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**Research participation rates: the role of the social perception of
psychological researchers and framing of expected research
findings on people's willingness to participate**



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This study can be made publicly accessible

Abstract

High participation rates to surveys are important to psychological research as they largely determine the power and objectivity of research findings. In the current study, we explored how the framing of a request to participate in a scientific study affects people's willingness to participate in research and whether this is mediated by the social perception of the researchers conducting the study. Through an online questionnaire, we examined whether the specification of who conducts the research (i.e., the 'source': three psychological specializations, namely organizational psychologists, social psychologists and psychologists) and framing expected research findings in terms of warmth or competence, affect people's willingness to participate. Furthermore, we examined whether this is mediated by the social perception of the sources in terms of warmth, competence and social status. Results showed this was not the case. Interestingly and relevant for future psychological (field) research, the findings indicate that 'psychologists' as well as 'social' and 'organizational' psychologists are perceived as relatively high in terms of warmth, competence and social status. Further findings included the researcher's warmth and social status being related to willingness to participate and framing expected research findings did not yield significant differences in willingness to participate. However, further research is needed to properly address the relationship of warmth and social status with willingness to participate. Future researchers are also recommended to make use of pilot studies to test the social perception of the source and to focus on a single aspect of this study.

Keywords: Social perception, Social status, Willingness to participate, Framing, Source, Warmth and Competence

Introduction

Employees of organizations often participate in research conducted by their employers or third parties (such as psychological institutes or universities). They may participate in studies open to all individuals or those that specifically target employees, such as studies that focus on factors like workplace diversity or ethics. This makes employees a valuable research population, specifically to the specializations of psychology that focus on the workplace, like organizational psychology and social psychology. Employees are valuable because psychological research cannot be conducted without the help of participants. However, it is not always easy to attract employees for research. Participation can depend on many factors and determines, for the most part, the power and success of research. For example, low participation rates can cause smaller data samples. Smaller data samples decrease the power of statistical data and can undermine the credibility of the collected data. Most importantly, low participation rates can undermine the generalizability of the collected data (Biemer & Lyberg, 2003; Marszalek, Jacob, Kohlhart, & Cooper, 2011; Rogelberg & Stanton, 2007). With this said, concerns about scientific methods in psychology are not new (Gough & Madill, 2012). Almost all of the research in psychology is based on subjectivity, such that answers to surveys or other research methods are based mostly on contextual factors (e.g. mood, concentration levels, background noise or usability of the survey). To deal with this subjectivity and to make results more objective, large sample sizes are important. However, unless a survey is administered in a coercive way, a 100 percent participation rate is hardly ever achieved (Baruch & Holtom, 2008). In fact, the average participation rate to surveys is not even close to 100 percent, the average participation rate to surveys from academic studies dwindled down from 64.4 percent in 1975 to 48.4 percent in 1995 and seems to have stabilized at this point (Anseel, Lievens, Schollaert & Choragwicka, 2010; Baruch & Holtom, 2008). While this may seem positive, the study by Anseel et al. (2010) shows that the stabilization of response rates is actually caused by the use of response enhancing techniques (such as monetary gifts or incentives, follow-up and personalization), rather than an actual stabilization. Anseel et al. (2010) mention that the overuse of known enhancing techniques affects the efficacy of such techniques and reduces their overall effectiveness. They suggest that other appropriate techniques or ways to attract employees to respond should be explored (Anseel et al., 2010).

