Supporting the Personnel Selection of Salespeople

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Abstract
The personnel selection of salespeople can rely on the measurement of basic abilities and personality features such as for example intelligence, communication skills, social skills and extroversion. However, a more specific measure, focusing on knowledge about persuasion would be beneficial in the decision process.

In a series of studies, a situation based, achievement measure of persuasion knowledge was developed. The test measures persuasion knowledge (e.g., Campbell & Kirmani, 2008; Friestad & Wright, 1994) in general, not focusing on commercial persuasion exclusively. The questionnaire requires recognition of others’ intentions, persuasion strategies and predictions about the effectiveness of those strategies. The measure was developed based on data of university samples, but was also tried on salespersons, and its differentiation ability between the two groups was challenged.

Based on our results, the specific test is reliable; and shows validity. Two main underlying factors of the measure can be differentiated: agreeableness or critical thinking, and persuasion knowledge. Based on the collected empirical data, salespeople seem to show less agreeableness and more persuasion knowledge than university students. Based on a linear discriminant analysis, the measure can support the differentiation of salespeople, hence it has a potential in their selection process.

Keywords: persuasion knowledge, salespeople, salesmen, personnel selection
Introduction

In the present paper, we study the potential of applying a recent construct, persuasion knowledge as a criterion in personnel selection of salespeople. Persuasion knowledge gathers all information learned in persuasive situations. This is a knowledge salespersons must have developed in a larger extent than laypeople did, given their everyday work requirements and could support the personnel selection process.

Obviously, personnel selection of the best potential employees for sales positions is crucial for most businesses. However, from the point of view of psychology, the process is rather challenging as applicants are skilled in impression making. In most cases, general abilities and personality features, such as intelligence, extroversion, sociability, uncertainty tolerance etc. is measured in the selection process. A more specific candidate for differentiation among applicants would be persuasion knowledge. Persuasion knowledge is measured in various ways in research context, but has not came into general use in practice, yet.

A new, achievement based measure is introduced in the paper, which was developed for the student population. Beyond describing the development process, an empirical study is presented, where the salespersons’ data is compared to university students’ data. The proposed measure is expected to differentiate between the two groups well. The latent structure of the proposed Persuasion Knowledge Achievement Measure is also investigated in the study. We believe, both the new measure and the considered practical application have a high potential, and even if this study is a small, cautious step to that direction, the outlined way is worth considering.

Personnel selection of salespeople

Salespeople are a special group of employees. Many of them work under a great pressure to achieve. Their salary depends on their regularly assessed performance given objective numbers (Armstrong & Murlis, 2007; Winer & Schiff, 1980). Their financial status depends not only on their work performance, but also on the specific field where they are applied. Salespeople’s timetables tend to be very flexible and work environments vary a lot, where they have to accept several influencing factors to their work effectiveness. Probably, this is the reason why salesman are typically risk taking, as risk taking individuals are opt for such a job. Furthermore, salespeople are often achievement oriented, and eager to get feedback (Winer & Schiff, 1980).

Salespeople are good at communication, and have an advanced theory of mind ability (H. Pink, 2012), as it is needed for persuasion. The stereotypic salesman is extrovert, assertive, have good social skills. Correspondingly, their employers seek for employees possessing characteristics (Costa & McCrae, 1992; Kahneman, Diener, Schwartz, 1999). However, Grant (2012) provided empirical evidence, as the result of the investigation of 340 call-center representatives, that the relation between extroversion and sales is a reversed U-shape. This finding suggest that ambiverts have an advantage in sales. Grant’s explanation is that ambiverts can both talk and listen, which supports largely the sale efforts in communication. Based on further relevant literature, salespeople are often talkative, enthusiastic, open and
optimistic (Cain, 2012; DeYoung, Quilty, & Peterson, 2007), and cannot take no as an answer (Vinchur, Schippmann, Switzer, & Roth, 1998).

