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## LATENT STRUCTURE AND PSYCHOMETRIC PROPERTIES OF THE STERLID INSTRUMENT FOR LEADER STEREOTYPES: A PILOT STUDY<sup>4</sup>

**ABSTRACT:** The aims of this paper are the development of an instrument for operationalizing stereotypes about leaders and the evaluation of its psychometric properties. The primary focus of measurement is the perceived traits that shape a generalized, i.e., stereotypical image held by respondents regarding individuals in leadership positions. The instrument was developed based on a broad corpus of characteristics associated with various aspects of leaders' personalities. The construction procedure involved two phases of pilot testing on samples of 162 and 218 participants, respectively, with the scale and selecting the goal of building items with the most robust psychometric properties. Exploratory factor analysis revealed a three-factor structure. Based on content analysis, the extracted factors were labeled: Trust, Dominance over Others, and Competence. These factors enable the assessment of both the positivity and negativity of stereotypes, as well as a clearer understanding of the specific traits of leaders that shape respondents' generalized perceptions.

**KEYWORDS:** stereotype, leader, psychometric properties, STERLID

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## **1. Introduction**

Within group dynamics, one of the most significant relationships for its functioning is the interaction between members and the leader, as well as the leader's relationship toward group members. The nature of this relationship is shaped not only by the history of specific transactions, but also by a generalized, stereotypical image that individuals adopt within a given social context. Thus, the stereotypical image serves both as a perceptual orientation and as a factor in establishing interactions in current and/or future roles of group members and leaders.

Leadership, as an object of stereotype, may be considered universal in the sense that, as members of various groups, we explicitly or implicitly construct images of individuals occupying higher hierarchical positions—precisely because of the importance and prominence of their role. When examining young people, their attitudes and orientations in the context of entrepreneurial inclination, one of the key questions is how they perceive leaders. The stereotypical nature of their perception stems from the fact that young people's experience with leaders is still sporadic, given their age, but also from the generalizations typical of situations in which attitudes toward certain categories of people are being examined.

Stereotypes are widely accepted and simplified representations of particular groups of people, categorized according to various criteria such as race, gender, age, profession, and group status (Eagly & Koenig, 2021). Stereotypical portrayals are generalized assumptions about the traits attributed to members of specific social categories (Hilton & von Hippel, 1996). They function as cognitive shortcuts that help individuals categorize and process social information. However, they carry significant social consequences in how individuals are treated and in how communication is established, primarily through the lens of group affiliation.

To elaborate the object of stereotype, we drew upon theoretical approaches grounded in the characteristics of leaders. At its core, leadership entails the ability to influence others toward the achievement of a shared goal (Northouse, 2018). The complexity of this concept is evident in the diversity of approaches to its study. One such approach is based

on the assumption that leaders possess specific traits, whether innate or acquired. The spectrum of these traits is as broad as the role of the leader itself, yet several key attributes can be identified, such as intelligence, self-confidence, charisma, decisiveness, sociability, and integrity (Northouse, 2018).

Researchers adopting this trait-based approach have also examined the characteristics that distinguish successful leaders from less successful ones. These include high energy potential and stress tolerance, self-confidence, an internal locus of control, emotional maturity, personal integrity, socialized power motivation, a moderately high achievement orientation, and a moderate need for affiliation (Franceško, 2003; Yukl, 2012).

A more recent approach to leadership emphasizes skills, foregrounding the potential for learning and developing technical, interpersonal, and conceptual competencies (Northouse, 2018). Regardless of whether leadership behaviors are primarily innate or acquired, it is essential to consider followers' trust in the leader's abilities and intentions. Some of the traits associated with this trust, as identified by various authors, include ethical conduct (Brown & Treviño, 2006), competence and integrity (Mayer et al., 1995), empathy (Goleman, 1998), and fairness (Dirks & Ferrin, 2002).

In shaping interactions grounded in group members' trust, the influence of stereotypical perceptions of hierarchically prominent roles is unavoidable. These perceptions emerge as a composite of prior experience and generalized imagery through which every leader is evaluated.

