection tool containing a similar scale to 156 people. Cronbach Alpha value determined the internal consistency reliability coefficient of the scales. The 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. A normality test was applied to the data for comparisons regarding the differentiation of the dependent variable according to some independent variables. Parametric tests (independent group t-test, one-way analysis of variance) were used to examine the differentiation of independent variables according to the dependent variable in the case of normal

distribution. SPSS 26.0 and AMOS statistical programs were utilized for validity/reliability analyses and comparison tests.

3. Results

3.1. Validity and Reliability Studies of the Tendency of Lying in Digital Environments Scale (TOLDES)

In this part of the study, statistical analyses and evaluations were made for the Tendency of Lying in Digital Environments Scale (TOLDES). 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 TOLDES was initially created with 60 items. Interdisciplinary expert opinions were obtained for content validity studies. The items were examined by 6 experts and item fit indices were calculated. Thus, a compliance rate of, 80 was sought in the study, and it was deemed appropriate for 60 items to remain in the scale pool. Subsequently, the candidate scale consisting of 60 items was applied to 495 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,946. The Bartlett Test of Sphericity result was found to be significant ($X^2=12889,33$; $df: 435$; $p=0,000$). It can be said that the data is suitable for factor analysis [82]. Exploratory factor analysis (EFA) was conducted on the 60-item candidate scale data created with expert opinions. During EFA, values with Eigenvalues greater than 1 form a factor. Thus, a 5-factor structure model emerged for TOLDES [83].

TOLDES	Eigenvalue	Variance	Cumulative Variance
Factor 1	15,31	33,39	33,39
Factor 2	1,92	11,14	44,54
Factor 3	1,31	9,29	53,83
Factor 4	1,20	8,10	61,94
Factor 5	1,19	7,89	69,83

Table 1: TOLDES Factor Structure and Explained Variance Ratio

Table 1 shows that the eigenvalues of the factors vary between 15.31 and 1.19. The explained variance rate in the total scale was found to be 69,83%. Item factor loadings were examined after determining the number of factors. When the lower cut-off points of the factor load of each item was, 50, an appropriate structure with

30 items and 5 factors emerged. Thus, 30 items in the scale (1, 4, 5, 8, 9, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 34, 35, 43, 44, 51, 52, 53, 54, 55, 56) were excluded from the scale. Factor load values of the items are given in Table 2.

Factor	New Item Nu.	Items	Factor Load	Item Total Correlation	Cronbach Alpha
F1	1	S31: I tell things that are not true in order not to embarrass myself in front of my followers in the digital environment.	,85	,85	,96
	2	S33: I share things that do not actually exist in order not to lose followers in the digital environment.	,85	,82	
	3	S30: I share unrealistic posts in order not to embarrass myself in front of my followers in the digital environment.	,82	,80	
	4	S29: I share untrue things about my followers so that they like me in the digital environment.	,78	,75	
	5	S32: When someone upsets me in the digital environment, I share untrue things to get revenge on them.	,78	,77	
	6	S27: I tell things that do not actually exist in order to attract the attention of others in the digital environment.	,76	,81	
	7	S42: If I get angry at someone in digital environment, I tell others about things that are not true about them.	,76	,73	
	8	S28: I say things that are not true in order to be happy in the digital environment.	,75	,78	
	9	S40: I share information that I know is not true when I panic about an event in the digital environment.	,74	,64	
	10	S37: I tell unrealistic things about myself to my friends in the digital environment so that they can include me.	,74	,66	
	11	S36: If I am angry at someone in the digital environment, I share untrue things about them so that they can get hurt.	,73	,68	
	12	S48: I can show my musical taste differently to be accepted in the digital environment.	,68	,62	
	13	S39: I show myself differently than I am so that people will admire me in the digital environment.	,65	,67	
	14	S47: I share my location as if I had been to places, I have not been to in the digital environments.	,60	,64	
	15	S38: If I think I will get a reaction when I tell the truth in a digital environment, I talk about things that are not true.	,59	,58	

