The Development of a Semantic Differential Scale for Assessing the Perceived Image of Citizens about Romanian Police Forces

Alina Ciabuca*¹

¹Ph.D. Student at Doctoral School of Psychology and Educational Science Faculty, Iasi, Romania

Abstract

The purpose of this paper is the development and validation of a Semantic Differential Scale in order to assess the public perception of Romanian police officers’ image. Following the two phases (construction and refinement of the instrument) resulted a 22 item scale, with a three-factorial structure, that accounts for 61.8% of the variance, with Cronbach’s alpha reliability coefficients greater than .87. With good indices on reliability and validity, the instrument is likely to be useful to both academic and practitioners interested in the assessing the image of a professional category, especially the police forces.

Keywords: semantic differential scale (SDS), evaluation, activity, potency, perceived image, police

1. Introduction

In a society which has become increasingly more complex, the role of Police forces tends to be versatile. Accordingly, lately, researchers gave a special attention to subjects regarding Police, and implicitly to the public image of the institution.

Generally, the police image is conceptualized based on three main categories: overall image, outcomes and process (Mastrofski, 1998). The overall image of police reflects perceptions, feelings and evaluations about the police in general. As Gallagher, Maguire, Mastrofski, & Reisig (2001) stated, this area includes various general descriptions and analysis of the confidence and trust in the police (e.g., Hough, Jackson & Bradford, 2013; Stanko, Jackson, Bradford & Kohl, 2012), satisfaction with the police (de ex. Ashcroft, Daniels & Hart, 2002; Skogan 2005), police performance in general (Cheurprakobkit, 2000; Cheurprakobkit & Bartsch, 2001), etc., all as indicators of citizens’ attitude toward police (Avjida, 2010).

* Corresponding author.
E-mail address: alinaciabuca@yahoo.com

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Despite the abundant approach of the subject in foreign cultures, especially Anglo-American, Romanian scholarly literature doesn’t seem to be focused on the image of Romanian police forces. There are only a few studies that addressed the problem of perception or attitude toward Police or police officers (e.g. Constantin & Stoica-Constantin, 1999), and from which, mostly used opinion barometers as measurement methods (e.g. GfK Trust Index, 2011; Global Corruption Barometer, 2013).

The image assessment can be performed by several methods, each with various levels of operationalization and discriminative capacity (Chiciudean & Țones, 2010). Although in this sector, most frequently were used the public opinion polls, there is a whole literature on the application of SDS in brand and company image studies (Meško, Umek & Musek, 1996; Rao, 2009), probably by virtue of its potential advantages: being a simple, economical, reliable and cross-concept comparison technique (Heise, 1970, 2010).

The Semantic Differential Scale (SDS), introduced in behavioral sciences by Osgood and his associates (Osgood, Suci & Tannenbaum, 1957), is a very general technique of measurement, that has to be adapted to each research context, depending on the goals and aims of the study (Verhagen & Meents, 2007). The original form proposed by Osgood et. al (1957) was structured on three dimensions: Evaluation, Potency and Activity, and has been confirmed by previous pan-cultural studies (e.g. Heise, 1970; Osgood, May & Miron, 1975, etc.). Evaluation relates to goodness or badness, morality, utility, etc., Potency to magnitude, social power, strength, expansiveness, etc., whereas Activity relates to speed, animation, spontaneity, etc. (Heise, 2010).

Although it was frequently used to measure attitudes (Osgood et al., 1957) or the meaning of concepts (Doyle & Bottomley, 2010; Mindak, 1961), SDS has proven useful in many areas, including in the assessment of organizational image (de ex. Bonner & George, 1988; Van Heerden & Puth, 1995), corporate image, advertising image, brand or service image, also (Smith & Albaum, 2005).

In order to measure the meaning of the concept, the semantic differentiator usually uses a five or seven point scale, based on a list of bipolar paired terms, with opposite meaning. According to their disposition, attitude or image of the assessed construct, respondents select a point on the interval for each contrasting pair. Each interval is expressed by quantifiers with certain magnitudes, with a neutral point as central quantifier (Lopes, Nogueira-Martins, Andrade & Barros, 2011).

As the image concept is a complex and multifaceted one (Halic & Chiciudean, 2004), in practice is very difficult to study all the indicators of an organization's image. Therefore, we focused on the employees’ image as a highly relevant imagological component of Police organization, based on the fact that the image of an institution is largely influenced by the interaction of its members with the outside world (Hatch & Schultz, 1997).

2. Objectives and Hypotheses

2.1. Objectives

The aim of the study is represented by the development and validation of a semantic differential scale for the assessment of the public image of Romanian police officers, following a two-phase process: the exploratory research to elaborate the scale, namely the evaluation of the psychometric properties of the scale.