To shed more light onto the factors that influence participation rates, The National Research Council addresses nonresponse in social surveys in their book (2013). Here, they describe that one of the factors that influence participation rates is that of a cost-benefit analysis, meaning that people will participate if they conclude that the rewards outweigh the costs. Another important factor they mention is that there may be differences in the likelihood to participate among different socio-demographic groups, with some more or less prone to participate. Interestingly, they also mention the factor of attitude towards surveys or the topic of the research to play a role in the decision to participate. For example, they mention the leverage-salience theory (LST) by Groves, Singer and Corning (2000), which points out that people vary in the importance and value they assign to aspects of a survey. This means that for some individuals the topic may be important and for others the perception of the researchers or organization performing the survey matters most (i.e., the perception of the *source*, that is, by whom the research is conducted). The LST also highlights that individuals may base their decisions to participate in research on how the sources provide information to the individuals. Given that the LST highlights the perception of the source performing the survey and the information they provide, it is important to know how the source is perceived. However, in the case of psychological research, there seem to be no studies to date that have examined how employees perceive psychologists, psychology, or their specializations. This means that psychologists and psychological specializations lack sufficient knowledge of how they are perceived, which could be utilized in order to improve participation rates of employees. There have been a few general studies looking into the perceptions of organizations whose goal is medical or who are affiliated with social causes and initiatives (like nonprofit organizations) (Arrow, 1978; Lichtenstein, Drumwright, & Braig, 2004), but they cannot be generalized to the institutes of psychology (such as university departments). This is why, in the current study, we will explore how psychologists and the specializations within psychology that are most interested in employees as research participants, are perceived and how this perception can be used to improve participation rates. Additionally, this study will also examine whether the expected research findings (i.e. the information that is provided by the source) may be framed in different ways to positively affect participation rates. This information, in turn, can inform how future studies can be presented in such a way that it attracts more employees to participate in scientific research.

Social Perception

In psychology, the theory that can explain the workings of the LST, in terms of how an organization or source (conducting the research) is perceived, is the theory of social perception (Fiske, Cuddy, & Glick, 2007). The social perception theory explains that people determine the intentions of others and the ability to act upon them on two dimensions. The first dimension is that of warmth; which is the person's or organization's friendliness, helpfulness, sincerity and trustworthiness. The warmth dimension assesses the person's or organization's perceived intent and suggests a motivation to be other-focused and behave in line with moral codes (Cuddy, Fiske, & Glick, 2008; Kervyn, Fiske, & Yzerbyt, 2015). The second dimension is the person's or organization's competence; perceived ability, intelligence, skill, creativity and efficacy. The competence dimension assesses the person's or organization's ability to act upon their intent (Kervyn et al., 2015). These two dimensions together account for 82% of the variance in perceptions of social behaviors (Fiske et al., 2007). The two dimensions tend to act reciprocally, meaning that assessments of groups tend to be high on one dimension (e.g. competence) and low on the other dimension (e.g. warmth), but not always high on both dimensions (Fiske, 1993). The social perception of a person or organization largely influences the likelihood of whether a person wants to work together with another person or organization (Aaker, Vohs, & Mogilner, 2010; Cuddy, Glick, & Beninger, 2011). For example, in the study by Aaker et al. (2010) they examined the social perception of nonprofit and for-profit organizations and the customer's willingness to buy the organizations' products. In their study they found that nonprofit organizations and for-profit organizations differ in how customers perceive them. Nonprofit organizations were found to be rated higher on trustworthiness than their for-profit counterparts, due to the for-profit's association with the economy and finances (Hansmann, 1981). However, for-profit organizations were rated to be more competent due to their reputation for high-quality products and value creation (Fiske, Cuddy, Glick, & Xu, 2018). This high rating of competence led to an effect in which customers were more willing to buy a product from a for-profit organization. This is in contrast to a high rating of warmth, which did not lead to an increased willingness to buy a product. However, Aaker et al. (2010) also found that when a nonprofit organization's perceived competence is boosted by a credible source, the willingness to buy a product from a nonprofit organization increases to the

level or even above that of a competent for-profit organization. Even though the concepts of buying a product and participating in research are not the same, the above study does show an interesting interaction between people's willingness to interact with a person or organization and the dimensions of social perception.

