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# Examining Individual Differences in Interpersonal Influence:

# On the Psychometric Properties of the Generalized Opinion Leadership Scale (GOLS)

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GENERALIZED OPINION LEADERSHIP

Abstract

Opinion leadership describes an individual's tendency to informally influence others' attitudes and overt behaviors. In contrast to contemporary views of opinion leadership as a highly domain-specific trait, this paper introduces a multi-faceted personality trait, generalized opinion leadership (GOL) that characterizes exceptionally influential individuals independent of a specific subject area. Two studies report on the psychometric properties of a scale to assess GOL. Study I is based on three independent samples ($N$ = 1,575, $N$ = 1,275, and $N$ = 231) and demonstrates the factorial structure of the instrument and its measurement invariance across sex, age, and educational levels. Study II ($N$ = 310) analyzes multitrait-multiinformant data to highlight the scale's discriminant validity with regard to innovativeness and trendsetting.

*Keywords*: measurement invariance, multitrait-multimethod analysis, personality, social influence

Examining Individual Differences in Interpersonal Influence:

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Personality traits can determine the degree of individuals' interpersonal influence and their ability to shape others' attitudes and behaviors (Flynn, Goldsmith, & Eastman, 1996; Gnambs & Batinic, 2013). A trait describing highly influential individuals is generalized opinion leadership (GOL). In two studies we elaborate on the psychometric properties of a scale to assess GOL. The first study demonstrates the instrument's measurement invariance across sex, age, and educational level in a representative sample of the German population. The second study reports on the discriminant validity with regard to two related concepts in diffusion theory, innovativeness and trendsetting, in a multi-informant design.

## Opinion leadership

Opinion leadership represents a trait characterizing individuals that informally influence attitudes and overt behavior of their peers (Rogers, 2003). Originally, it was viewed as a highly domain-specific measure of individual differences (e.g., Childers, 1986; Flynn et al., 1996; Katz & Lazarsfeld, 1955). Individuals with high levels of opinion leadership influence others within a strongly confined area (e.g., politics), but rarely influence others on a variety of different topics. According to this view opinion leadership represents a narrow personality measure that operates within the confines of specific situations (e.g., to influence voting decisions) and as such represents a combination of domain-independent dispositional characteristics and domain-specific components (e.g., topic involvement). This view guided most of the research on opinion leadership during the recent decades and resulted in hundreds of empirical studies examining individual differences in interpersonal influence in, for example, political decision making (O'Cass & Pecotich, 2005; Park, 2013; Ponder & Haridakis, 2014; Shah & Scheufele, 2006),

public health (Borbas, Morris, McLaughlin, Asinger, & Gobel, 2000; Farley, Hanbury, & Thompson, 2014; Locock, Dopson, Chambers, & Gabbay, 2001), or marketing (Coulter, Feick, & Price, 2002; Vernette, 2004; Wallace, Buil, de Chernatony, & Hogan, 2014). In contrast to this traditional view of opinion leadership, some authors also proposed variants of a more general trait to characterize highly influential individuals (e.g., Steenkamp & Gielens, 2003). For example, market mavens (Feick & Price, 1987) are highly influential consumers that shape consumption and buying decisions of their fellow peers. However, albeit representing a more general variant of opinion leadership, market mavenism is not completely domain-independent but focuses on the marketplace (Gnambs & Batinic, 2011a). As a consequence, the construct is less useful for identifying individuals that, for example, shape the voting decisions or influence leisure activities of their peers. In light of this limitation, attention has recently shifted towards a completely domain-independent, generalized opinion leadership trait (e.g., Batinic & Appel, 2013; Jadin, Gnambs, & Batinic, 2013; Priller, 2009).