	16	S41: I can explain an event I fear differently in a digital environment.	,57	,56	
	17	S49: I exhibit eating behaviors that are popular in the digital environment.	,52	,53	
F2	18	S57: If I were to establish a romantic relationship in a digital environment, I would open a fake account.	,77	,72	,86
	19	S59: I mostly share unrealistic or filtered photos of myself with the person I intend to have a romantic relationship with in the digital environment.	,75	,76	
	20	S58: I share unrealistic information with the person I intend to establish a romantic relationship with in the digital environment.	,69	,79	
	21	S60: I can show my conversational style differently with the person I intend to establish a romantic relationship with in the digital environment.	,65	,69	
F3	22	S2: I tend to exaggerate a bit when I tell things about myself in digital media.	,76	,66	,75
	23	S10: I slightly exaggerate my abilities and skills in the digital environment.	,73	,69	
	24	S3: I can create a profile I want by lying in the digital environment.	,63	,56	
F4	25	S16: Gossip is inevitable in the digital environment. Therefore, there is no point in fighting against it.	,80	,67	,75
	26	S6: I gossip about my friends in the digital environment.	,78	,71	
	27	S7: I think gossiping in the digital environment is harmless.	,68	,63	
F5	28	S50: I think there is no harm in making myself look popular by buying followers in the digital environment.	,74	,71	,73
	29	S46: I think there is no harm in engaging in troll behavior in the digital environment.	,73	,63	
	30	S45: Having a fake account in the digital environment makes me feel safe.	,63	,62	
Total					,95

As a result of the EFA, the TOLDES scale form, consisting of 30 items and 5 factors, was rated on a 5-point Likert type as “Never”, “Rarely”, “Sometimes”, “Frequently” and “Always”. A minimum of “1” and a maximum of “5” points can be obtained from each item.

Table 2: TOLDES Item Factor Loads, Item Total Correlations, and Cronbach Alpha Values

Table 2 shows the factor and item distributions in the scale. Later items were renumbered and renamed. Accordingly, Factor 1 (Items 1-17) is “Unrealistic Sharing”; Factor 2 (Items 18-21) “Romantic Deception”; Factor 3 (Items 22-24) “Exaggeration”; Factor 4 (Items 25-27) “Gossip”; Factor 5 (Items 28-30) is named as “Anonymity”. Item-total correlations were within the acceptable range

and related to the scale ($r > .30$) Cronbach Alpha values were calculated for the reliability studies. They were found to be between ,73 and ,96, and the total of the scale was found to be ,95. In addition, the relationship between the 5 factors resulting from the factor analysis was calculated with the Pearson Correlation Coefficient and is given in Table 3.

Sub-scale/Scale	Unrealistic Sharing	Romantic Deception	Exaggeration	Gossip	Anonymity
Unrealistic sharing	1				
Romantic deception	,72	1			
Exaggeration	,50	,51	,1		
Gossip	,56	,44	,44	1	
Anonymity	,62	,51	,44	,40	1
TOLDES	,94	,80	,69	,64	,73

Table 3: Relationship Between TOLDES and its Dimensions

When Table 3 is examined, the factors were found to be related. It seems that the factors are generally “moderately” related to each other. Three factors (unrealistic sharing, romantic deception, anonymity) that show a strong relationship in the total scale also attract attention.

3.1.3. Discriminant Validity

At this stage, for the discriminant validity study of TOLDES, the 27% upper group and the 27% lower group of the total factors and scale were taken. The independent group t-test was used to see if the difference was significant. The results are given in Table 4.

Sub-scale/Scale	Group	N	X	SS	Sd	t	p
Unrealistic sharing	Upper Group	133	24,75	10,80	264	8,28	,000
	Lower Group	133	17,00	0,00			
Romantic deception	Upper Group	133	6,52	3,11	264	9,36	,000
	Lower Group	133	4,00	0,00			
Exaggeration	Upper Group	133	5,71	1,90	264	16,46	,000
	Lower Group	133	3,00	0,00			
Gossip	Upper Group	133	7,43	2,11	264	24,18	,000
	Lower Group	133	3,00	0,00			
Anonymity	Upper Group	133	6,11	2,37	264	15,12	,000
	Lower Group	133	3,00	0,00			
TOLDES	Upper Group	133	48,24	16,92	264	12,42	,000
	Lower Group	133	30,00	0,00			

Table 4: Discriminant Validity of TOLDES

According to Table 4, 27% of the data set with 495 participants was calculated as 133, and groups of 133 with the highest and lowest scores were formed. The independent group t-test result was significant. Thus, it was concluded that TOLDES is a scale that dimensionally measures the Tendency of Lying in the digital environment.