Stereotypes

The two dimensions of social perception are not only central to perception, but they also largely determine the variance in stereotypical judgments when a person or organization is perceived (Aaker et al., 2010). Stereotypes are defined as an individual's set of beliefs about the characteristics or attributes of a group (Judd, & Park, 1993). They can be negative, positive, inaccurate or accurate, and they are used to distinguish a particular group from others. The way social perception influences stereotypes can be explained with the use of the Stereotype Content Model (SCM) by Cuddy et al. (2008). The SCM is a graph with two axes corresponding to warmth and competence on a continuum ranging from low to high, creating a two-dimensional map. On the SCM, groups are displayed based on the stereotypical beliefs people have of them. For example, the elderly are positioned to have low competence but high warmth, whereas rich people are positioned to have high competence and low warmth. In the SCM they also differentiate between nationalities, like Germans being high on competence but low on warmth and Americans being high on competence and high on warmth (Fiske, 2018). The SCM provides a clear overview of how societal groups are perceived based on their stereotypes, but the SCM has thus far not been used to determine perceived differences between types of occupations like a banker or a psychologist (Cikara, & Fiske, 2013; Cuddy et al., 2008; Fiske, 2013; Fiske, 2018). While there are a few studies studying the stereotypical beliefs about psychology, they do not directly relate to the SCM or social perception (Brinthaup, Hurst, & Johnson, 2016; Haskell, Burrows, Harrington, McCullough, Schuh, & Sperberg, 2012). Brinthaup et al. (2016) mention that the field of psychology has its share of stereotypes and that these stereotypes apply to psychological research, the discipline itself and the people who work in the field, but they also mention that there is a lack of research looking into these stereotypes. However, before a prediction can be made about psychologists' stereotypes, it is also important to determine the perceived social status of psychologists and what this means in terms of social perception and participation rates.

Perceived social status

The SCM, as described above, provides a clear overview of how societal groups are perceived based on their stereotypes (Cuddy et al., 2008). Because societal groups belong to a hierarchical structured society it is important to examine what this hierarchical structure means in terms of social perception. The hierarchical position a person obtains in society is based on his/her social status, which encompasses different dimensions like demographic factors and socioeconomic status (SES) (Blader & Chen, 2014; Cuddy et al., 2008). Social status refers to the evaluation of where a person stands in regards to others in terms of occupation, education, income, prestige and power. A high status generally results in the advantage of others becoming more willing to dedicate their resources to the individual or group possessing the high status, which in turn is used to increase the performance of the high status individual or group (Podolny & Philips, 1996). This is a cumulative effect in which a high status brings in more resources, which improves performance, which improves status and is called the Matthew Effect (Merton, 1968). In science, this also means that high status scientists are more likely to receive greater rewards and that the areas in which they work are perceived to yield more promising results (Podolny & Philips, 1996). The social status of a person also provides the information necessary to assess the person's warmth or competence, answering the questions (1) whether the other intends to help or harm and (2) the ability to act upon the intent (Cuddy et al., 2008). High status groups are typically believed to be competent, whereas low status groups are believed to be incompetent due to the assumption that status is derived from ability (Fiske, Xu, Cuddy, & Glick, 1999). This assumption stems from the fact that high status groups are powerful and have the ability to control and provide resources, therefore linking status to perceived competence (Fiske, 1993). This could suggest that the previously mentioned effect of the dimension of competence, which increases the willingness to interact with an organization, also applies to perceptions of high status (Aaker et al. 2010). On the other hand, the dimension of warmth does not follow the same relationship, often showing the complete opposite. For example, whereas high status groups are respected for their competence, they are often not very well liked unless they belong to the same ingroup as the person judging them (e.g. psychologists judging psychologists; Fiske et al., 1999). This links back to the fact that social perception judgments tend to be high on one end (e.g. competence)

and low on the other end (e.g. warmth), but not usually both at the same time (Fiske, 1993). To determine how occupations are perceived in terms of social status, many indexes and scales have been developed that provide lists of occupations and their respective social status scores (Korsten, 2017; MacMillan, Beavis, & Jones, 2009; Stevens & Featherman, 1981). However, most of the indexes and scales determine the perceived status scores based on tables and formulas computing incomes and educational levels, rather than measuring the perception of status provided by the general public. A scale that did use the public's perception to measure status of occupations, did not include psychologists as an occupation (Korsten, 2017). Thus, leaving psychologists' perceived status to be predicted in this study.