## Facets of Generalized Opinion Leadership

Based on previous research on opinion leadership, several core attributes can be distinguished which form a general profile of influential individuals that is independent from a specific subject area. First and foremost, opinion leadership results in interpersonal *influences* on attitudes and behaviors in an individual's social circle (Katz & Lazarsfeld, 1955). In the past, opinion leadership has been linked to such diverse fields as the increased sale of new products (Godes & Mayzlin, 2009), the adoption of new agricultural techniques (Boz & Akbay, 2005), the promotion of political civic participation (Shah & Scheufele, 2006), or the implementation of anti-tobacco norms (Schuster et al., 2006). The degree of an opinion leaders' influence is generally related to an individual's social orientation and communication. Hence, opinion

leadership is typically accompanied by high levels of gregariousness (Weimann, 1991) and word-of-mouth communication (Godes & Mayzlin, 2009). The second central attribute of opinion leadership is the tendency to frequently *give advice* on diverse topics (Katz & Lazarsfeld, 1955). As individuals high in opinion leadership are usually perceived as trustworthy informants by others, they represent the predominant source of information within a group (Raghupathi et al., 2009). This trustworthiness can be a result of actual intellectual competencies (Gnambs & Batinic, 2013), but more often it is a consequence of high levels of self-confidence. Individuals with high levels of opinion leadership are generally more secure about themselves and their abilities (Coulter et al., 2002). Third, individuals high in opinion leadership are the first in their reference group who receive information, filter, and decide whether and what they will pass on to other persons in terms of a *gate keeping* function (Grewal, Mehta & Kardes, 2000). In other words, by filtering the information they receive, opinion leaders regulate the topics of discussion in their reference group. Fourth, individuals high in opinion leadership usually take central positions in their social network (Kratzer & Lettl, 2009; Weimann, 1991) and intuitively adopt attitudes and opinions that approximate the group norm (cf. Lee, Cotte, & Noseworthy, 2010). Consequently, in many aspects they are rather similar to their referent group (Valente, 1996; Venkatraman, 1989). Hence, in ambiguous situations they act as trustworthy role models for others, thus *legitimating* the opinions and behaviors of their social network (Baumgarten, 1975). Moreover, as individuals high in opinion leadership are also concerned with the maintenance of group norms (Schenk, 1993), they not only represent passive role models for others but also actively try to act as mediators and confirm the values and norms of their social group to achieve *harmony*. They use their ability to influence others to strengthen group cohesion and create common attitudes and opinions within the group. Together, these five components, influencing,

gate keeping, advice giving, legitimizing and harmonizing, represent the synopsis of domain-independent attributes of opinion leadership and can be conceived as facets of a generalized opinion leadership (GOL) trait.

## Assessment of Generalized Opinion Leadership

The Generalized Opinion Leadership Scale (GOLS) provides an operationalization of this five-facet concept of GOL (Gnambs & Batinic, 2011ab). This instrument can be applied to any social context to study individual differences in social influence without having to adapt the instrument to specific situations or domains. Thus, it is distinct from previous scales which identified influential individuals within a certain content area, for example, in politics or in music (Childers, 1986; Flynn et al., 1996). In the past, the scale has been successfully applied to identify, for example, influence processes predicting peers' movie choices (Batinic & Appel, 2013) or to the adoption of new technologies (Priller, 2009). Previous studies also provided initial evidence on the construct validity of the GOLS: For example, GOL was meaningfully embedded in a nomological net of traits linking GOL to the traditional view of domain-specific opinion leadership and also the most abstract traits of personality in the form of the Big Five (Gnambs & Batinic, 2012). Moreover, the GOLS also demonstrated convergent validity with similar domain-independent traits such as market mavenism, a variant of GOL limited to the marketplace (Gnambs & Batinic, 2011a). What has been missing so far is a systematical examination of the factorial validity of the GOLS. Althought GOL supposedly incorporates five facets, the facet structrure is typically of less interest in practice. Applied research is mostly interested in the general construct of GOL and, thus, uses the total scale score in their analyses (e.g., Batinic & Appel, 2013; Jadin et al., 2013; Priller, 2009). So far, no study has explicitly corroborated this approach and examined the dimensionality of the GOLS including its five facet structure.