A brief overview of the trait-based approach highlights a particular challenge: the effort to both distinguish and synthesize the numerous attributes associated with leaders. In constructing a stereotype scale related to leaders, we aimed to encompass a broad corpus of traits that could be grouped into interpretable categories. Previous research on stereotypes in this domain has primarily focused on categorizing leaders by gender, race, age, and physical appearance. For instance, successful women in leadership positions are often perceived as less warm and personable, which leads to social and professional consequences, even when their achievements match those of their male counterparts (Eagly

& Karau, 2002; Heilman & Okimoto, 2007). The authors will argue that the trait-based approach to leadership stereotypes remains underrepresented in research addressing this complex issue.

Recognizing the significance of this broad, generalized factor in social perception, we developed the STERLID Scale of Stereotypes Toward Leaders, designed to assess both hetero- and auto-stereotypes related to leadership. The aim of this study is to examine the psychometric properties of the instrument, with a particular focus on evaluating the substantive interpretation of stereotypes. This entails seeking answers to the following questions:

- Does the instrument allow for a coherent substantive interpretation that encompasses traits and competencies identified in various theoretical approaches and leadership studies?
- Can interpretable factors of stereotypical perception be extracted that enable an understanding of the core structure of stereotypes?
- Does the instrument include an evaluative component that permits assessment of the positivity or negativity of respondents' stereotypical images?

## **2. Method**

### **2.1 Sample**

The procedure for constructing the stereotype scale involved two stages, each requiring distinct participant samples. The first stage included 168 university students who completed two preliminary versions of the instrument. The results presented in this paper were obtained during the second stage, based on a sample of 218 participants aged between 18 and 55 years ( $M = 31.66$ ;  $SD = 20.14$ ). Of the total sample in the second stage, 62.4% were female.

### **2.2 Scale Construction Procedure**

The construction of the instrument was based on a list of traits deemed significant for the role of a leader within a group. In an effort

to capture a broad spectrum of characteristics, several categories were delineated.

- Motivational traits focused on social motives, including components of achievement and power motivation, aspects of affiliative tendencies, and general orientations toward others. Examples include: *take initiative, desire success, enjoy power, enjoy socializing, are pushy/self-serving*.
- Emotional reactions included descriptors such as: *are relaxed, are cold*, and similar affective indicators.
- Cognitive abilities were represented by traits such as: *are one step ahead in problem-solving, accurately perceive others' needs, have original approach to problem-solving*.
- Indicators of (un)ethical behavior included: *are devious, are corrupt, are true to their word*, among others.
- Skills and competencies encompassed both implicit and explicit markers of success, efficiency, and capability as outcomes. Examples include: *handle problem situations well, have expertise, influence others*.

The entire corpus of traits can be theoretically classified into those primarily oriented toward task execution and those oriented toward interpersonal interaction.

Two versions of the scale were developed, differing in the instructions provided to participants. Both versions included 61 leadership-related traits. In the first version, participants ( $N = 82$ ) were instructed to rate the extent to which each trait is typical of leaders, using a scale from 0 (not at all typical) to 5 (extremely typical). In the second version, participants ( $N = 86$ ) were asked to estimate the percentage of leaders who possess each trait, using a scale ranging from 0% (no leaders) to 100% (all leaders), with intermediate points at 20%, 40%, 60%, and 80%.

By employing both formats, we aimed to examine similarities and differences in participants' response patterns and to assess the interpretive clarity of the results in order to select the more suitable version of the instrument. This evaluation was conducted through statistical analyses as well as qualitative insights gathered via focus group discussions.

Results from an exploratory factor analysis with Promax rotation in this initial pilot study indicated that the structural composition of both formats did not differ significantly. Consequently, the present study employed the STERLID instrument using the six-point rating scale ranging from 0 (not at all typical) to 5 (extremely typical).

The first stage of the research was conducted between February and June 2022, while the second stage—whose results are presented in this paper—was carried out between March and June 2023. In both stages, participants completed paper-and-pencil versions of the scale.

### 2.3. Data Analysis

The psychometric analysis of the STERLID scale, composed of 61 items, was conducted in two phases. In the first phase, item difficulty and the factor structure of the scale were examined. Exploratory factor analysis was performed using the principal axis method. In the second phase, factor validation was repeated on the remaining set of 54 items, and psychometric analysis was conducted using the Rtt10g macro. As part of the item analysis, the following metrics were reported: arithmetic mean and standard deviation, item discrimination (defined as corrected item-total correlation), item representativeness (defined as the multiple correlation between each item and the remaining items), Cronbach's alpha if the item is deleted, factor loading on the first Promax factor, and loading on the first principal component. Acceptable values for corrected item-total correlation ranged from 0.30 to 0.80, and for item representativeness from 0.40 to 0.70 (Fajgelj, 2020).