3.1.4. Criterion Validity of Scales

The Pearson Correlation (r) coefficient of TOLDES and the Types of Lies Scale was calculated for criterion validity. A relationship was found as expected. Table 5 shows that there is a significant moderate relationship ($r = .45$; $p < 0.001$).

Scales	N	X	r	p
TOLDES & Types of Lies Scale	156	33,91	,45	,000
	156	39,33		

Table 5: Pearson Correlation Value of Scales

3.1.5. Confirmatory Factor Analysis

A scale model was drawn by using the AMOS program with the data set created from 300 participants. Confirmatory factor analysis was used. The accuracy of the model was tested with goodness of fit values. Covariance was created between the factors in the model. The goodness of fit values was within the acceptable range. Thus, the model was confirmed ($X^2/Sd=2.57<3$; $RMSEA=.07<.08$; $NFI=.91>.90$; $NNFI=.97>.95$; $CFI=.96>.95$;

$GFI=.92>.90$; $AGFI=.86>.85$).

The lowest score that can be obtained from the scale is 30 and the highest score is 150. The average score of 495 participants was found to be 35,85. The application version and explanations of the scale, which is rated on a 5-point Likert type as “Never”, “Rarely”, “Sometimes”, “Often” and “Always”, are located in Appendix 1.

Item No		Never	Rarely	Sometimes	Often	Always
1	I tell things that are not true in order not to embarrass myself in front of my followers in the digital environment.					
2	I share things that do not actually exist in order not to lose followers in the digital environment.					
3	I share unrealistic posts in order not to embarrass myself in front of my followers in the digital environment.					
4	I share untrue things about my followers so that they like me in the digital environment.					
5	When someone upsets me in the digital environment, I share untrue things to get revenge on them.					
6	I tell things that do not actually exist in order to attract the attention of others in the digital environment.					
7	If I get angry at someone in digital environment, I tell others about things that are not true about them.					
8	I say things that are not true in order to be happy in the digital environment.					
9	I share information that I know is not true when I panic about an event in the digital environment.					
10	I tell unrealistic things about myself to my friends in the digital environment so that they can include me.					
11	If I am angry at someone in the digital environment, I share untrue things about them so that they can get hurt.					
12	I can show my musical taste differently to be accepted in the digital environment.					
13	I show myself differently than I am so that people will admire me in the digital environment.					
14	I share my location as if I had been to places, I have not been to in the digital environments.					

15	If I think I will get a reaction when I tell the truth in a digital environment, I talk about things that are not true.					
16	I can explain an event I fear differently in a digital environment.					
17	I exhibit popular eating behaviors in the digital environment.					
18	If I were to involve in a romantic relationship in a digital environment, I would open a fake account.					
19	I mostly share unrealistic or filtered photos of myself with the person I intend to have a romantic relationship with in the digital environment.					
20	I share unrealistic information with the person I intend to establish a romantic relationship with in the digital environment.					
21	I can show my conversational style differently with the person I intend to establish a romantic relationship with in the digital environment.					
22	I tend to exaggerate a bit when I tell things about myself in digital media.					
23	I slightly exaggerate my abilities and skills in the digital environment.					
24	I can create a profile I want by lying in the digital environment.					
25	Gossip is inevitable in the digital environment. Therefore, there is no point in fighting against it.					
26	I gossip about my friends in the digital environment.					
27	I think gossiping in the digital environment is harmless.					
28	I think there is no harm in making myself look popular by buying followers in the digital environment.					
29	I think there is no harm in engaging in troll behavior in the digital environment.					
30	Having a fake account in the digital environment makes me feel safe.					

Appendix 1: Tendency of Lying in Digital Environments Scale (TOLDES)

Factor 1 in the scale (Items 1-17) is named as “*Unrealistic Sharing*”; Factor 2 (Items 18-21) is “*Romantic Deception*”; Factor 3 (Items 22-24) is “*Exaggeration*”; Factor 4 (Items 25-27) is “*Gossip*”; Factor 5 (Items 28-30) is “*Anonymity*”.

