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Research Article / *Özgün Araştırma*

# Development of Photolurking Motivations Scale

## *Photolurking Motivasyonları Ölçeğinin Geliştirilmesi*

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### ABSTRACT

**Objective:** Photolurking is a disorder defined as spending hours looking at photos online. There are many underlying causes for this disorder. This study aims to develop a scale to identify the factors influencing this behavior. For this purpose, we reached 384 individuals living in İstanbul.

**Methods:** The study employed a scale development process. A review of the literature on the subject was conducted, after which a draft scale was created. A process of gathering expert opinions was conducted, followed by the implementation of a pilot study.

**Results:** Subsequently, data were gathered from the sample group. The data were subjected to exploratory and confirmatory factor analysis. The exploratory factor analysis yielded a structure comprising five factors and 29 items. The factors were designated as follows: "preference, inability to resist, planned behavior, keeping informed, and admiration." The structure identified through exploratory factor analysis was subsequently confirmed through confirmatory factor analysis. The fit indices of resulting model are at statistically acceptable level (chi-square minimum discrepancy / degrees of freedom: 2.941, root mean square error of approximation: 0.071, standardized root mean square residual: 0.0642). The overall reliability (Cronbach alpha) coefficient of scale was calculated as 0.942.

**Conclusion:** A valid and reliable measurement tool that can be used to assess individuals' attitudes toward photolurking behavior has been introduced to the literature.

**Keywords:** Photolurking, scale development, digital disorder

### ÖZ

**Amaç:** Photolurking, internet ortamında saatlerce fotoğraflara bakmak olarak tanımlanan bir rahatsızlıktır. Bu rahatsızlığın altında yatan birçok sebep bulunmaktadır. Bu çalışma kapsamında bu davranışı etkileyen faktörlere yönelik ölçek geliştirilmesi amaçlanmaktadır. Bu amaç doğrultusunda İstanbul ilinde yaşamını sürdüren 384 bireye ulaşılmıştır.

**Yöntem:** Çalışmada ölçek geliştirme süreci izlenmiştir. Konuya ilişkin literatür taraması yapılmış ve taslak bir ölçek oluşturulmuştur. Uzman görüşleri alınmış ve ardından pilot uygulama gerçekleştirilmiştir. Sonrasında örneklem grubundan veri toplanmıştır. Elde edilen veriler açımlayıcı ve doğrulayıcı faktör analizine tabi tutulmuştur.

**Bulgular:** Açımlayıcı faktör analizi sonucunda beş faktör ve 29 maddeden oluşan bir yapı ortaya çıkmıştır. Bu faktörler sırasıyla "tercih, karşı koyamama, planlı davranış, haberdar olma ve hayranlık" olarak adlandırılmıştır. Açımlayıcı faktör analizi ile belirlenen yapı, doğrulayıcı faktör analizi ile test edilmiş ve doğrulanmıştır. Ortaya çıkan modelin uyum indeksleri istatistiksel olarak kabul edilebilir düzeydedir (ki-kare değeri / serbestlik derecesi: 2,941, yaklaşım hatasının karekök ortalama karesi: 0,071, standartlaştırılmış kalanların karekök ortalama karesi: 0,0642). Ölçeğin genel güvenilirlik (Cronbach alfa) katsayısı 0,942 olarak hesaplanmıştır.

**Sonuç:** Bireylerin photolurking davranışına yönelik tutumlarını değerlendirmede kullanılabilecek geçerli ve güvenilir bir ölçme aracı literatüre kazandırılmıştır.