Cron, Marshal, Singh, Spiro and Sujan (2005) provided a summary on the personnel selection trends of salespeople. In this paragraph, parts of the provided information are highlighted. Traditionally, salespeople’s performance is linked to so-called role variables, such accuracy, expectations; and in the personnel selection process applicants’ cognitive abilities, personality and demographic features were examined mostly (Churchill, Ford, Hartley, & Walker). However, only a small variance of sales performance is explained by the dominantly assessed variables. In line with the development of measurement methods and emergence of meta-analyses, intelligence, emotional intelligence became important selection criteria. Salespeople are known to use typologies of products and consumers, and have more enriched information of certain categories than laymen have. From the investigated personality factors, integrity, consciousness, optimism and social competence seem valid predictors of direct sales performance.

In sum, an ideal salespeople shows risk taking behavior, achievement oriented, optimistic, not too extrovert, neither introvert, social, intelligent, precise, and conscientious etc. However, most of these variables have an indirect effect on sales performance, because for example risk taking behavior and optimism are needed to bear the uncertainties of their work. We believe that an achievement measure of orientation in persuasion attempts could be a more direct predictor of salespeople’s work performance than some of these personality features and abilities.

Persuasion knowledge

The term persuasion knowledge refers to all aspects of personal experience, knowledge, attitudes, and beliefs which influence personal actions and reactions in situations involving persuasion (Campbell & Kirmani, 2008; Friestad & Wright, 1994). Furthermore, it contains information learned during the socialization process, and cultural schemas, which can guide one’s behavior in persuasion attempts (Friestad & Wright, 1994).

Friestad and Wright published a complex persuasion knowledge model in 1994. The model differentiates the “agent” and the “target” of persuasive communication. According to this influential model, participants’ thoughts, feelings, actions and reactions are affected by three types of knowledge: their topic knowledge; their knowledge about the partners; and their persuasion knowledge.

Clearly, persuasion knowledge is related to attribution, intent comprehension, mentalisation, and it contains believes and schemas about typical persuasion techniques and potential reactions to them. Moreover it includes believes also about the effectiveness of these techniques. The attribution of mental states, termed as mentalisation or theory of mind (Premack & Woodruff, 1978; Samson & Apperly, 2010), seems to provide a basis for persuasion knowledge (see e.g., McAllister & Cornwell, 2009. Theory of mind refers to the ability which supports the comprehension of other’s mental states, feelings, and intensions during communication. This general skill can establish the development of the more specific persuasion knowledge. Persuasion knowledge is known to develop throughout the life span,
and with increasing age, a decline can be detected (Campbell & Kirmani, 2008). The early development starts around the age of seven and is studied more frequently (Wright, Friestad & Boush, 2005) than the decline of the skill (Campbell & Kirmani, 2008). In adulthood, a continuous growth can be assumed in line with the development of theory of mind (Samson & Apperly, 2010), and gaining experience. The more experience the individual has, the more developed persuasion knowledge can be assumed.

Although, most of the corresponding research focused on marketing related persuasion exclusively (e.g., Bearden, Hardesty & Carlson, 2007; Bearden, Hardesty & Rose, 2001; Boush, Friestad, & Rose, 1994), this topic has relevance in pedagogy, psychology, communication, and in the behavioral sciences in general. The same persuasion knowledge is used to maintain communication in formal and informal situations in everyday life, whenever persuasion is applied. However, for this study, the persuasion knowledge construct is considered as a potential criterion for personnel selection of salespeople. That is, the aim is to measure persuasion knowledge on a population who often act on the agent side of persuasive communication.

**The measurement of persuasion knowledge**

A wide collection of methods are used to measure persuasion knowledge. Recently, Ham, Nelson and Das (2015) summarized the existing approaches. Some of the often followed approaches are qualitative (Ham, Nelson & Das, 2015), possessing the typical disadvantages of qualitative studies, as for example the assessment requires lots of time; the process is not fully objective etc. For example, the researchers apply a content analysis (e.g., Lorenzon & Russell, 2012; Nelson, Keum, Yaros, 2004), or depth interview (e.g., Kirmani & Campbell, 2004). Content analysis was used to assess situational, while depth interview was used to assess dispositional persuasion knowledge in the referred studies.