Note: Cronbach Alpha values of the factors in the scale were found to be between ,73 and ,96, and the total of the scale was found to be ,95. The TOLDES scale form, which consists of 30 items and 5 factors, is 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. The lowest score that can be obtained from the scale is 30 and the highest score is 150.

Evaluation: 30-69: “The Tendency of lying in the digital environment is at a low level”, 70-110: “The Tendency of lying in the digital environment is at a medium level”, 111-150: “The Tendency of lying in the digital environment is at a high level”.

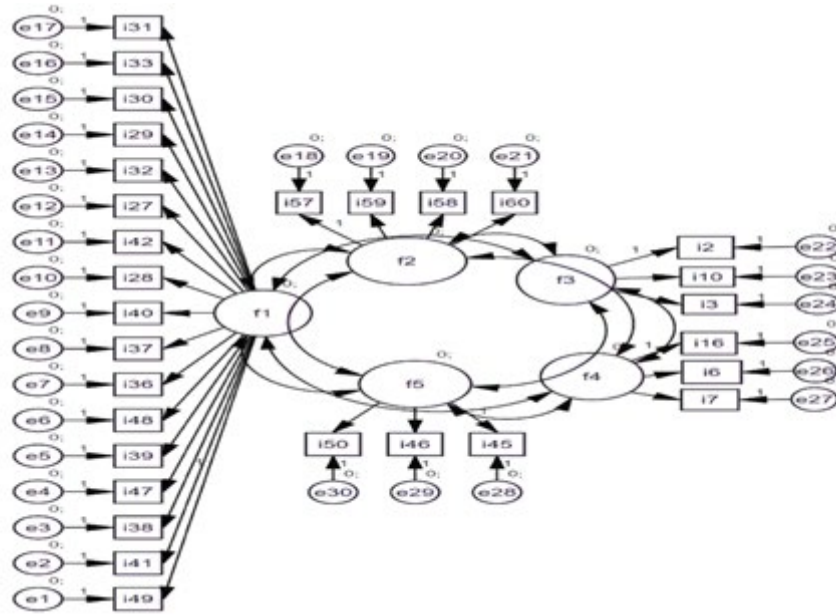


Figure 1: TOLDES Scale Standardized Model

3.2. Examining the Psychometric Properties of the Tendency of Lying in Digital Environments Scale (TOLDES)

As a result of the validity and reliability studies, the average scores received by the participants were calculated by adding each item and dividing by 30. Cohen’s effect size (d) calculation was used

to show the effect size of the groups between genders as shown in Table 6 [84]. It is stated that if the d value is less than 0,2, the effect size can be defined as “weak”, if it is 0,5, it can be defined as “medium”, and if it is greater than 0,8, it can be defined as “strong” [84].

Groups	X	SS	d
TOLDES – Female (n=339)	1,14	,25	0,34 ^{ab}
TOLDES – Male (n=153)	1,29	,56	
Total (n=492)	1,19	,38	
Factors			
Unrealistic sharing – Female (n=339)	,60	,14	0,40 ^{cd}
Unrealistic sharing – Male (n=153)	,70	,32	
Romantic deception – Female (n=339)	,14	,04	0,31 ^{ef}
Romantic deception – Male (n=153)	,16	,08	
Exaggeration – Female (n=339)	,11	,03	0,55 ^{gh}
Exaggeration – Male (n=153)	,14	,07	
Gossip – Female (n=339)	,14	,06	-
Gossip – Male (n=153)	,15	,08	
Anonymity – Female (n=339)	,12	,05	-
Anonymity – Male (n=153)	,13	,06	

The range is between 1-5.