The psychometric analysis of the subscales was based on the following indicators:

- Representativeness, assessed via the normalized Kaiser–Meyer–Olkin (KMO) coefficient
- Reliability, measured by Cronbach's alpha (a type of internal consistency)
- Reliability of the first principal component, evaluated using the Lord–Kaiser–Caffrey coefficient

- Homogeneity, assessed through average inter-item correlations within subscales and Momirović's coefficient of homogeneity

A normalized KMO coefficient above 0.60 is considered indicative of representativeness. Reliability coefficients greater than 0.70 are deemed acceptable. Homogeneity is supported when Momirović's coefficient exceeds 0.60 (Tenjović & Radovanović, 1995), and a secondary criterion for homogeneity is met when the average inter-item correlation within subscales falls within the range of 0.20 to 0.50 (Clark & Watson, 1995).

### 3. Results

The psychometric analysis of the scale began with an item-level review, specifically an examination of the arithmetic means and standard deviations of individual items (Table 1). Items with arithmetic means exceeding 4.25 (e.g., *Desire to achieve success*, *Like power*, *Influence others*, *Resourceful*, *Enjoy control*) were excluded due to the negative impact of their skewness on other psychometric properties. However, based on the high mean values for these items, we also inferred that these traits—alongside others with elevated mean scores—constitute the dominant stereotype of a leader.

Subsequently, an exploratory factor analysis was conducted using the principal axis method with oblique Promax rotation. The decision to retain a three-factor solution was guided by parallel analysis and Cattell's scree test (Figure 1, left).

**Table 1** – Descriptive metrics for the original item set, segment of the factor loading matrix (principal axis method), factor correlations, and total variance captured