Other measures are quantitative, mostly self-report questionnaires that can be affected by perceptual biases, social desirability. In personnel selection context, it is a well-known phenomenon that applicants distort their measurement of personality features (Hough, 1998). Part of the available quantitative measures, again, focus on situational persuasion knowledge, as for example Inference of Manipulative Intent (Campbell, 1995) or Understanding of Persuasion Intent (Campbell and Kirmani, 2000). Others focus on dispositional persuasion knowledge, such as the Knowledge about Persuasion Tactics (Boush, Friestad, & Rose, 1994), Lay People’s Persuasion Knowledge (Friestad & Wright, 1995), or Self-Confidence Persuasion Knowledge (Bearden, Hardesty & Rose, 2001).

An unusual exception of self-report measures is an achievement based measure, which focuses on Pricing Tactics (Bearden, Hardesty & Carlson, 2007). However, the scope of this questionnaire is rather narrow, but, of course, it can serve specific needs very well. The necessity for further measurement tools is expressed by Ham and his colleagues (2015). From the perspective of psychological assessment, an achievement based measure with a more general scope on persuasion would be beneficial. In the following, we propose a new, achievement based measure that could be applied in theoretical investigations, could serve diagnostic and preventive purposes in the general population, as well as can support the personnel selection of salespeople.
Development of a new measure of persuasion knowledge

As it has been stated earlier, theory of mind (ToM) is clearly related to persuasion knowledge (McAllister & Cornwell, 2009). A widely accepted measure of ToM (the Imposing Memory Task, Kinderman, Dunbar, & Bental, 1998) inspires our new persuasion knowledge measure. ToM denotes the competence which enables people to understand other’s mental states based on their behaviour (Premack & Woodruff, 1978). It establishes also the ability to understand others’ latent motives and unexpressed goals. ToM is often assessed by the Imposing Memory Task (IMT, Kinderman, Dunbar, & Bental, 1998). In the IMT, short social situations followed by true or false items aiming to test the memory and mentalisation ability of the examinees.

Following this methodology, seven situations describing various contexts and context relevant, persuasion related items were constructed to measure persuasion knowledge. The situations were the following: a mother trying to convince a child about finishing homework (1); teacher encouraging a class participating in a contest (2); a couple discussing their holiday plans (3); agent of a nonprofit organization asking for support (4); a product description (5); a consumer shopping for clothes served by a shop assistant (6); a consumer looking for a present in a store for electric devices (7).

The situations incorporate items from earlier proposed questionnaires, but embedded in a specific context, which makes them less general. The situations also contain persuasion techniques and compliance gaining strategies defined in the literature (e.g., Kellerman & Cole, 1994; Perloff, 2010). Items include classical persuasion techniques, such as foot in the door, door in the face (e.g., Perloff, 2010); typical heuristics, as for example elegant person, high price (e.g., Perloff, 2010); compliance gaining communication tactics, such as negation (Wilson, 2002); pricing tactics, as package price and introductory price (Bearden, Hardesty, & Carlson, 2007); and items which require decision on the participants’ attribute.

Each situation followed by corresponding statements. Examinees should decide on each statement whether it is true or false, and how sure they are in their decision. Stating this in another way, a Likert scale is provided with endpoints of surely false and surely true.

Here, we provide a typical example of the applied situations. Please note, that the questionnaire was administered in Hungarian, a translation of the original version is given in the following.