Source predictions

Following the LST, we know that individuals base their decisions to participate in research on who performs the research and how they are perceived. In the current study, we examine the perception of organizational and social psychologists (compared to psychologists). But, with the literature used in this study it is possible to make preliminary predictions in regards to how psychologists as a group are perceived and how this perception will likely influence participation rates.

Psychologists as a group are defined as those who study the mind and behavior of humans. Psychologists generally tend to help or enlighten those who are in need of mental help or support, ranging from treatments to mental disorders to mediating business-employee conflicts and understanding group dynamics. This makes psychologists overall a very helpful occupation to those in need. As previously seen in the studies of Arrow (1978) and Lichtenstein et al. (2004), those who are affiliated with social causes or initiatives or help people in a medical way, are perceived as warm. Whereas psychologists do not necessarily help others medically, they still help others mentally. This is also what makes a psychologist's work very subjective, because helping others is very subjective and can differ from one person to the next as different people have different needs (Gough & Madill, 2012). The subjective nature of the work activities makes psychologists subject to incorrect stereotypes, like calling a psychologist's work merely common sense (Gardner & Brown, 2013). However, to become a psychologist one needs to be intelligent and study for many years in university, making them well educated. Looking at the specific specializations used in

this study, we expect the name differences to play a role in determining how the specializations are perceived. Especially, because it is expected that not all individuals know what the psychological specializations entail, meaning that the words “social” and “organizational” are predicted to cause differences in perception. The word “social” elicits the thoughts of social interactions, going out and being together with others, and is often used to describe warm situations and is included in social perception studies to measure the dimension of warmth (Kervyn, Judd, & Yzerbyt, 2009). The word “Organizational” elicits the thoughts of working, organizations, managers and the office, which bring a cold feeling. This is because the workplace is not often a place for leisure and sociable activities, but rather a place where professionals perform their work and certain rules apply. Therefore, we predict the word “organizational” to boost the perceived competence of organizational psychologists.

The reasoning above makes us predict that organizational psychologists are perceived as low on warmth, high on competence and high on social status, social psychologists and psychologists are perceived as high on warmth, low on competence and low on social status. Perceived social status is predicted to differ across specializations due to its supposed relationship with the perception of competence (Cuddy et al., 2008; Fiske et al., 1999). In this study we will further explore how the psychological specializations are perceived in terms of social status, because it is not possible to predict people’s knowledge on psychologist’s education and income, which are mandatory to properly assess the SES.

H1.1: Our first expectation is that the source (the psychology specialization), performing the research, is expected to have an effect on people’s willingness to participate. Specifically, we expect the mentioning of organizational psychologists to result in significantly higher willingness to participate than the mentioning of social psychologists and psychologists.

Framing of research findings

Building on the influence of social perception and social status, the study by Aaker et al. (2010) found that an organization's perceived competence can be boosted by a credible source. Specifically, a highly competent source (e.g. Wall Street Journal) can help increase competency impressions of otherwise warm organizations (Aaker, Garbinsky, & Vohs, 2012). This would suggest that a source can influence the way an organization is perceived by others. To explore why this happens, literature studying the effects of framing is addressed. The literature on framing states that a frame can be considered to be a framework in which information is considered, selected, interpreted and evaluated or understood (Elliott & Hayward, 1998). The way a frame provides information can often produce great changes in opinion and lead to different results (Chong & Druckman, 2007). For example, in a study by Presser, Blair and Triplett (1992) in which they examined respondents of a telephone survey, which was framed with two different sources: a neutral source (i.e., a University), vs. a newspaper with a well-known position on the issue (i.e., The Washington Post). Results revealed that respondents would respond significantly more in line with the paper's position if they were framed with the newspaper as the source than respondents who were framed with the university as the source. Another example of such an effect is derived from the study of Norenzayan and Schwarz (1999), in which they provided participants with an actual murder case and asked the participants to provide explanations related to the personality and social circumstances of the murderer. Participants were framed with two sources performing the study (the Institute of Personality Research vs. the Institute of Social Research). The study showed that the participants, who were framed with the personality psychologist as the source, would give explanations which were focused more on the personality of the murderer. The opposite was true when the participants were framed with a social scientist, then participants would give explanations focused more on social circumstances. An explanation for this framing effect is that the way a survey is presented, or in this case the source, provides an interpretive framework that helps participants resolve any ambiguities about the questions and their meaning (Galesic & Tourangeau, 2007). This could mean that the source is able to provide information about how surveys or, in the case of the study by Aaker et al. (2010), organizations are to be perceived.