Moreover, information on the discriminant validity of the GOLS is scarce. It is generally assumed that the speed new innovations, products or ideas are adopted within a given population is determined by individual differences in three, albeit related, but nevertheless distinctive traits: innovativeness, trendsetting and opinion leadership (Rogers, 2003). Innovative users are among the first to try new products and procedures; they like to explore new things few others have used before. They, however, do not heavily engage in information exchange with others, but rather influence their environment by using the innovation and thus generating curiosity in their peers (Venkatraman, 1989). Similarly, individuals high in trendsetting like trying new innovations and they follow current trends at an early stage. Moreover, they are communicative and discuss the innovations they currently explore with their peers, thus enhancing trends in their social circle (Batinic, Wolff, & Haupt, 2008). In contrast, individuals high in opinion leadership are not necessarily the first to try new trends and innovations (Rogers, 2003), but, rather, they take central positions in their social network and thus are strongly connected to their peers. Depending on their current social environment they can be innovative if the situation calls for it, but frequently they are not. They promote new innovations and trends if they regard them as beneficial for themselves and their peers, but are ready to ignore them otherwise. So far, there is no empirical support for the notion that the GOLS operationalizes a unique construct that is different from trendsetting and innovativeness.

## Overview

The aim of the present work is to provide additional evidence on the construct validity of the GOLS. Study 1 reports on the factorial structure of the GOL scale and its measurement invariance across sex, age and educational groups. Study 2 demonstrates its discriminant validity in contrast to two related traits in the diffusion process of new innovations, innovativeness and

trendsetting. In addition the study reports on the convergent validity of the scale across self and other perspective.

## Study 1: Factorial Structure and Measurement Invariance

### Method

**Samples.** We adopted a multi-sample strategy and analyzed the psychometric properties of the GOL scale in three independent samples. Thus, each sample acts as a form of cross-validation for the results in the other samples.

***Representative Sample***. Data were collected as part of a representative survey conducted in form of computer-assisted personal interviews by a market research institute. The sample includes 727 men and 848 women ($N$ = 1,575) aged 18 to 88 years ($M$ = 46.99, $SD$ = 16.34) from different parts of Germany. About 50 percent of the participants had finished secondary school while the rest had an educational level equivalent to university entrance qualifications. Most of the sample was currently employed (58%) in different fields of work (including manual and office workers in public services as well as in the private sector) or already in retirement (24%).

***Adult Sample***. The participants were invited by contacting members of a German market research panel. A sample of 1,275 (68% females) in the ages from 18 to 81 years ($M$ = 30.94, $SD$ = 11.56) finished an anonymous web-based survey. About half of the sample had university entrance qualifications and another quarter possessed a university degree. Most participants (over 70%) were currently employed.

***Adolescent Sample***. The participants were members of an academic online panel for youth research that includes students from secondary schools across rural and urban localities in Austria (cf. Stiglbauer, Gnambs, & Gamsjäger, 2011). Participants were invited by email to finish unproctored online questionnaires. The sample includes 177 girls and 57 boys ($N$ = 231) between

13 and 18 years of age ($M$ = 16.45, $SD$ = 1.29). About 18% attended higher general secondary schools, 63% went to secondary schools providing vocational education, and the remaining 19% encompassed students in several specialized school branches.

**Instruments.** All participants in the three samples were administered the GOLS that was developed in a series of preliminary studies. Based on the previously presented model on GOL a group of content experts developed a preliminary pool of self-report items which represented the five facets of generalized opinion leadership, that is, advice giving, gate keeping, legitimizing, harmonizing, and influencing. Subsequently, these items were reduced to a scale of ten items, each representing one of the five facets of generalized opinion leadership (see Table 1). In previous studies (e.g., Gnambs & Batinic, 2012, 2013) exploratory factor analyses typically identified a single dominant factor explaining the majority of the item variances. All respondents answered the items on five-point scales from 1 “not at all true” to 5 “completely true”. The scale had an overall mean of $M$ = 3.04 ($SD$ = 0.70) on a five-point scale in the representative sample, $M$ = 2.93 ($SD$ = 0.55) in the adult sample, and $M$ = 3.17 ($SD$ = 0.62) in the adolescence sample. The coefficient alpha reliabilities fell at .89, .83, and .84, respectively, and, thus, were similar in size to reliability coefficients routinely obtained in personality research such as for the Big Five (cf. Gnambs, 2014ab).