“An elegant young man knocks on a house door:
- Good morning, I am John Smith. I have a fridge magnet for you.
- Thank you, but we do not have a fridge, and do not want to buy anything.
- You don’t need to buy it, it’s a present. It reminds the family that overweight leads to illnesses. – And he talks lengthy about frequency and risks of overweight.
- I don’t want to be unfriendly, but there are people waiting for me inside.
- Could you, please, give me a favor before going inside? Would you mind signing this petition? We ask the government to spend more money on preventing overweight. There isn’t any real responsibility in signing.
- All right, I’ll sign this, but could I go to have dinner right after this?
Sorry for taking your time. Before I leave, I would like to give you this document on Harmbalm. This medicative product is developed for preventing heart disease by well-known scientists. It has utility not only for you, but you can cure your loved ones with it. One must spend money on such.

- And what is the price?
- This is high time to buy it for a reduced price. You need to decide, no one else can make a decision instead of you.
- Thank you for the information. I’ll think it over. Good bye.”

Corresponding items are for example:
„Based on John Smith’s clothes and the graphs he presented, he seems a trustable expert to many people.”
Surely false 1 2 3 4 5 6 Surely true
„There is no fridge in the house.”
Surely false 1 2 3 4 5 6 Surely true
„The man gave a fridge magnet, it was a nice gesture, many people would feel afterwards, that they owe something to him in return.”
Surely false 1 2 3 4 5 6 Surely true

We believe that the questionnaire captures relevant aspects of the examinees’ behavior in persuasion contexts, and gives information about their persuasive knowledge. The preliminary version of the measure was tested in a series of studies, as it is going to be described in the following in details.

**Pilot studies of a new persuasion knowledge measure**

In the last year, four different versions of the measurement instrument were tested on heterogeneous groups of university students (N=540). Most of the data (80%) were collected in a personal assisted way, but in a small proportion of the sample, online data collection was also applied.

In the four data collection rounds, different features of the measurement instruments were modified and tried out. First, two versions were compared: a longer version contained situations followed by statements; and a shorter version, where the same statements had to be assessed, but the situations were incorporated in the statements only. Based on the results of traditional measures of reliability, and the feedback from the examinees, the version containing the introductory situations worked better. Probably, the situations help to identify the context and make the items more unambiguous, as decrease the occurrence of irrelevant associations.

In the third and fourth data collection rounds, university samples faced with two modified version of the original, longer questionnaire. Based on the results, some of the items did not fit to the dimension defined by the majority of the items. The well-fitting items belonged to four situations, which were finally kept. From the rest, the well-fitting items were integrated in those four situations, and different formulation of some of the items were also tried out.
Furthermore, a four-point scale and six-point scale of the answer categories were also applied. The higher scale points led to better indices, but made the data collection more difficult, as some of the examinees found it difficult to answer on a six-point scale.

In the third and fourth versions of the test, supplementary questionnaires were also filled out to study the validity of the measure. Such measures were the Persuasion Knowledge Subscale from the Consumer Self-Confidence Scale (Bearden, Hardesty, & Rose, 2001); Public Opinion Toward Advertising (Pollary & Mittal, 1993); a subscale of conversational indirectness measure focusing on the motivation to understand indirect messages (Holtgraves, 1997). The results were promising: the Cronbach-alpha values were above .6 and the correlation values mostly indicated weak, but significant relationship.

**Main study on the Persuasion Knowledge Achievement Measure**

The *aim of the main study* was to reveal the psychometric properties of a new persuasion knowledge measure, the Persuasion Knowledge Achievement Measure. Beyond studying its reliability, the validity of the measure is investigated in two ways. First, the measure was administered on a university and a salespeople sample, and a better achievement is expected from the older sample, who deals with persuasion in their everyday professional life. This way, we investigate the predictive validity of the test. Second, another measure of persuasion knowledge, and a related construct: intent comprehension in conversations were also administered on the samples.

The *method* was designed based on the pilot studies, a four situation based version of the measure with 27 items was administered. At the beginning of the questionnaire, information were given about the aim of the study, and anonym handling of the data and voluntary participation was declared. The first set of items were asking for demographic data of the examinees. The demographic questions included gender, age, and the occupation of the examinees. Afterwards, the Persuasion Knowledge Achievement Test was administered. Following the PKAM, the six items of the Self-Confidence Persuasion Knowledge (Bearden, Hardesty & Rose, 2001), and items from the intent comprehension subscale of conversational indirectness measure (Holtgraves, 1997) was filled out by the examinees.