3. Results

3.1. The construction of the SDS

The first stage of phase one, the collection of the qualitative descriptors, involved the free association of words technique. A total of 355 voluntary participants (M=31.3; SD=15.9) was asked to freely associate a maximum of 5 terms to the stimulus word “policeman”. Based on the evocation frequency (f≥5), from a total of 1254 associated terms we initially selected 56 descriptors. The selected items must not be repeated in the list of their opposites. The second stage included the analysis and the elimination of adjectives appreciated not to be suitable descriptors for the police officers’ image. Five voluntary police officers, with at least 10 years professional experience and different specializations performed this evaluation. The 56 items initial list was analyzed and then selected the terms with at least a 75% rate of agreement. This assessment performed by the experts - related to the face validation procedure -
resulted in the exclusion of eight out of the 56 descriptors (active, capable, respectful, understanding, cocky, fearful, compassionate, insecure). The third stage consisted of obtaining antonyms for the 48 selected terms. Fifty voluntary males and females (from which only 45 questionnaires were valid) had to establish the opposite adjective for each term. Based on the respondents’ consensus we decided to remove four items, either because the lack of agreement (only those that obtained 75% agreement among respondents were included) or because the items rarely received an antonym, remaining mostly blank (e.g., empathetic). In order for positive adjectives and negative ones not to align on opposite sides of the scale, the adjective pairs were alternated.

3.2. The refinement phase

After the scale’s development with proper adjustments regarding its face and content validity, in the second stage we focused on the examination of the psychometric parameters of the instrument and its factorial and construct validity. We conducted a pilot study to pretest the draft questionnaire. Respondents (N=260; M=36.4; SD=17.8), who voluntarily participated, had to evaluate the Romanian police officer on the basis of the contrasting terms included in the list. As is common in semantic differential measurement, it was used a seven point interval scale, ranging from -3 (extremely negative) to +3 (extremely positive), with a midpoint labelled neutral (0) (cf. Dalton, Maute, Oshida, Hikichi & Izumi, 2008; Heise, 1970). Positive and high scores indicate a favourable image, while the lower ones suggest a negative evaluation.

First of all, the initial set of 44 adjective pairs was analyzed for accuracy by the Churchill’s item purification method (Field, 2005), according to which a ‘corrected-item-total’ correlation of less than or equal to 0.3 is insignificant and the item removed from the set. The results suggested the fitting of all items with no need of item deletion.

Consequently, all 44 pairs were included in an exploratory analysis in order to understand the composition of the police public image, and also as a method to evaluate the construct validity of the scale (Parsian & Dunning, 2009). For the assessment of the factorial structure of the semantic differential scale principal axis factoring method (PAF) with Varimax rotation was executed. We opted for this method because PAF makes no distributional assumptions and uses only common, or shared, variance of the items.

The scale dimensionality analysis was initiated by verifying the sample adequacy to the factorial analysis according to Kaiser-Meyer-Olkin (KMO) test and Bartlett’s sphericity test. The Kaiser-Meyer-Olkin Measure of Sampling adequacy, which tests the variables correlations matrix and should have at least a 0.6 value (Tabachnik & Fidell, 2001), obtained a value of 0.95. The Bartlett’s chi-squared sphericity test, which assesses the validity of the null hypothesis was significant at p<.01. In other words, the data met the thresholds for sampling adequacy.

Next, the adjectives with extracted communalities less than 0.5 were successively eliminated from the analysis, ensuring the maintenance only of the terms adequately explained by the model (slim/fat; strict/indulgent; one-sided/impartial; tolerant/intolerant; corruptible/incorruptible).

In addition, in order to make the best decision regarding the structure of each factor we used the criterion proposed by Hair, Anderson, Tatham & Black (1998 cf. Parsian & Dunning, 2009) on practical significance. According to this, loadings of .30 indicate minimal importance, .40 reflects a good contribution, while a value of .50 suggests the factor is important. As a result, a minimum factorial saturation of 0.5 to accept the adjective pair was established to ensure that each item has an important contribution to the construct underlying the factor. Simultaneously, we assured to retain solely the items which strongly loaded solely on their underlying factor.

Consequently, we successively excluded all the items that didn’t meet these criteria (eg. sincere/phony; competent/incompetent; moral/immoral; worthy of respect/unworthy of respect; coward/brave; altruist/selfish; respects the law/trespass; diligent/lazy; modest/presumptuous; conscientious/careless; honest/dishonest; prompt/delaying; focused/unfocused; pleasant/unpleasant; objective/subjective; polite/arrogant; punctual/unpunctual) and finally, retained a tri-factorial structure with Eigenvalues greater than 1.0. This explains 61.8% of the total variance (value accepted by the scientific community as reasonable - Field, 2005), on the strength of 22 adjectives pairs. These results compare favorably with other studies, which showed a 30 per cent amount of total variance explained (Osgood, 1971), or approximately 45 per cent of variance accounted by the three factors (eg. Haried, 1973; Houghton, 1988).
After that, to obtain first indications of construct reliability, the Cronbach’s alphas were computed. Since the image of the Romanian police officer appears to possess three levels of dimensionality, coefficient alpha values for each level were calculated. As indicated in table 1 (presenting the factorial structure of the 22 final adjective pairs, the variance explained by each factor, Cronbach’s alpha coefficient of reliability, communality, corrected item-total correlation and number of items per factor) all alphas exceeded the standards for established research (a minimum value of 0.8 is required for a scale to be widely used, cf. Carmines & Zeller, 1979). There were obtained good corrected item-total correlation means also, altogether, suggesting homogeneity, stability and good internal consistency of the scale (Constantin, Holman & Hojbota, 2011).