**Anahtar kelimeler:** Photolurking, ölçek geliştirme, dijital rahatsızlık

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## INTRODUCTION

The process of digitalisation has had a profound and pervasive impact on virtually every aspect of human life. The advent of digitalisation has resulted in a reduction in the time required for completion of various tasks and processes, while the volume of these tasks and processes has increased. While digitalisation has brought numerous advantages when used in a positive manner, it has also introduced a number of disadvantages, including behavioral disorders and health issues, which affect human life. One such behavioral issue is photolurking. The term "photolurking" is derived from the English words "photo" meaning "photograph" and "lurking" which implies observing secretly. Photolurking is defined as the act of spending an extended period of time online viewing photographs [1-3]. Photolurking is a behavior that has particularly increased following the use of the social media app., Instagram. In addition to the constant posting on Instagram, users create stories that are deleted within 24 hours, and the artificial intelligence driven algorithm constantly displays photos in the app's., explore section, leading to photolurking. Symptoms of photolurking include headaches caused by prolonged screen time, losing track of time, assuming a different identity, emergence of some physiologically induced illnesses, and engaging in digitally violent behavior [2,3]. When individuals engage in photolurking behavior, they derive pleasure from this situation and experience a sense of satisfaction [3]. A review of the literature reveals that studies specifically addressing photolurking are limited. Relevant studies on photolurking in the literature are presented below.

The studies conducted by Kısaç and Şensoy [1], Khalid and Dix [4], Batu and Güler İplikçi [5], and Çiçek [6] have only provided a conceptual definition of photolurking, with an emphasis on how it can be identified as a behavioral disorder, discomfort, and / or illness. Furthermore, these studies identify the factors that may precipitate this condition and its potential consequences. In addition to conceptual studies, Olcay [2] employed qualitative research methods through semi-structured interviews with a sample of five Instagram users, while Koç [7] conducted a survey of 100 students, thereby extending the scope of photolurking research. As is clear from an examination of the literature, there is currently no psychometric measurement tool available for identifying the factors that influence photolurking behavior. This remains a relatively new and primarily conceptual topic [2,7]. The aim of this study is to contribute to literature a measurement tool that psychometrically measures photolurking motivations.

## MATERIAL AND METHOD

### Ethical Considerations of the Study

Before the data collection phase of this study, an application was submitted to the İstanbul Gedik University Ethics Committee. Ethical approval was granted with decision number: 2023/10, dated: 09.11.2023. In line with the principles of the Declaration of Helsinki, data were collected only after obtaining informed consent from all participants.

### Population and Sample of the Study

The population under investigation comprises individuals aged 18 and over residing in the Pendik district of İstanbul. The sample comprised 384 individuals, who were reached through face-to-face methods. In the literature, there is a diversity of opinions regarding the optimal sample size for scale development studies. One perspective suggests that the sample size should be at least five times, and ideally ten times, the number of scale items [8-10]. Other studies consider the number of individuals required, rather than the number of items, with recommendations ranging from a minimum of 100 participants [11] to a minimum of 50 and a maximum of 200 participants [12]. In light of the aforementioned perspectives, it can be concluded that the sample size is representative of the population.

### Data Collection Process

This study is an output of the TÜBİTAK 2209-A University Student Research Projects Support Program, supported under project number 1919B012318471. The project, led by the first author under the academic supervision of the second author, required ethical approval, which was obtained on 09.11.2023. The project acceptance date is 22.03.2024. Consequently, data for the sample were collected between 01.04.2024 and 30.08.2024. Participants who agreed to participate in the study were informed about concept of photolurking.

### Statistical Analysis

IBM SPSS was used for exploratory factor analysis, and IBM AMOS was used for confirmatory factor analysis.

## RESULTS

### Content Validity and Pilot Study

In this phase, a draft scale consisting of 32 items was initially created. The items in draft scale were then submitted for expert review. The experts were academic staff from the Faculty of Educational Sciences, the Faculty of Health Sciences, and the Faculty of Economics and Administrative Sciences. Following the receipt of expert feedback, a pilot test was conducted with 25 participants to identify any ambiguities or issues in item comprehension. Following the expert review and pilot test, three items were removed from the draft scale, resulting in a final version of 29 items. Subsequently, the revised scale was administered to 36 participants over a three-week interval. To ascertain the consistency of responses between the two administrations, Pearson's correlation coefficient was calculated, yielding a correlation of 0.84 (84%). Subsequently, the finalised scale was administered to the study sample of 384 participants.