An interesting addition to the effect of source framing is an effect called the “match-up hypothesis”. This effect shows that congruence between the perception of the source and that which they endorse, can lead to more favorable attitudes to what is endorsed (Kamins, 1989). In specific, Choi and Rifon (2012) studied the effects of the match-up hypothesis in a marketing setting in which they show that a greater congruence between celebrity image and product image leads to more favorable consumer attitudes and greater purchase intentions. This is supported by the study of Törn (2012), in which he mentions that one should not use an unattractive person to promote beauty products, as this incongruence might have a negative effect for consumer’s attitudes towards the product. Even though celebrities and products sales are not the same as psychological research, the effect of congruence between endorser image and that which is endorsed is interesting to this study. Given the fact that psychological research findings often endorse or provide information about a specific target, or in this study, an organization in which the employees work, it is interesting to find out whether the effects of the match-up hypothesis hold true for research participation. In specific, whether congruence between the source’s expected research findings and the source’s perceived social perception can increase employee’s willingness to participate in research (i.e., research findings framed in terms of the company’s warmth and the research is conducted by social psychologists, and research findings framed in terms of competence of the company and the research is conducted by organizational psychologists).

H1.2: We also expect an interaction effect between the source and the framing of expected research findings. Specifically, we expect that congruence between the framing of expected research findings and (the hypothesized social perception stereotype of) the source (i.e., research findings framed in terms of the company’s warmth and the research is conducted by social psychologists, and research findings framed in terms of competence of the company and the research is conducted by organizational psychologists) to result in significantly higher willingness to participate than incongruence (i.e., research findings framed in terms of the company’s warmth and the research is conducted by organizational psychologists, and research findings framed in terms of competence of the company and the research is conducted by social psychologists). In addition, we will explore whether there are any interaction

effects between framing of the research findings and the control condition (i.e., research conducted by “psychologists”).

H2: Our second expectation is that the effect (i.e. of the source on willingness to participate) is mediated by the perception of each source in terms of warmth, competence and social status. Specifically, we predict perceptions of high competence and high social status to relate to significantly higher willingness to participate than perceptions of high warmth.

Educational level

Lastly, linking back to the book by the National Research Council (2013), they mention that socio-demographic factors play a role in the willingness to participate in survey research. Specifically, the educational level of participants seems to be a big factor in the rate of non-response to survey research. Research has shown that there is a discrepancy in the educational levels of respondents and non-respondents, with low educational levels resulting in increasingly more non-respondents (Gannon, Nothorn, & Carroll, 1971; Larroque, Kaminski, Bouvier-Colle, & Hollebecque, 1999; Suchmann & McCandless, 1940; Tolonen, Helakorpi, Talala, Helasoja, Martelin, & Prättälä, 2007). The fact that this occurs over multiple surveys performed by different sources, is troubling for this study and should thus be controlled for in the analyses.