- ^a Reference group was calculated as TOLDES female total $X_1 - X_2 / SD_{\text{Female}}$
- ^b Reference group was calculated as TOLDES male total $X_1 - X_2 / SD_{\text{Male}}$
- ^c Reference group was calculated as unrealistic sharing female total $X_1 - X_2 / SD_{\text{Female}}$
- ^d Reference group was calculated as unrealistic sharing male total $X_1 - X_2 / SD_{\text{Male}}$
- ^e Reference group was calculated as romantic deception female total $X_1 - X_2 / SD_{\text{Female}}$
- ^f Reference group was calculated as romantic deception male total $X_1 - X_2 / SD_{\text{Male}}$
- ^g Reference group was calculated as exaggeration female total $X_1 - X_2 / SD_{\text{Female}}$
- ^h Reference group was calculated as exaggeration male total $X_1 - X_2 / SD_{\text{Male}}$

Table 6: Average TOLDES Scale Scores of the Groups

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 ($t=4,06$; $p<,001$). The TOLDES score of men was found to be higher than women ($X=1,29$). The effect size of the difference between men and women was examined by Cohen's d effect size calculation. Men were found to be closer to the medium impact area in terms of their Tendency of Lying in the digital environment compared to women ($d=0,34$; $>2<5$). In score comparisons made by gender using the independent group t-test, a significant difference was found in three of the five factors ($p<0,05$). Among these factors, unrealistic sharing scores created a difference between genders. It was revealed that men shared more unrealistic information in the digital environment than women ($X=,70$; $t=4,42$; $p<0,05$). When the effect size d value of this difference was examined, an effect close to medium strength was detected ($d=0,40$; $>2<5$). A significant dif-

ference was also found in the romantic deception dimension, and men do more romantic deceptions in the digital environment than women. ($X=,16$; $t=2,88$; $p<0,05$). The effect size of romantic deception is close to medium strength according to Cohen's d result ($d=0,31$; $>2<5$).

When the scores obtained from the exaggeration dimension are compared with the independent group t-test, it is revealed that men make a difference by obtaining higher scores than women. Accordingly, men exaggerate more in digital environments than women ($X=,14$; $t=4,58$; $p<0,05$). This has been found to create a medium-strength impact field. ($d=0,55$; $>2<5$). On the other hand, no significant difference was found in the gossip and anonymity dimensions according to gender ($p>0,05$). The graphical representation obtained from gender comparisons according to the total score of TOLDES is given in Figure 2.

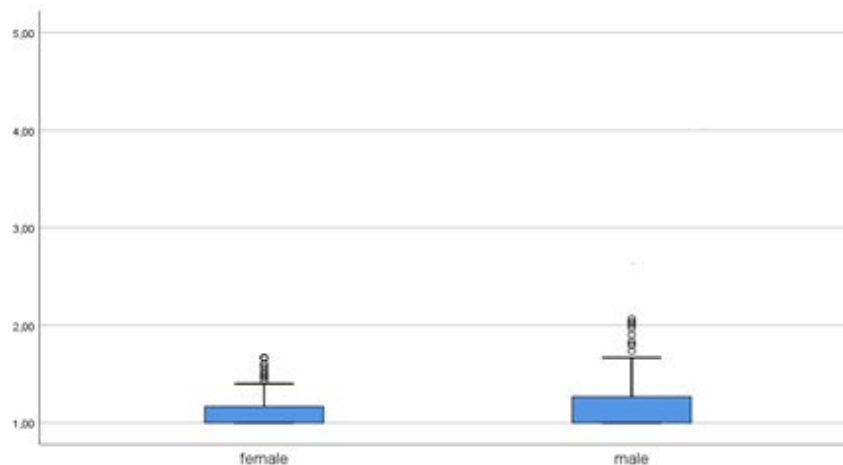


Figure 2: TOLDES Scores of the Groups (Cutoff point of 2.5 was accepted as the middle value)

4. Conclusion / Discussion

As digital technologies gradually develop and spread, individuals escape from real life and create an unreal digital life for themselves. Especially the comfortable nature of virtual environments such as social media creates a problem such as lying, which harms real-life relationships and even various areas of life. Lying is a cognitive and social act. When it reaches a pathological level, it becomes poisonous and harmful to the human soul. Therefore, it now appears as an important issue that needs to be studied on sci-

entific grounds.

This study aimed to develop a valid and reliable scale to measure individuals' Tendency of Lying in the digital environment. Various calculations were made by participating in the scale development processes. A psychometric scale called Tendency of Lying in the Digital Environment Scale (TOLDES) was developed with the data collected from 495 people aged 18 and over. In addition, a model was created from factor structures using the AMOS program with

a data set of 400 people, and the model was validated with confirmatory factor analysis, and acceptable goodness-of-fit values were obtained. Accordingly, TOLDES, consisting of 30 items and 5 factors, explained 69,83% of the total variance. Internal consistency reliability Cronbach Alpha value was found to be ,95. As a result of all analyzes, valid and reliable TOLDES was obtained.