## Results and Discussion

**Factorial structure.** To demonstrate the structure of the scale, covariance structure analyses (robust maximum likelihood estimation) were conducted. The five facets of the GOLS are not presumed to represent independent dimensions of generalized opinion leadership but reflect major attributes of influential individuals, together capturing one latent trait, GOL. Thus, we modeled a bifactorial construct where GOL was specified as a main factor of all ten items in

addition to five supplemental factors, one for each facet. Statistically, the model partitions each item's variance into two trait components, the latent main and the latent secondary traits. The respective model displayed a satisfactory fit in all three samples, $\chi^2(df = 30) = 205$, CFI = .97, TLI = .96, RMSEA = .06 with 90% CI [.05, .07] in the representative sample, $\chi^2(df = 30) = 133$, CFI = .97, TLI = .96, RMSEA = .05 with 90% CI [.04, .06] in the adult sample, and $\chi^2(df = 30) = 75$, CFI = .93, TLI = .90, RMSEA = .08 with 90% CI [.06, .10] in the adolescent sample. All loadings on the main GOL factor were significant, $p < .05$, and of satisfactory size (see Table 1) mostly varying around .70. In contrast, the loadings on the facet-specific factors were rather low and, in fact, were sometimes even not significant. In sum, the ten items primarily capture one main GOL-factor and only to a lesser degree additional facet-specific variations.

**Measurement invariance.** Measurement invariance is a necessary prerequisite to interpret between-group differences in terms of the operationalized construct and to support the notion that between-group differences do not result from psychometric deficiencies in the representative sample. Following Byrne and Stewart (2006) we specified a series of nested multi-group models to examine measurement invariance across sex, age and educational levels. Model comparisons are based on the CFI difference of the competing models, ΔCFI, as the likelihood-ratio test ($\Delta\chi^2$-test) can be rather oversensitive especially for large sample sizes (Cheung & Rensvold, 2002). Per convention ΔCFI should not exceed values of .01. For the tests of measurement invariance four age groups were created, that involve a roughly equal number of years and comparable sample sizes, (a) 18 to 30 years ($N = 301$), (b) 31 to 45 years ($N = 470$), (c) 46 to 60 years ($N = 414$), and (d) above 60 years ($N = 390$). Regarding education, three groups with an educational level equivalent to secondary level ($N = 860$), O-level ($N = 476$), and A-level ($N = 239$) were distinguished. As summarized in Table 2, factorial, intercept, and residual

invariance held for both sexes, all age and educational groups. Thus, the GOLS represents a valid instrument to capture generalized opinion leadership comparable across various socio-demographic groups.

**Latent mean differences.** Given that intercept invariance has been successfully demonstrated, latent means can be compared across groups by constraining the factor weights and intercepts for all groups and fixing the latent factor mean for one group to zero. This group thus operates as a reference group for the others (see Byrne & Stewart, 2006). The latent group mean can then be compared on the basis of the *z* statistic. As summarized in Table 3, men displayed significantly higher latent means than women, as did people with higher educational levels and lower age. Thus, the trait of generalized opinion leadership is unevenly distributed among different socio-demographic groups. Given our representative sample, we are also able to provide norm data of the GOL scale for German adults (see Table 4). The norms are provided for the total sample, and separately for both sexes, three educational levels, and four age groups.

## Study 2: Multitrait-multimethod analysis

The goal of study 2 was to gather multitrait-multiinformant data to highlight the scale's discriminant validity with regard to innovativeness and trendsetting. To this end, we assessed self-report data from the participants as well as data from friends and acquaintances who were requested to report on the participants' traits.

### Method

**Participants and Procedure.** A total of 302 individuals (174 women) with a mean age of 22.53 years (*SD* = 3.17) participated. 151 students provided self-reports of the instruments as part of a course requirement. The peer reports were handed out to the participants to be administered to a close friend or acquaintance and returned in a closed envelope.