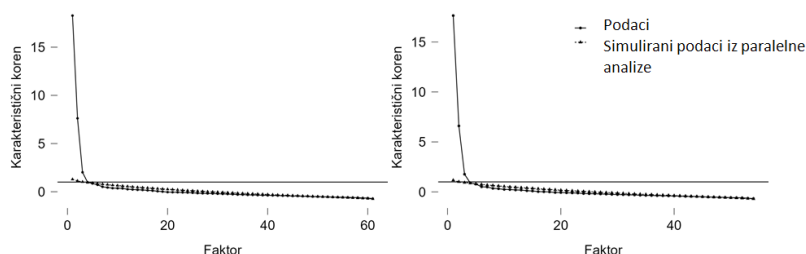
|       | Items                                     | Descriptive metrics |     |      |      | Factor structure matrix |     |     |
|-------|-------------------------------------------|---------------------|-----|------|------|-------------------------|-----|-----|
|       |                                           | Min                 | Max | M    | SD   | F1                      | F2  | F3  |
| st1*  | Dislike change                            | 0                   | 5   | 2.59 | 1.55 |                         |     |     |
| st2*  | Like power                                | 0                   | 5   | 4.44 | .82  |                         | .35 | .32 |
| st3   | Are one step ahead in problem-solving     | 0                   | 5   | 3.90 | .95  | .40                     |     |     |
| st4   | Consider consequences of their actions    | 0                   | 5   | 3.46 | 1.22 | .67                     |     |     |
| st5*  | Influence others                          | 2                   | 5   | 4.39 | .71  |                         |     | .40 |
| st6   | Handle problem situations well            | 0                   | 5   | 3.83 | .98  | .53                     |     |     |
| st7   | Tend to blame others for mistakes         | 0                   | 5   | 3.04 | 1.45 |                         | .61 |     |
| st8   | Perform their duties responsibly          | 0                   | 5   | 3.72 | .99  | .77                     |     |     |
| st9   | Apt in problem-solving                    | 0                   | 5   | 3.85 | .95  | .64                     |     |     |
| st10  | Create interpersonal conflicts            | 0                   | 5   | 2.10 | 1.38 |                         | .72 |     |
| st11* | Desire to achieve success                 | 2                   | 5   | 4.74 | .58  |                         |     | .43 |
| st12  | True to their word                        | 0                   | 5   | 3.48 | 1.20 | .95                     |     |     |
| st13  | Adapt to new circumstances easily         | 0                   | 5   | 3.63 | .97  | .54                     |     |     |
| st14  | Corrupt                                   | 0                   | 5   | 2.70 | 1.47 |                         | .54 |     |
| st15  | Have expertise                            | 0                   | 5   | 3.83 | .97  | .61                     |     |     |
| st16  | Innovative                                | 0                   | 5   | 3.52 | 1.06 | .79                     |     |     |
| st17  | Accurately perceive others' needs         | 0                   | 5   | 3.20 | 1.21 | .84                     |     |     |
| st18  | Make an impression on others              | 0                   | 5   | 4.09 | .91  |                         |     | .53 |
| st19* | Make decisions independently              | 1                   | 5   | 3.96 | .91  |                         |     |     |
| st20  | Cold                                      | 0                   | 5   | 2.93 | 1.27 |                         | .71 |     |
| st21  | Have original approach to problem-solving | 0                   | 5   | 3.28 | 1.07 | .81                     |     |     |
| st22  | Accurately assess others                  | 0                   | 5   | 3.61 | 1.01 | .51                     |     | .32 |
| st23  | Enjoy socializing                         | 0                   | 5   | 3.65 | 1.00 |                         |     | .41 |
| st24  | Trust their skills                        | 1                   | 5   | 4.25 | .80  |                         |     | .62 |
| st25  | Keep up with the times                    | 1                   | 5   | 3.64 | 1.05 | .42                     |     |     |
| st26  | Act impulsive                             | 0                   | 5   | 2.80 | 1.26 |                         | .62 |     |
| st27  | Intelligent                               | 0                   | 5   | 3.87 | 1.01 | .41                     |     | .38 |
| st28  | Good speakers                             | 1                   | 5   | 4.25 | .90  |                         |     | .53 |
| st29  | Cooperative                               | 0                   | 5   | 3.48 | 1.07 | .61                     |     |     |
| st30  | Know their priorities                     | 0                   | 5   | 3.78 | .99  | .54                     |     | .31 |
| st31  | Strict                                    | 1                   | 5   | 3.52 | 1.04 | .39                     | .65 |     |
| st32  | Caring                                    | 0                   | 5   | 3.04 | 1.14 | .87                     |     |     |
| st33  | Meddlesome                                | 0                   | 5   | 3.46 | 1.31 |                         | .51 | .39 |
| st34  | Know how to make money                    | 0                   | 5   | 4.22 | .98  |                         |     | .55 |
| st35* | Enjoy control                             | 0                   | 5   | 4.28 | .96  |                         | .50 | .42 |
| st36  | Think they are all-powerful               | 0                   | 5   | 3.65 | 1.30 |                         | .55 | .32 |
| st37  | Personable                                | 0                   | 5   | 2.99 | 1.01 | .69                     |     |     |
| st38  | Reliable                                  | 0                   | 5   | 3.25 | 1.23 | .85                     |     |     |
| st39  | Initiate actions                          | 0                   | 5   | 3.78 | .97  | .49                     |     | .33 |
| st40  | Have high moral standards                 | 0                   | 5   | 2.77 | 1.25 | .69                     |     |     |
| st41  | Dedicated                                 | 0                   | 5   | 3.71 | 1.03 | .62                     |     |     |