In conclusion, the final 22 items loaded on three well-defined factors, confirming the EPA structure proposed by Osgood et.al (1957). Although the resulted dimensions may be named accordingly (Evaluation, Activity and namely, Potency), as the factors naming is always a personal decision we chose to use more suggestive etiquettes. Therefore, the first factor, Evaluation, received the name “Professional competency”, as it covers professional efficiency indicators and integrity aspects. The second dimension, Activity, was called “attitude towards work”, comprising elements like involvement, availableness, interest, etc. The third factor, Potency, was called “Social competency”, being described by terms like sociable, communicative, calm.

Table 1. Factorial matrix - Varimax rotation of the opposite adjectives pairs

|                        | F1   | F2   | F3   | Communality |
|------------------------|------|------|------|-------------|
| Correct/Incorrect      | .677 |      |      | .630        |
| Serious/ Unserious     | .690 |      |      | .622        |
| Professional /unprofessional | .698 |      |      | .671        |
| Efficient/ Inefficient | .566 |      |      | .619        |
| Smart / Stupid         | .622 |      |      | .547        |
| Well-informed/ poorly informed | .645 |      |      | .627        |
| Profound / superficial | .510 |      |      | .550        |
| Responsible / Irresponsible | .570 |      |      | .574        |
| Instils safety /doesn’t instil safety | .609 |      |      | .635        |
| Available /Unavailable | .607 |      |      | .654        |
| Fast / Slow            | .681 |      |      | .678        |
| Involved / Indifferent | .589 |      |      | .641        |
| Professionally trained / Professionally untrained | .568 |      |      | .647        |
| Reliable / Unreliable  | .607 |      |      | .659        |
| Fair / Unfair          | .690 |      |      | .704        |
| Interested /Uninterested | .552 |      |      | .656        |
| Presentable / Unpresentable | .673 |      |      | .557        |
| Persevering /Postponing | .623 |      |      | .638        |
| Communicative / Uncommunicative | .714 |      |      | .670        |
| Sociable / Unsocial    | .517 |      |      | .504        |
| Disciplined / Undisciplined | .616 |      |      | .594        |
| Calm / Nervous         | .556 |      |      | .522        |

| Number of items | 8 | 8 | 6 | 22 |
| Reliability coefficient Cronbach’s alpha | .91 | .93 | .87 | .96 |
| Mean of corrected item-total correlation | .72 | .76 | .68 | .72 |
| Variance explained by factor | 54.8% | 3.9% | 3% | 61.8% |

Synthesizing, the statistical parametric testing emphasizes the viability of using this instrument in future studies on aspects regarding the perceived image of police officers. The empirical support comes from the factorial analysis, on one side, and from the internal consistency measurement, on the other.

3. Conclusions

This study aimed to develop a semantic differential scale for the assessment of the perceived image of Romanian police officers as indicator of the public image of the institution. An initial set of 56 descriptors was elicited from 350 citizens, on the basis of free evocation method, from which only 44 contrasting pairs constituted the draft form of the scale. Following a two-phase process, namely the development and pretesting of the scale, resulted a 22 items
semantic differentiator, with a tri-factorial structure. The three dimensions, organized according to Osgood et al. (1957) EPA structure, explain approximately 62% of the total variance of the construct and were named “professional competency”, “attitude towards work” and “social competency”. Apart from the face and content validation, having the empirical support of the factorial analysis, on one side, and the internal consistency indices, on the other, the scale can be considered reliable and validated. In conclusion, this study complies with the call of Straub, Loch, Evaristo, Darahanna & Strite (2002) for the extension of measurement methods in the research field, trying to fill an existing empirical gap in the study of the image of Romanian police forces.

Alongside to the academic contribution, this study provides police managers with an instrument that measures the public image of police forces, based on which there can be developed strategies for improvement and reinforcement of its place in community. The SDS can also be used for assessing the projected / desired organizational image, in order to establish the social distance in respect to the one actually perceived. Simultaneously, it can serve as a tool for the analysis in terms of the workers’ perceived and/or desired image of their organization.

A limitation of the study refers to the population sample. The participation was voluntary, based on the convenience of the respondents accessibility, without any sampling selection. For this reason we cannot generalize the results to the general population. Although the author considers his findings mitigate to some extent these shortcomings and the instrument being capable of providing an institutional image assessment tool, additional research is appreciated necessary.

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