**Instruments.** Generalized opinion leadership was assessed with the 10-item GOLS (see Table 1), innovativeness was measured with five items (e.g., "I cannot wait to try something new") from Markowiak (2003) and the degree of trendsetting was quantified by a nine-item (e.g., "I usually provide my friends and acquaintances with lots of information when we discuss the newest ideas, trends, and developments") scale (Batinic et al., 2008) on five-point response scales from "not true at all" to "completely true". The Cronbach's alpha reliabilities were generally satisfactory exceeding $\alpha = .70$ (see Table 5). For the peer ratings the items of the instruments were rephrased to target the referent person; otherwise the questionnaires were identical.

**Results**

The convergent validity coefficient (see Table 5) for the GOLS was satisfactory as indicated by $r = .33$ ($p < .001$) which translates to a true score correlation of $\rho = .45$ when corrected for unreliability. Hence, self-reported GOL and the characterization by a knowledgeable informant overlap to a substantial degree. Comparable coefficient were obtained for innovativeness ($r = .29$, $p < .001$) and trendsetting ($r = .31$, $p < .001$). To demonstrate the discriminant validity of the three constructs a multitrait-multimethod analysis as proposed by Widaman (1985) was conducted. This approach allows for the specification of different hierarchically nested models and the testing of the fit of competing models to determine the model with the best fit. For each construct and each perspective (self, other) the items were combined to form three parcels each. Then a model was specified that included three latent traits only without considering possible method effects. The corresponding model, $\chi^2(df = 132) = 566$, CFI = .64, TLI = .58, RMSEA = .15 with 90% CI [.14, .16], however, displayed an inferior fit. A correlated-trait-correlated-method minus one model (Eid, Lischetzke, Nussbeck, & Tierweiler, 2003) that additionally specified a method for the self-reports in form of correlated error terms,

$\chi^2(df = 96) = 134$, CFI = .97, TL = .95, RMSEA = .05 with 90% CI [.03, .07], led to a significantly better model fit, $\Delta\chi^2(df = 36) = 431$, $p < .001$. This model exhibited a latent correlation between GOL and innovativeness of $r = .25$ ($p < .001$) and between GOL and trendsetting of $r = .52$ ($p < .001$). To demonstrate the discriminant validity of generalized opinion leadership in line with Widaman (1985) two competing models were specified that fixed the correlations between GOL and innovativeness or between GOL and trendsetting to one. If such a model would display an equally good fit the two constructs could not be differentiated. However both models, the one constraining GOL and innovativeness to unity, $\chi^2(df = 97) = 213$, CFI = .90, TLI = .85, RMSEA = .09 with 90% CI [.07, .11], as well as the one constraining GOL and trendsetting to unity, $\chi^2(df = 97) = 191$, CFI = .92, TLI = .88, RMSEA = .08 with 90% CI [.06, .10], displayed worse model fits ($p < .001$) than the unconstrained model with three correlated traits. Thus, the three constructs – albeit correlated – represent unique dimensions of personality.

## General Discussion

A review of previous research on opinion leadership suggested that the contemporary view of opinion leadership as a domain-specific construct may be contrasted with a more abstract, hierarchically superordinate trait that is independent of a specific subject domain. Hence, the generalized opinion leadership scale distinguishes five facets of a general influential personality trait. Two studies demonstrated that these five domain-independent facets of opinion leadership, influencing, advice giving, gate keeping, legitimizing and harmonizing, load on one latent dimension and exhibit discriminant validity with regard to innovativeness and trendsetting.

The studies provided three major results regarding the psychometric properties of the generalized opinion leadership scale: First, the instrument displayed measurement invariance across sex, age, and educational levels. As intercepts can be interpreted in terms of item

difficulties while factor weights are analogous to the item discriminations, the scale is equally concrete and unambiguous for all groups. However men, younger individuals and people with higher education achieve significantly higher scores. Second, GOL represents stable individual differences that result in moderate sized associations between self-perceived opinion leadership and reports by close peers. These convergent validity coefficients are similar to those reported for established constructs in the personality domain such as the Big Five (cf. Gnambs, 2013), giving further support for the interpretation of GOL as a meaningful indicator of individual differences. Third, GOL represents a unique dimension of personality that is distinct from related concepts in applied diffusion research. Innovativeness and trendsetting, albeit correlated with GOL, are distinct traits that are relevant at different stages of the diffusion process (cf. Rogers, 2003). Both alternative traits explain variations with regard to the promotion of new ideas and trends from early on. Opinion leadership, however, describes the tendency to promote innovations only if they have already proven to be advantageous and individuals regard them as beneficial for themselves and their peers.