|                                      |                        |                                              |   |      |      |       |       |      |
|--------------------------------------|------------------------|----------------------------------------------|---|------|------|-------|-------|------|
| st42                                 | Courageous             | 0                                            | 5 | 3.61 | 1.12 | .55   |       | .32  |
| st43                                 | Have a sense of pride  | 0                                            | 5 | 4.14 | .93  |       |       | .56  |
| st44                                 | Devious                | 0                                            | 5 | 2.64 | 1.31 |       | .80   |      |
| st45                                 | Persistent             | 0                                            | 5 | 3.97 | .94  |       |       | .62  |
| st46                                 | Harsh                  | 0                                            | 5 | 2.85 | 1.24 |       | .91   |      |
| st47                                 | Cowardly               | 0                                            | 5 | 1.67 | 1.23 |       | .60   | -.31 |
| st48                                 | Selfish                | 0                                            | 5 | 2.60 | 1.45 |       | .64   |      |
| st49                                 | Progressive            | 0                                            | 5 | 3.54 | 1.02 | .54   |       | .34  |
| st50                                 | Unfair                 | 0                                            | 5 | 2.52 | 1.31 |       | .69   |      |
| st51                                 | Driven                 | 0                                            | 5 | 4.06 | .87  |       |       | .58  |
| st52                                 | Aggressive             | 0                                            | 5 | 2.73 | 1.32 |       | .71   |      |
| st53                                 | Reasonable             | 0                                            | 5 | 3.28 | 1.08 | .72   |       |      |
| st54                                 | Reckless               | 0                                            | 5 | 2.00 | 1.17 |       | .64   |      |
| st55*                                | Resourceful            | 0                                            | 5 | 4.26 | .85  |       |       | .63  |
| st56                                 | Self-important         | 0                                            | 5 | 3.04 | 1.36 |       | .74   |      |
| st57                                 | Practical              | 0                                            | 5 | 3.67 | 1.00 | .59   |       |      |
| st58                                 | Self-serving           | 0                                            | 5 | 3.24 | 1.45 |       | .58   |      |
| st59                                 | Envious of others      | 0                                            | 5 | 2.27 | 1.37 |       | .78   |      |
| st60                                 | Easy-going             | 0                                            | 5 | 2.83 | 1.17 | .33   |       |      |
| st61                                 | Take no heed of others | 0                                            | 5 | 2.87 | 1.42 |       | .65   |      |
| Variance distribution across factors |                        | Initial eigenvalue (prior to rotation) (MGK) |   |      |      | 18.88 | 8.39  | 2.76 |
|                                      |                        | Eigenvalue simulation (MGK)                  |   |      |      | 2.22  | 2.12  | 2.03 |
|                                      |                        | Post-rotation squared loadings sum (PAF)     |   |      |      | 17.06 | 12.48 | 9.43 |
|                                      |                        | Dominance over others (F2)                   |   |      |      | -.49  |       |      |
| Factor correlations                  | Competence (F3)        |                                              |   |      |      | .44   | .08   |      |

Notes: Items marked with \* have been excluded from further analysis; F1 = Trust; F2 = Dominance over others; F3 = Competence; factor structure matrix shows factor loadings above 0,30.

Results from Horn’s parallel analysis (Horn, 1965) indicate that the first three factors have eigenvalues greater than those of their counterparts generated from random data (Figure 1). For the fourth factor, however, the simulated eigenvalue exceeds the observed one ( $\Lambda R4 = 1.69$ ,  $\Lambda S4 = 1.95$ ). The results presented correspond to the principal components method.

*Trust* and *Dominance over others* are negatively correlated, sharing 24% of their variance. In contrast, *Trust* and *Competence* are positively correlated, with 19% shared variance. The correlation between *Dominance* and *Competence* is not statistically significant.



### Legend

Initial STERLID version  $\Lambda_{R4} = 1,69 < \Lambda_{S4} = 1,95$ ; final STERLID version  
 $\Lambda_{R4} = 0,87 < \Lambda_{S4} = 0,90$

**Figure 1** – Scree diagram showing results of Horn's parallel analysis for initial (left) and final (right) versions of the STERLID scale.

In order to optimize the psychometric properties of the subscales during this phase of scale construction, two items were excluded: *Make decisions independently* (due to the absence of significant parallel projections on the extracted factors) and *Dislike change* (due to multiple parallel projections shown in the structure matrix) (Table 1).

In the next phase, item analysis and exploratory factor analysis were repeated using the principal axis factoring method with oblique Promax rotation on the remaining 54 items. Parallel analysis and Cattell's scree test (Figure 1) were used as criteria for selecting the three-factor solution. Together, the factors accounted for 49% of the total variance. After rotation, the first factor explained 24% of the variance, the second 16%, and the third 9%. The rotated factors aligned with the initial solution in terms of item content and were therefore assigned the same names. *Trust* was significantly negatively correlated with *Dominance over others*, and positively correlated with *Competence*, sharing 22% of common variance with each. The correlation between *Dominance* and *Competence* was not significant.