University students either filled out the questionnaire in a paper and pencil form (N=97) in a supervised setting, or reached online (N=122). A group of students were paid to recruit salespeople (N=88) to participate in the study. Students found this task very difficult, as most salespeople refused to take part in the study referring their limited free time. Some of them participated only because the online version of the questionnaire gave feedback on their achievement. The recruited salespeople mostly worked in real estate, insurance, and vehicle market.

At the end of the data administration in the supervised setting, the university students got a small present, mostly chocolate, for their cooperation in the study. While in case of the online version, the feedback on the achievement of the participants functioned as a reward. It was emphasized that the feedback is a rough measure of their achievement, as the measure is being development. The score was calculated in a way that is described in the following. The reversed items were recalculated in the usual way (5 minus the score here), then the four-
point scale items were dichotomized and the sumscore was provided at the end of the questionnaire. The maximum score was 27 and this was also told.

One of the items was very easy intentionally, because we wanted to test for automatic and reckless filling. All items were administered in Hungarian. The English translation of the verificatory item is “If someone says ‘Do it for me.’, this means the person wants us to do accordingly”.

The university sample consisted of 66 male and 153 female participants, their mean age was 25.99 (SD=8.18). The salespeople sample included 25 males and 63 females, their average age was 37.26 (SD=11.33). The gender rate is very comparable, but university sample is younger than the salespeople sample, which is not surprising.

Before analyzing the data, examinees with missing data and examinees who could not answer well on the verificatory item were left out of the analyses. This is an additional procedure, which was applied to eliminate the effect of inattentive participation in the study. Seven students who filled out the questionnaire in person and fourteen who filled it out online were failed to answer the filter item correctly. Nine of the salespeople were left out for the same reasons. The data of the filter item was not used in the following. Furthermore, ten students in supervised setting missed to answer all items, and left out from the analyses. The remaining sample (N=267) consisted of 188 students and 79 salespeople.

First, the optimal number of components underlying the PKAM data was estimated by the nFactors package of the R program (Raiche Riopel, & Blais, 2006), see Figure 1. Based on the graph, depending on the applied criteria two or three components should be considered.

![Non Graphical Solutions to Scree Test](image)

Figure 1: Optimal number of considered principal components.

Exploratory factor analysis was also applied on the PKAM data with varimax rotation. The three factor solution fitted well on the data ($\chi^2=270.94$, df=250, p>.05). The third factor seemed less important compared to the first two.

The first factor seem to capture “agreeableness” or “critical thinking” approaching the concept from the other side of the scale, as reversed items have positive and other items have
negative loadings on this factor. On one extreme, there are items for example: “The expensive product is always better than the cheaper ones.” or “All participants of the competition are going to receive a present.” (both are reversed items); while on the other side, there are items such as “The initiative price is used to make people try the product.” or “John Smith’s case is an example. It shows that those who participate in the competition must gain a good grade afterwards”.

The second factor seem to account for “persuasion knowledge” with all but one item having a positive loading. Typical items with high loadings are for example: „Based on John Smith’s clothes and the graphs he presented, he seems a trustable expert to many people.” or „If a shop assistant presents a very expensive carpet hoover once, then a cheaper one, he or she wastes the customer’s time.” (reversed item).