**Implications for Applied Practice**

To address research questions involving new constructs, researchers need thoroughly developed measurement instruments with known psychometric properties. For the GOLS there is now ample evidence on its factorial, convergent, and discriminant validity (see also Gnambs & Batinic, 2011ab, 2012). Moreover, preliminary evidence also highlighted satisfactory criterion validities of the scale (Batinic & Appel, 2013, Priller, 2009). Furthermore, the present study was also able to provide norm data for the GOLS that can be used as a reference standard to evaluate the distribution of the GOL trait in future samples. Taken together, applied researchers now have a psychometrically sound instrument at hand that can be used to identify particularly influential

individuals. This is a rather important goal in various fields of research: For example, communication and media research could use the GOLS to identify people that might be particularly effective in promoting information transported via mass media (e.g., radio, television or the Internet) and, thus, could shape opinions and attitudes of their peers most strongly (cf. Nisbet & Kotcher, 2009; Shah & Sheufele, 2006). Moreover, researchers interested in propagating new health procedures such as therapies or medicaments (Borbas et al., 2000; Guadagnoli et al., 2000; Locock et al., 2001) or technological inventions (Viswanath, 2006) more quickly could address individuals that are high in GOL to speed up the adoption process within an organization. Last, market research might profit from stratifying consumer groups along the GOLS. In this way particularly influential consumers could be identified that can assist in marketing campaigns for new products. Overall, the GOLS represents an economical measure that allows identification of influential individuals independent of a specific content domain.

**Limitations and Outlook**

Despite the contributions of the presented work several limitations should be noted. First, the GOLS is a self-report instrument and, thus, is suspect to various forms of response distortions (cf. Podsakoff, McKenzie, & Podsakoff, 2012). For example, acquiescence or extreme response styles (e.g., Rammstedt, Kemp, & Borg, 2013; Weijters, Geuens, & Schillwaert, 2010) have been shown to attenuate observed statistics based on self-report scales. Thus, future research is encouraged to explicitly examine to what degree trait estimates derived from the GOLS might be biased by such distortions (see Gnambs & Hanfstingl, 2014, for a respective approach). Second, our examinations of measurement invariance and latent mean differences were limited to three prominent socio-demographic characteristics. Future research might benefit from other stratification criteria and, for example, may also examine differences in GOL for different

consumer or professional groups. Last, the analysis of a scale's measurement properties represents merely one step in the development process of a new assessment instrument. As traits are supposed to represent stable behavioral dispositions on an abstract level they should be predictive of various behavioral outcomes. Regarding generalized opinion leadership preliminary empirical results suggest, that individuals high in GOL are in fact more influential and shape the decisions and behaviors of their social network more strongly than those low in GOL. Batinic and Appel (2013), for example, demonstrated that an individual's level of GOL significantly predicts the media choice of his or her peers. Future studies are encouraged that provide further evidence on the predictive validity of the GOLS for social influence processes in different settings.

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Table 1.