On the first factor, the highest loadings were observed for the items *True to their word*, *Accurately perceive others' needs*, and *Reliable*, all of

which pertain to interpersonal orientation. Thus, this factor is defined by characteristics of constructive interaction, such as cooperation and concern for others. These are followed by items like *Have original approach to problem-solving* and *Innovative*, which indicate problem-solving ability (Table 2). Based on content analysis, this factor was labeled *Trust*. The selected items reflect leadership virtues related not only to task competence but also to guiding others. Broadly speaking, they may be treated as indicators of a positive image of leaders. Lower values of discrimination, representativeness, and factor loading coefficients were found for the item *Easy-going*, but it was not excluded, as the values remained within the acceptable range.

**Table 2** – Psychometric item features, excerpt from factor structure matrix of the first Promax factor and structure of the first principal component of the *Trust* subscale

| Items                                     | $r_{kor}(I-T)$ | $R^2$ | $\alpha_c$ w/o I | $\lambda_p$ | $\lambda_H$ |
|-------------------------------------------|----------------|-------|------------------|-------------|-------------|
| Are one step ahead in problem-solving     | .52            | .48   | .96              | .40         | .55         |
| Consider consequences of their actions    | .61            | .56   | .96              | .67         | .64         |
| Handle problem situations well            | .67            | .62   | .96              | .55         | .71         |
| Perform their duties responsibly          | .72            | .66   | .96              | .79         | .74         |
| Apt in problem-solving                    | .69            | .69   | .96              | .65         | .72         |
| True to their word                        | .75            | .67   | .96              | .95         | .78         |
| Adapt to new circumstances easily         | .64            | .57   | .96              | .55         | .67         |
| Have expertise                            | .70            | .57   | .96              | .64         | .73         |
| Innovative                                | .74            | .66   | .96              | .80         | .77         |
| Accurately perceive others' needs         | .76            | .71   | .96              | .85         | .79         |
| Have original approach to problem-solving | .74            | .68   | .96              | .81         | .76         |

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|                           |     |     |     |     |     |
|---------------------------|-----|-----|-----|-----|-----|
| Accurately assess others  | .69 | .64 | .96 | .52 | .73 |
| Keep up with the times    | .62 | .52 | .96 | .43 | .66 |
| Intelligent               | .65 | .58 | .96 | .42 | .69 |
| Cooperative               | .72 | .64 | .96 | .62 | .74 |
| Know their priorities     | .73 | .66 | .96 | .55 | .76 |
| Caring                    | .75 | .71 | .96 | .86 | .77 |
| Personable                | .65 | .59 | .96 | .68 | .67 |
| Reliable                  | .80 | .73 | .96 | .84 | .82 |
| Initiate actions          | .67 | .59 | .96 | .50 | .70 |
| Have high moral standards | .63 | .56 | .96 | .70 | .65 |
| Dedicated                 | .72 | .66 | .96 | .63 | .75 |
| Courageous                | .71 | .64 | .96 | .55 | .74 |
| Progressive               | .69 | .56 | .96 | .56 | .72 |
| Rational                  | .70 | .58 | .96 | .73 | .72 |
| Practical                 | .64 | .53 | .96 | .60 | .67 |
| Relaxed                   | .37 | .33 | .96 | .33 | .39 |

Note: Item discrimination –  $r_{kor}(I-T)$ , Item representativeness –  $R^2$ , Cronbach's alpha if item is deleted  $\alpha_c$  without item –  $\alpha_c$  w/o I, factor loading on the first Promax factor–  $\lambda_p$ , Loading on the first principal component–  $\lambda_H$

The highest loadings on the second factor were observed for the items *Harsh*, *Devious*, and *Envious of others* (Table 3), all of which pertain to dominance and social manipulation. This factor was labeled *Dominance over others*. Broadly speaking, the content of the items defining this factor also reflects a negative stereotype. Lower values of item discrimination, representativeness, and factor loadings were found for the item *Harsh*. However, this item was not excluded, as the values of the aforementioned coefficients remained within the acceptable range.