<table>
<thead>
<tr>
<th>Item</th>
<th>Comp. 1</th>
<th>Comp. 2</th>
<th>Comp. 3</th>
<th>Comp.4</th>
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<td>I.2</td>
<td>-0.206</td>
<td>0.495</td>
<td>0.281</td>
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<td>-0.399</td>
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<tr>
<td>I.4</td>
<td>-0.136</td>
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<td>I.5</td>
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<td>I.6</td>
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<tr>
<td>I.7</td>
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<td></td>
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</table>

The third factor seem to capture “experience based knowledge”. Items which evocate associations, often repeated sentences which interfere the understanding the item in the specific context load on this factor. For example, “He refers to the interested youth, as he believes this class is not such.”, or “The teacher wants to choose participants, in order to send the best ones”. In this last example, past experience object the good answer. Therefore, this factor is better to be eliminated. If three additional items are left out, a two factor model fits well on the data ($\chi^2=232.06$, df=208, p>.05).

Principal component analysis was used to obtain two components, and the individual total scores on those components were automatically calculated. In our case, this was reasonable,
as the loadings are not close to be equal (see Table 1). The theta values of the first two components were .626 and .629, given the four point scale it is acceptable.

Both for the university student and the salespeople sample, the total scores of the “persuasion knowledge” component are normally distributed based on Kolmogorov-Smirnov analyses (Ds<0.07, ps>.05). The variances must be different based on the data (F(187,78)=0.64, p<.05), hence the two sample was compared with a Welch t-test. The test showed significant difference between the average achievements (t=3.24, df=121.94, p<.01) of students (M=0.18) and salespeople (M=-0.42). As expected, salespeople showed higher achievement.

In a similar way, the total scores of the first principal component were investigated. The student’s data were not normally distributed (Kolmogorov-Smirnov test, D=0.11, p<0.05), hence a Wilcoxon test was applied which showed a significant difference between the investigated populations (V=9502, p<.001). Students had higher average score on the agreeableness scale (Med=0.11) compared to the salespeople’s average score (Med=-0.46).

| Table 2. | Classification based on the discriminant analysis versus group membership. |
|---------|-------------------------|------------------|
|         | Student | Salespeople |
| LDA student | 177     | 47      |
| LDA salespeople | 11     | 32      |

Using these two principal components in a discriminant analyses, the provided model results in a proper classification for 78.28% of the examinees. See Table 2 for the details. The corresponding Kohen Kappa is 0.40.

Conclusions

The aim of the present research paper is to introduce a new persuasion knowledge measure, called Persuasion Knowledge Achievement Measure. Furthermore, a potential practical application of this measure is provided and tested empirically. The application of an achievement based persuasion knowledge measure in the personnel selection process of salesmen seems straightforward and beneficial.

A situation based indirect, but achievement based measure is established in a four stage pilot study. University students filled out different forms of the questionnaire in different settings. The personal feedbacks are positive, although the questionnaire seems long, but interesting. Situations, items were chosen during the process and formulation of the items were modified throughout the versions.

In the main study, data was gathered from both students and salespeople. Based on an exploratory factor analysis and a principal component analysis, two meaningful factors/components can be differentiated. One of them is critical thinking/agreeableness, and the other one is persuasion knowledge. Given the four point scale, on which the answers were administered, the reliability indices of the components are good. However, this could be improved by applying a six-point scale, more scalepoints would not be beneficial, as the examinees considered six as difficult, already.
Based on a simple comparison of the obtained empirical data, salespeople showed more persuasion knowledge and more critical thinking as university students. Even more, a discriminant analyses was successful in predicted group membership in most cases. Clearly, age is a confounding variable here. From the perspective of predictive validity of the measure, this is not a problem. But for providing stronger evidence of the utility of the measure in personnel selection an age fitted sample is going to be needed.

In the near future, we follow this research line in two ways. First, the main study is repeated on a modified Persuasion Knowledge Achievement Measure with additional items administered on a six-point scale on demographically more similar groups. Second, several potential personality and ability correlates of the measure are investigated in a complex study on university students, such as self-efficacy, theory of mind ability, need for cognition etc. The new measure, and persuasion knowledge in general, has several field of applications, as for example prevention, personality development, communication training. The measure was successfully used as a tune up task in a consumer protection program for elderly. We believe that other practical applications of the persuasion knowledge construct are likely to appear more frequently in psychology in the near future.
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