*Factor loadings of the Generalized Opinion Leadership scale*

| | | | Sample 1: Representative sample | | Sample 2: Adults | | Sample 3: Adolescents | |
|---|---|---|---|---|---|---|---|---|
| Facets | | | $\lambda_g$ | $\lambda_s$ | $\lambda_g$ | $\lambda_s$ | $\lambda_g$ | $\lambda_s$ |
| Gatekeeping | 1. | Among my friends and acquaintances, I often decide which issues are current. | .69* | .04 | .54* | .41* | .62* | .20 |
| | 2. | My friends and acquaintances often discuss subjects that I brought up. | .68* | .04 | .51* | .44* | .46* | .21 |
| Influencing | 3. | I usually succeed if I want to convince someone about something. | .69* | .20* | .64* | .34* | .66* | .31* |
| | 4. | It is easy for me to influence other people. | .70* | .18* | .71* | .28* | .72* | .28* |
| Legitimizing | 5. | I am often the one among my friends and acquaintances who approves important decisions. | .68* | .32* | .59* | .44* | .53* | .23* |
| | 6. | I am often asked to make decisions for friends and acquaintances. | .69* | .33* | .56* | .42* | .64* | .24* |
| Advice-giving | 7. | People in my social circle frequently act upon my advice. | .70* | .06 | .60* | .13 | .55* | .00 |
| | 8. | I have the impression that I am regarded by my friends and acquaintances as a good source for tips and advice. | .71* | .06 | .65* | .11 | .63* | .00 |
| Harmonizing | 9. | I often use my persuasive powers during discussions to reach agreements quickly. | .70* | .11 | .67* | .19* | .69* | .00 |
| | 10. | It is important for me that my friends and acquaintances agree on basic things. | .49* | .11 | .16* | .19* | .34* | .00 |
| | | *CFI* / *TLI* / *RMSEA* | .97 / .96 / .06 | | .97 / .96 / .05 | | .93 / .90 / .08 | |
| | | *N* | 1,575 | | 1,275 | | 231 | |
| | | Cronbach's alpha | .89 | | .83 | | .84 | |

*Note.* $\lambda_g$ = General factor loading in bifactor model; $\lambda_s$ = Specific factor loading in bifactor model; *CFI* = Comparative fit index, *TLI* = Tucker-Lewis Index, *RMSEA* = Root mean error of approximation;

* $p < .05$.

Table 2.

*Tests for measurement invariance of the Generalized Opinion Leadership Scale*

| Model | $\chi^2$ | *df* | *CFI* | *TLI* | *RMSEA* | Δ*CFI* |
|---|---|---|---|---|---|---|
| *Sex*<br>*female (N =848) vs. male (N = 727)* | | | | | | |
| S1. Configural invariance | 203 | 60 | .972 | .958 | .055 [.047, .063] | |
| S2. Factor weights invariance | 220 | 70 | .971 | .962 | .052 [.044, .060] | .001 |
| S3. Intercept invariance | 246 | 79 | .967 | .963 | .052 [.045, .059] | .005 |
| S4. Residual invariance | 264 | 94 | .967 | .968 | .048 [.041, .055] | .005 |
| *Age:*<br>*18-30 (N = 301) vs. 31-45 (N = 470) vs. 46-60 (N = 414) vs. 61+ (N =390)* | | | | | | |
| A1. Configural invariance | 235 | 120 | .977 | .965 | .049 [.040, .059] | |
| A2. Factor weights invariance | 271 | 150 | .976 | .971 | .045 [.037, .054] | .001 |
| A3. Intercept invariance | 310 | 177 | .973 | .973 | .044 [.035, .052] | .004 |
| A4. Residual invariance | 393 | 222 | .966 | .972 | .044 [.037, .051] | .011 |
| *Educational level:*<br>*Secondary level (N =860) vs. University entrance qualification (N = 476) vs. University degree (N = 239)* | | | | | | |
| E1. Configural invariance | 243 | 90 | .969 | .954 | .057 [.048, .066] | |
| E2. Factor weights invariance | 277 | 110 | .966 | .959 | .054 [.046, .052] | .003 |
| E3. Intercept invariance | 307 | 128 | .964 | .962 | .052 [.044, .059] | .005 |
| E4. Residual invariance | 353 | 158 | .961 | .966 | .049 [.042, .055] | .008 |

*Note*. *N* = 1,575. *CFI* … Comparative fit index, *TLI* … Tucker-Lewis Index, *RMSEA* … Root mean error of approximation with 90% confidence interval, Δ*CFI* … CFI difference to model 1

Table 3.