### Results on Construct Validity

Factor analysis was conducted to determine the factor loadings of the items in the scale. The findings related to the factor analysis of the scale are presented in Table 1.

**Table 1. Results of Explanatory Factor Analysis**

| Factor | Statements | Factor load | Explained variance (%) | Reliability coefficient (cronbach alpha) |
|---|---|---|---|---|
| Preference | PL2: I have little choice but to engage in photolurking. | 0.611 | 17.066 | 0.899 |
| | PL3: I spend my free time engaging in photolurking because I have nothing better to do. | 0.703 | | |
| | PL4: I resort to photolurking as social media is my only means of socializing. | 0.588 | | |
| | PL21: I engage in photolurking because I don't belong to any group. | 0.553 | | |
| | PL22: I engage in photolurking because I don't have a social life in the real world. | 0.614 | | |
| | PL23: Due to my personality, I'm not a social person, which leads me to photolurk. | 0.633 | | |
| | PL24: Engaging in photolurking fulfills my need for social interaction. | 0.682 | | |
| | PL29: I engage in photolurking to satisfy myself psychologically. | 0.661 | | |
| | PL31: Few things bring me as much enjoyment as photolurking. | 0.562 | | |
| | PL32: I lose myself in photos to keep my mind off stress. | 0.522 | | |
| Inability to resist | PL10: I lose track of time when browsing photos on my social media accounts. | 0.615 | 12.282 | 0.836 |
| | PL11: Although I don't intend to get lost in photos for a long time, I can't stop myself. | 0.592 | | |
| | PL12: Even if I plan to look at photos briefly, I struggle to follow through. | 0.657 | | |
| | PL13: Over time, I've noticed I photolurk even on content that doesn't interest me. | 0.450 | | |
| | PL14: I lose myself in the photos of people I feel close to. | 0.590 | | |
| | PL15: I want to look at photos related to content that resonates with me. | 0.661 | | |
| | PL16: I engage in photolurking on topics that catch my interest. | 0.593 | | |
| Planned behavior | PL5: I set aside time to look at the photos of people I follow. | 0.485 | 11.575 | 0.805 |
| | PL7: I make free time during the day to review photos posted by those I follow. | 0.635 | | |
| | PL8: I carve out time to view newly uploaded photos related to content I follow. | 0.617 | | |
| | PL9: No matter how busy I am, I find time to view new photos on the topics I follow. | 0.687 | | |
| | PL20: I constantly check my social media accounts to avoid missing newly uploaded photos. | 0.597 | | |
| Keeping informed | PL25: I engage in photolurking to stay informed about various topics around the world. | 0.748 | 8.998 | 0.761 |
| | PL26: I engage in photolurking to keep myself updated on current events. | 0.734 | | |
| | PL27: One of the main reasons I lose myself in photos is my interest in following celebrity news. | 0.496 | | |
| | PL28: I engage in photolurking to keep up with the latest trends in areas that interest me. | 0.621 | | |
| Admiration | PL18: I engage in photolurking because I'm curious about other people's lives. | 0.682 | 8.741 | 0.789 |
| | PL17: I lose myself in the photos of people living the life I dream of. | 0.645 | | |
| | PL19: I engage in photolurking on content I feel I'll never attain. | 0.540 | | |

Evaluation criteria
Kaiser-Meyer-Olkin Measure of Sampling Adequacy: 0.941
Approx chi-square: 5500.464
Bartlett's test of sphericity: 0.000
Extraction method: Principal components rotation method: Varimax total variance explained: 58.662
Overall reliability coefficient: 0.942
PL: Photolurking

In scale development studies, factor loadings of items should be 0.30 or above [13,14]. In this study, the exploratory factor analysis revealed that the lowest factor loading for any item [photolurking (PL13)] was 0.450. As shown in Table 1, the Kaiser-Meyer-Olkin (KMO) value was found to be 0.941. Since this value falls within the range of $0.80 \leq \alpha < 1.00$, it is considered "excellent." This excellent KMO value indicates that the sample is suitable for factor analysis. Additionally, the Bartlett's test result was $p<0.05$, indicating that the data comes from a multivariate distribution and that there is a high level of correlation among the items.