In the first measurements, the TOLDES sample score was found to be 35,85 (average score $X = 1,19$). The evaluation score ranges of the scale were calculated using the equal spacing technique, considering that a minimum of 1 and a maximum of 5 would be taken for each item. Accordingly, a score between 30-69 points is considered as “The Tendency of Lying in the digital environment is at a low level”, between 70-110 points is considered as “The Tendency of Lying in the digital environment is at a medium level”, and between 111-150 points is considered as “The Tendency of Lying in the digital environment is at a high level”. As a result of multiplying the scores obtained by dividing by 30 in the study, it was found that the sample’s Tendency of Lying in the digital environment was at a low level ($X = 35,85$). According to effect size Cohen’s d calculations, an effect size difference was observed in scores between genders. According to comparisons made with independent group t -test, it was found that men’s Tendency of Lying in the digital environment differs from women’s and is at a higher level ($t = 4,06$; $X = 1,29$). It was revealed that this difference created a medium strength effect size ($d=0,34$; $>2<5$). In the dimensional analysis, it was found that men’s Tendency of Lying in terms of unrealistic sharing, romantic deception and exaggeration was higher than women. Gossip and anonymity were seen at similar levels in both men and women.

When the literature is examined, it is seen that there are findings that men lie more successfully [28,56]. It is stated that the frequency of lying does not differ between men and women and that all individuals can resort to lying when they deem it necessary [2]. A study emphasizes that men consider lying to be justified [59]. A study states that men lie more than women in the digital environment. In dimensional analysis, the gossip dimension did not make a difference between men and women, which was found to be compatible with the literature. Another study states that women tell fewer but more other-oriented lies than men [28]. Therefore, the conclusion that women lie for gossip purposes in the digital environment confirms the scientific literature and points out the need to include digital technologies in new research.

Scientific studies mention many factors associated with lying. For example, one of the most important factors is childhood development periods [2,4,41,64]. It is also stated that white lies are used depending on the characteristics of the professions [60]. Therefore, it is important to study and evaluate lying tendencies in a multidimensional way. This study points out that lies are carried to a virtual platform through digital environments and spread rapidly due to the widespread use of social media. Thus, there is a need for a measurement tool that will provide concrete data in research

in terms of multidimensional evaluation of lies. It is thought that TOLDES can be used in new research to provide data to the scientific literature.

Author Contributions

Conceptualization, Aylin Tutgun-Ünal, and Nevzat Tarhan; methodology, Nevzat Tarhan and Aylin Tutgun-Ünal; validation, Aylin Tutgun-Ünal; formal analysis, Aylin Tutgun-Ünal; investigation, Erva Sarıyer, İlkem İnce, Eda Deligöz, Çağrı Akyol Çevirir, and Sena Akbay-Safi; resources, Eda Deligöz, İlkem İnce, Zeynep Çelikaşlan Mete, Ebru Arpacı Nart, Firdevs Sümeyye Tok Çaşkur-lu, Çağla Şen Akkoyun, Osman Sertuğ Çalışkan and Aylin Tutgun-Ünal; data curation, Aylin Tutgun-Ünal; writing—original draft preparation, Aylin Tutgun-Ünal, Eda Deligöz, İlkem İnce, Remziye Keskin; writing—review and editing, Nevzat Tarhan and Aylin Tutgun-Ünal; visualization, Aylin Tutgun-Ünal; supervision, Nevzat Tarhan; project administration, Nevzat Tarhan and Aylin Tutgun-Ünal; funding acquisition, Nevzat Tarhan, and Aylin Tutgun-Ünal All authors have read and agreed to the published version of the manuscript.

Institutional Review Board Statement

The study was conducted by the Declaration of Helsinki, and approved by the Institutional Review Board (or Ethics Committee) of Uskudar University (report code: 61351342/April 2023-31, and date of approval: 28 April 2023)

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability Statement

Please contact the email aylin.tutgununal@uskudar.edu.tr to get access to data.

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