*Tests for latent mean differences of the Generalized Opinion Leadership Scale*

| | Difference estimate | *z* | *p* |
|---|---|---|---|
| *Sex* | | | |
| Female vs. Male | .16 | 2.87 | .004 |
| *Age groups* | | | |
| 18-30 vs. 31-45 | -.08 | -0.97 | .33 |
| 18-30 vs. 46-60 | -.20 | -2.53 | .01 |
| 18-30 vs. 61+ | -.52 | -6.34 | <.001 |
| *Educational levels* | | | |
| University degree vs. University entrance qualification | -.21 | -2.43 | .02 |
| University degree vs. Secondary level | -.56 | -6.90 | <.001 |

*Note*. Means of the first groups were fixed to zero and thus the first groups act as the reference group.

Table 4.

*Norm data for the GOLS*

| | Total | Sex | | Educational level | | | Age | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Percentile | | Female | Male | Sec. | O | A | 18-30 | 31-45 | 46-60 | 60+ |
| 100 | 4.60 | 4.60 | 4.60 | 4.50 | 4.60 | 4.60 | 4.50 | 4.60 | 4.50 | 4.60 |
| 90 | 3.94 | 3.90 | 4.00 | 3.80 | 4.00 | 4.10 | 4.00 | 4.00 | 3.90 | 3.80 |
| 80 | 3.70 | 3.60 | 3.80 | 3.50 | 3.90 | 3.90 | 3.70 | 3.80 | 3.70 | 3.50 |
| 70 | 3.50 | 3.40 | 3.50 | 3.30 | 3.59 | 3.70 | 3.60 | 3.50 | 3.40 | 3.30 |
| 60 | 3.30 | 3.30 | 3.30 | 3.10 | 3.4ß | 3.60 | 3.40 | 3.40 | 3.30 | 3.00 |
| 50 | 3.10 | 3.00 | 3.20 | 2.90 | 3.20 | 3.40 | 3.30 | 3.20 | 3.10 | 2.80 |
| 40 | 2.80 | 2.80 | 2.90 | 2.70 | 3.00 | 3.20 | 3.08 | 2.90 | 2.90 | 2.60 |
| 30 | 2.60 | 2.50 | 2.70 | 2.50 | 2.80 | 2.90 | 2.80 | 2.70 | 2.60 | 2.40 |
| 20 | 2.40 | 2.40 | 2.40 | 2.30 | 2.50 | 2.60 | 2.60 | 2.50 | 2.40 | 2.20 |
| 10 | 2.10 | 2.00 | 2.10 | 2.00 | 2.20 | 2.20 | 2.20 | 2.10 | 2.05 | 2.00 |
| *N* | 1,575 | 848 | 727 | 860 | 476 | 239 | 301 | 470 | 414 | 390 |
| *M* | 3.04 | 3.00 | 3.09 | 2.92 | 3.14 | 3.27 | 3.17 | 3.12 | 3.04 | 2.84 |
| *SD* | 0.70 | 0.68 | 0.71 | 0.68 | 0.69 | 0.69 | 0.65 | 0.69 | 0.70 | 0.69 |

*Note.* Data were collected as part of a representative survey in Germany conducted in form of computer-assisted personal interviews by a market research institute. Corresponding educational levels in Germany are “Hauptschule” (Secondary school), “Mittlere Reife” (O-Level) and “Abitur” (A-level).

Table 5.

*Correlations between self and peer reports*

| | *M* | *SD* | 1. | 2. | 3. | 4. | 5. | 6. |
|---|---|---|---|---|---|---|---|---|
| Self report | | | | | | | | |
| 1. Generalized opinion leadership | 2.93 | 0.43 | *.71* | | | | | |
| 2. Early adopting | 3.05 | 0.72 | .23* | *.81* | | | | |
| 3. Trendsetting | 3.05 | 0.53 | .43* | .45* | *.78* | | | |
| Peer report | | | | | | | | |
| 4. Generalized opinion leadership | 3.06 | 0.42 | .33* | .04 | .20* | *.75* | | |
| 5. Early adopting | 3.09 | 0.78 | .02 | .29* | .21* | .25* | *.86* | |
| 6. Trendsetting | 3.23 | 0.57 | .10 | .19* | .31* | .47* | .66* | *.85* |

*Note.* $N$ = 151. Cronbach Alpha's reliabilities are in the main diagonal. Convergent validity coefficients are in black in the diagonal of the grey block.

* $p < .05$.