The developed scale was found to consist of 29 items and 5 factors. The factors were named to best describe the items grouped under them. Explanations for the factor names are as follows:

**Preference:** This factor, titled "preference," includes items that address an individual's choice to engage in photolurking. The preference could be driven by necessity or personal reasons. This factor consists of 10 items and accounts for 17.066% of the variance.

**Inability to Resist:** Named "inability to resist," this factor includes 7 items reflecting the inability to control or resist the behavior, indicating it is performed involuntarily. The factor explains 12.282% of the variance.

**Planned Behavior:** This factor, called "planned behavior," includes items about individuals setting aside time to engage in photolurking, showing they wait eagerly for this time. It consists of 5 items and explains 11.575% of the variance.

**Keeping Informed:** Titled "Keeping Informed" this factor includes items about individuals who engage in photolurking to stay informed on both entertainment and current news. This factor has 4 items and explains 8.998% of the variance.

**Admiration:** Named "admiration," this factor includes items reflecting an individual's interest in the experiences of others that are not part of their own life, leading them to become absorbed in others' posts. This factor comprises 3 items and explains 8.741% of the variance.

The overall reliability coefficient of the 29-item scale was found to be 0.942, with a reliability coefficient of 0.836 for the "preference" factor and 0.805 for the "planned behavior" factor. These values indicate a high level of reliability as they fall within the range of $0.80 \leq \alpha < 1.00$. The reliability coefficient for the "Keeping informed" factor of the developed scale was calculated to be 0.761, and for the "admiration" factor it was 0.789. These values are also reliable as they fall within the range $0.60 \leq \alpha < 0.80$.

To confirm the structure identified by exploratory factor analysis, the data collected were subjected to confirmatory factor analysis using IBM AMOS software. Based on the perspective that exploratory and confirmatory factor analyses can be conducted on simultaneously collected data in scale development [15], data collection for this study was handled by a single source.

The fit diagram of the model generated by IBM AMOS is shown in Figure 1.