**Table 3** – Psychometric item features, excerpt from factor structure matrix of the second Promax factor and structure of the first principal component of the *Dominance over others* subscale

| Items                             | $r_{kor}(I-T)$ | $R^2$ | $\alpha_c$ bez I | $\lambda_p$ | $\lambda_H$ |
|-----------------------------------|----------------|-------|------------------|-------------|-------------|
| Tend to blame others for mistakes | .67            | .54   | .94              | .60         | .71         |
| Create interpersonal conflicts    | .66            | .53   | .94              | .71         | .70         |
| Corrupt                           | .65            | .53   | .94              | .54         | .69         |
| Cold                              | .53            | .46   | .94              | .71         | .58         |
| Act impulsive                     | .56            | .40   | .94              | .60         | .60         |
| Strict                            | .42            | .39   | .94              | .64         | .46         |
| Meddlesome                        | .64            | .55   | .94              | .50         | .68         |
| Think they are all-powerful       | .67            | .52   | .94              | .54         | .71         |
| Devious                           | .72            | .58   | .94              | .80         | .76         |
| Harsh                             | .76            | .67   | .94              | .89         | .79         |
| Cowardly                          | .61            | .51   | .94              | .59         | .65         |
| Selfish                           | .74            | .64   | .94              | .64         | .78         |
| Unfair                            | .74            | .63   | .94              | .69         | .78         |
| Agressive                         | .67            | .52   | .94              | .70         | .72         |
| Reckless                          | .57            | .47   | .94              | .61         | .62         |
| Self-important                    | .79            | .70   | .94              | .74         | .83         |
| Self-serving                      | .66            | .57   | .94              | .57         | .70         |
| Envious of others                 | .71            | .59   | .94              | .76         | .75         |
| Take no heed of others            | .67            | .52   | .94              | .64         | .72         |

Note: Item discrimination –  $r_{kor}(I-T)$ , Item representativeness –  $R^2$ , Cronbach's alpha if item is deleted  $\alpha_c$  without item –  $\alpha_c$  w/o I, factor loading on the second Promax factor–  $\lambda_p$ , Loading on the first principal component–  $\lambda_H$

The highest loadings on the third factor were observed for the items *Persistent*, *Driven*, and *Trust their skills* (Table 4). Content analysis suggests that these traits are associated with achieving success in material terms and exerting influence over others. In abbreviated form, this factor was labeled *Competence*. The item *Enjoy socializing* showed lower

values for discrimination, representativeness, and factor loading, indicating a relative divergence in the construct it measures compared to the other items. As such, the cluster of extracted characteristics also reflects a positive stereotype, albeit with a distinct thematic profile—an interpretation further supported by the factor correlation results (Table 1).

**Tabela 4** – Psychometric item features, excerpt from factor structure matrix of the third Promax factor and structure of the first principal component of the *Competence* subscale

| Items                        | $r_{kor}(I-T)$ | $R^2$ | $\alpha_c$ bez I | $\lambda_p$ | $\lambda_H$ |
|------------------------------|----------------|-------|------------------|-------------|-------------|
| Make an impression on others | .56            | .34   | .78              | .48         | .69         |
| Enjoy socializing            | .40            | .22   | .80              | .39         | .53         |
| Trust their skills           | .50            | .29   | .79              | .58         | .62         |
| Good speakers                | .51            | .34   | .78              | .51         | .65         |
| Know how to make money       | .43            | .22   | .80              | .53         | .56         |
| Have a sense of pride        | .50            | .30   | .79              | .56         | .63         |
| Persistent                   | .66            | .58   | .76              | .61         | .80         |
| Driven                       | .60            | .48   | .77              | .59         | .74         |

*Note:* Item discrimination –  $r_{kor}(I-T)$ , Item representativeness –  $R^2$ , Cronbach's alpha if item is deleted  $\alpha_c$  without item –  $\alpha_c$  w/o I, factor loading on the third Promax factor–  $\lambda_p$ , Loading on the first principal component–  $\lambda_H$

The identified factors formed the foundation for the development and psychometric validation of three subscales. Despite differences in item count, all three subscales demonstrated strong psychometric properties, including representativeness, internal consistency, and homogeneity (Table 5). However, the third subscale showed slightly lower psychometric robustness, indicating the need for additional items in future iterations to better capture the multifaceted nature of capability.