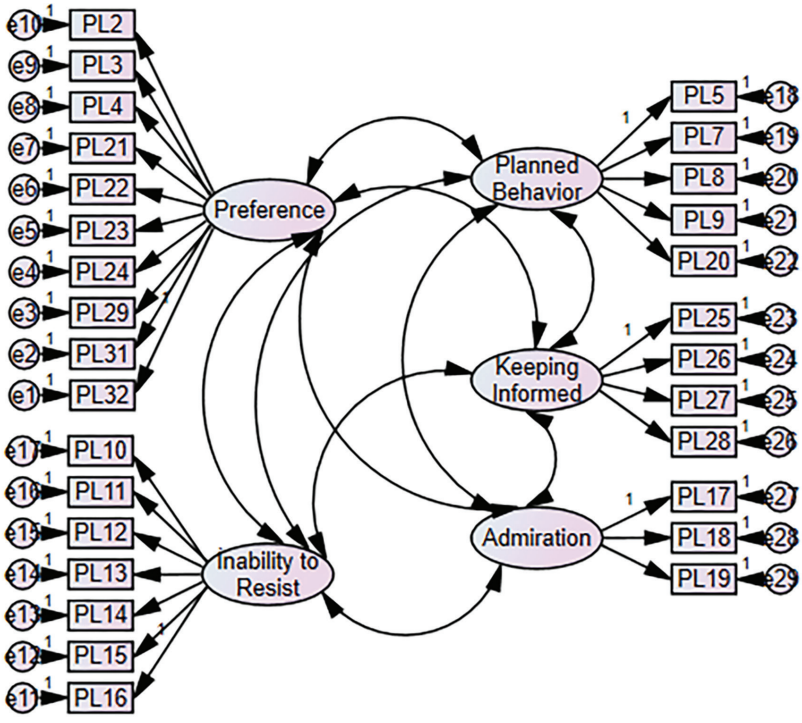


**Figure 1.** Measurement Model
*PL: Photolurking*

Model fit indices were assessed using chi-square minimum discrepancy divided by degrees of freedom (CMIN/df), root mean square error of approximation (RMSEA) and standardized root mean square residual (SRMR) values. Good model fit is indicated when CMIN/df <5, RMSEA <0.08 and SRMR <0.08, which are consistent with established standards [16-20]. In this study, the calculated values were CMIN/df=2.941, RMSEA=0.071 and SRMR=0.0642. Based on these fit indices, the model was considered to have an acceptable fit. The results of the confirmatory factor analysis for the measurement model specified in this research are presented in Table 2.

In Table 2, the "p" value calculated for all pairwise relationships is less than 0.001. This result indicates that the factor loadings of the items are significant, confirming that each item is appropriately assigned to the correct factor. In addition, the standardised regression coefficients for the items are found to be at least 0.595 (for PL8), indicating a high predictive power of the latent variables, i.e. strong factor loadings for the items. The analysis also shows that the Average variance extracted (AVE) values for each factor are above 0.50, except for the admiration factor (0.56), and the composite reliability (CR) values are at or above 0.60. According to Fornell and Larcker [21], even if the AVE is below 0.50, a CR value of 0.60 or higher indicates the validity of the model fit. Based on this criterion, the model is statistically validated for fit [21].

**Table 2. Results of Confirmatory Factor Analysis for the Improved Measurement Model**

| Factor | Statements | Standardized value | Estimate | Standard error | t-value | p | AVE | CR |
|---|---|---|---|---|---|---|---|---|
| Preference | PL2 | 0.600 | 0.872 | 0.084 | 10.353 | <0.01 | 0.47 | 0.86 |
| | PL3 | 0.623 | 0.891 | 0.083 | 10.679 | <0.01 | | |
| | PL4 | 0.666 | 1.005 | 0.089 | 11.293 | <0.01 | | |
| | PL21 | 0.750 | 1.149 | 0.093 | 12.401 | <0.01 | | |
| | PL22 | 0.743 | 1.115 | 0.091 | 12.310 | <0.01 | | |
| | PL23 | 0.709 | 1.069 | 0.090 | 11.867 | <0.01 | | |
| | PL24 | 0.752 | 1.100 | 0.089 | 12.425 | <0.01 | | |
| | PL29 | 0.707 | 1.068 | 0.090 | 11.851 | <0.01 | | |
| | PL31 | 0.670 | 1.013 | 0.089 | 11.343 | <0.01 | | |
| | PL32 | 0.635 | 1.000 | | | | | |
| Inability to resist | PL10 | 0.644 | 1.029 | 0.094 | 11.003 | <0.01 | 0.42 | 0.78 |
| | PL11 | 0.693 | 1.038 | 0.089 | 11.717 | <0.01 | | |
| | PL12 | 0.647 | 1.011 | 0.092 | 11.051 | <0.01 | | |
| | PL13 | 0.641 | 0.937 | 0.085 | 10.969 | <0.01 | | |
| | PL14 | 0.652 | 1.013 | 0.091 | 11.132 | <0.01 | | |
| | PL15 | 0.602 | 0.907 | 0.087 | 10.380 | <0.01 | | |
| | PL16 | 0.668 | 1.000 | | | | | |
| Planned behavior | PL5 | 0.644 | 1.000 | | | | 0.45 | 0.74 |
| | PL7 | 0.680 | 1.033 | 0.092 | 11.227 | <0.01 | | |
| | PL8 | 0.595 | 0.890 | 0.089 | 10.044 | <0.01 | | |
| | PL9 | 0.694 | 1.023 | 0.090 | 11.404 | <0.01 | | |
| | PL20 | 0.746 | 1.135 | 0.094 | 12.058 | <0.01 | | |
| Keeping informed | PL25 | 0.704 | 1.000 | | | | 0.45 | 0.70 |
| | PL26 | 0.662 | 0.967 | 0.089 | 10.916 | <0.01 | | |
| | PL27 | 0.661 | 0.935 | 0.086 | 10.911 | <0.01 | | |
| | PL28 | 0.640 | 0.901 | 0.085 | 10.613 | <0.01 | | |
| Admiration | PL18 | 0.718 | 1.000 | | | | 0.56 | 0.72 |
| | PL17 | 0.765 | 1.148 | 0.085 | 13.512 | <0.01 | | |
| | PL19 | 0.756 | 1.100 | 0.082 | 13.379 | <0.01 | | |