**Tabela 5** – Representativeness, internal consistency, and homogeneity of the STERLID scale

| Scale                 | MSA | $\alpha$ | $\beta$ | H1  | H2  | m  |
|-----------------------|-----|----------|---------|-----|-----|----|
| Trust                 | .99 | .96      | .96     | .48 | .78 | 27 |
| Dominance over others | .99 | .94      | .94     | .46 | .82 | 19 |
| Competence            | .92 | .81      | .81     | .34 | .85 | 8  |

*Napomena:* Normalized Kaiser–Meyer–Olkin measure of sampling adequacy– *MSA*; Guttman – Cronbach estimate (internal consistency reliability coefficient) –  $\alpha$ ; Lord – Kaiser – Caffrey reliability coefficient of the first principal component –  $\beta$ ; homogeneity as the average inter-item correlation within scales– *H1*; Momirović homogeneity coefficient – relative variance of the first principal image component – *H2*; number of items in scales – *m*.

**4. Discussion**

In this study, leadership was approached from the perspective of stereotypical perceptions of individuals occupying higher hierarchical positions. The development of the stereotypical image—and thus the content of the measurement instrument—was grounded in traits commonly attributed to leaders.

Young people tend to base their stereotypes on experiences drawn from family, educational (i.e., academic and peer) environments, socio-political organizations, and the broader process of socialization. The stereotypical image is highly significant, as it shapes young people’s attitudes toward leaders and influences their own inclination to assume leadership roles. Moreover, stereotypes about leaders can be viewed as indirect indicators of the value system held by youth.

Respondents’ answers to the presented items—specifically, the levels of arithmetic means—suggest that young people predominantly perceive leaders as ambitious, power-seeking, but also resourceful and competent. However, the stereotypical image held by youth encompasses a range of content dimensions, indicating a complex and differentiated attitude toward individuals in higher hierarchical positions.

The stereotype was found to be multidimensional, with items clustering into substantively distinct groups of attributes, supporting the assumption of a nuanced perception of leaders. The extracted factors were labeled *Trust*, *Dominance over Others*, and *Competence*.

- *Trust* includes items describing positive personal traits.
- *Dominance over Others* comprises items reflecting unsocialized striving for power.
- *Competence* encompasses items indicating specific skills relevant to the leadership role.

The results of the correlational analysis among the extracted factors further support the assumption that young people hold a complex view of leadership. A clear negative correlation emerged between *Trust* and the perception of leaders as *Dominant over Others*. While *Trust* and *Competence* represent distinct dimensions of the stereotype, they are moderately positively correlated. The justification for treating *Trust* and *Competence* as separate content domains is further reinforced by the absence of correlation between *Competence* and *Dominance over Others*.

These findings suggest that even within this pilot study, a relatively broad psychological space was captured for identifying the stereotypical image of leaders among youth.

## 5. Conclusion

Based on the presented findings, it can be concluded that the STERLID scale is applicable for examining stereotypes about leaders. The initial hypothetical framework of leader characteristics provided a foundation for extracting and interpreting conceptually meaningful factors in the analysis of respondents' stereotypical images of leadership. The identified stereotype factors allow for assessing the degree of positivity or negativity in attitudes toward leaders, while also enabling a deeper understanding of the traits that underpin positive versus negative stereotypes.

Accordingly, the scale facilitates insight into the presence and orientation toward evaluating *competence* in problem-solving, along with associated socio-cognitive patterns of motivational processes—such as elements of achievement motivation (initiative, persistence). A distinct cluster of negatively connoted traits emerges, particularly in relation to interpersonal dynamics and the tendency toward dominance and power. These evaluative and content-based elements may serve as criteria for identifying and interpreting the core of *autostereotypes* and *heterostereotypes*, in terms of assessing whether and to what extent there is “consensus” around a generalized image of leaders among respondents.

Correlations among the extracted factors can be treated as additional evidence supporting the validity of the three-factor structure, as well as their substantive interpretation. The constructed scale also demonstrates satisfactory psychometric properties.

Despite the positive characteristics indicated by the results, further development of the STERLID scale is necessary. This includes examining correlations with other socio-psychological variables to assess construct validity. Moreover, continued analysis requires applying the instrument to different respondent categories, which would help determine whether STERLID is a sufficiently robust tool for operationalizing both autostereotypes and heterostereotypes of leaders.

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