PL: Photolurking, AVE: Average variance extracted, CR: Composite reliability

## DISCUSSION

The concept of photolurking, defined as browsing photos without being aware of the time spent, is considered in the literature as one of the negative effects of the digital age. As photolurking has only recently started to receive attention in the academic field, many studies [1,5-7] have mainly addressed it conceptually or only included a basic conceptual definition in the study. One of the few studies that goes beyond a purely conceptual analysis is the work of Olcay [2], which included a sample of five Instagram users and examined the reasons for engaging in photolurking behavior. By analysing participants' responses to semi-structured questions, the study found that participants typically access Instagram at regular intervals (e.g., every 10, 15, or 30 minutes), but may browse the app., for varying durations depending on the circumstances (ranging from 5 minutes to an uninterrupted hour). Although participants recognised that the time they spent on Instagram was excessive and unnecessary, they admitted that they could not prevent themselves from doing so. In the study contributed by Koç [7], the underlying reasons for photolurking behavior were investigated in a sample group of 100 university students. The results showed that the majority of the participants used social media accounts, with sharing photos and viewing posted images being the main motivations [7]. However, like Olcay's [2] study, Koç's [7] research did not explore the broader social context or the full implications of the concept of photolurking. Therefore, this study was conducted to address this gap [7]. This study differs from previous conceptual-only studies on photolurking [1,5-7], as well as Olcay's [2] and Koç's [7] studies, which reached relatively small sample sizes and did not directly focus on factors influencing individual photolurking behavior. The lack of a measurement tool specifically designed to assess factors influencing photolurking behavior highlights the unique contribution of this study, which aims to fill this gap in the literature.

This tool is expected to serve as a reference in the literature, providing researchers with a reliable measure of photolurking behavior. It is recommended that this measurement tool be used by researchers in social science fields such as sociology and psychology, as well as in health-related fields such as health management, public health and nursing.

As with any study, this research has limitations, which are explained below.

### Study Limitations

In terms of sample availability, study was conducted in a specific region, which creates a geographical limitation. It is recommended that future studies on photolurking, conducted by different researchers, include a larger and more diverse sample group.

The fact that there are limited studies on the subject in literature and that existing studies are generally handled in terms of conceptual framework constitutes limitation in this regard.

## CONCLUSION

In this study, a valid and reliable measurement tool was developed that includes all stages of the scale development process outlined in the literature. The scale consists of five factors and 29 items. It was concluded that the developed measurement tool is a valid and reliable instrument that can be used to identify the reasons behind individuals' engagement in photolurking behavior.

**Appendix 1:** https://d2v96fxpocvxx.cloudfront.net/beb8919b-f013-4ea1-b1c8-40332e840fe1/content-images/007d5cff-be26-41c4-a7b6-8c5631227458.pdf

### Ethics

**Ethics Committee Approval:** Before the data collection phase of this study, an application was submitted to the İstanbul Gedik University Ethics Committee. Ethical approval was granted with decision number: 2023/10, dated: 09.11.2023.

**Informed Consent:** In line with the principles of the Declaration of Helsinki, data were collected only after obtaining informed consent from all participants.

### Footnotes

#### Author Contributions

Concept: GD; Design: YK; Data Collection or Processing: GD; Analysis or Interpretation: YaK; Literature Search: GD,YK; Writing: GD,YK.

**Conflict of Interest:** There is no conflict of interest between the authors.

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