Method

Participants

Our final dataset, due to an attrition rate of 50.8%, included $N = 95$ participants (50.5% male, $M_{age} = 33.99$ years, $SD = 12.96$). This number did not meet the minimum requirement of $N = 150$ participants as obtained from the power analysis (Appendix 8.0). Participant’s modus educational level was HBO, with $N = 33$ participants having finished education at this level. All participants were Dutch citizens, and the sample was acquired through a convenience sample, using the university’s SONA SYSTEM and by spreading flyers (Appendix 9.0).

Design

The study encompassed a 2 (social perception frame of expected research findings: warmth vs. competence) x 3 (source: social psychology vs. organizational psychology vs. psychology) between-participants design. Willingness to participate was the dependent variable and perceived social perception and social status were included as a potential mediator. Sample spread amongst source conditions: Social psychology ($N = 30$), Psychology ($N = 40$) and Organizational Psychology ($N = 25$).

Materials

Manipulation

We asked participants to read a scenario to empathize with the role of employee of an organization (i.e., a bank; Appendix 2.0). This scenario puts the participant in the role of an employee who is asked to participate in research that is performed in the organization, by psychologists of University Utrecht. We used six versions of the scenario, depending on condition. That is, participants either read about a scenario in which research was performed by social psychologists (or organizational psychologists or psychologists) with expected research findings corresponding to the dimension of warmth (or competence). An example of the scenario is: *“Imagine that you, as an employee at a bank, just received an email with the request to participate in a study by the department of **[Organizational Psychology, Social Psychology or Psychology]** of Utrecht University. In the email you read that results of the research will give insight in how **[driven or responsible]** your employer (the bank) is to implement an honest and ethical behavioral policy, and how much such an implementation will yield **[better performance and more (financial) success / a better working atmosphere and more trust]**”* (original in Appendix 2.0).

Social perception questionnaire

Participants were asked to rate the source (i.e. social psychology, organizational psychology or psychology) on traits of social perception (Appendix 3.0), using a 7-point Likert scale (1 = not at all applicable, 7 = very applicable). Social perception was measured using the same nine traits as from the study of Leach, Ellemers and Barreto (2007). Warmth was measured using the traits: friendly, warm, likeable, sincere, honest and trustworthy ($\alpha = .83$). The dimension of competence was measured using the traits: competent, intelligent and skilled ($\alpha = .87$).

Perceived social status questionnaire

Participants were asked to rate the source (i.e. social psychology, organizational psychology or psychology) on aspects of social status, using a 7-point Likert scale (1 = not at all, 7 = very much). Social status was measured using the same three questions from the study of Fiske et al. (2018) ($\alpha = .72$); *“How prestigious are the jobs typically achieved by members of this group?”*, *“How economically successful have members of this group been?”* and *“How well educated are members of this group?”* (original in Appendix 4.0).

Participation rate

Willingness to participate was measured using four items ($\alpha = .66$). Example items are: *“I’m prepared to take part in this research”* and *“I would rather not participate in this research”* (recoded) (see Appendix 5.0). Participants rated their willingness to participate on a 7-point Likert-scale ranging from 1 (not at all applicable) to 7 (very applicable).

Procedure

Participants could start with the study after they had given their consent in a prepared informed consent form that was presented to them. This form informed the participants about their voluntary participation, confidentiality, and the rules and procedure of the study (Appendix 1.0). After providing consent, participants were presented with one of our six scenarios, depending on the condition they were randomly assigned to. In the scenario they were asked to empathise with the role of employee of an organization, in particular a bank (Appendix 2.0). After participants had read the scenario, they were asked to respond to our self-report measures (Appendix 3.0). First, we asked participants to rate the source, as used in the scenario, on social perception traits and how much they think the people, working within these specializations, exhibit the traits. Following this questionnaire, they were also asked to rate the specialization on traits regarding masculinity/femininity. However, because this belongs to a different study from a different researcher, this will not be explained in full detail here. Thereafter, the scenario was presented a second time, after which participants were asked to indicate their willingness to participate in the study described in the scenario. The last questionnaire consisted of a basic demographic questionnaire containing four

questions regarding their age, gender, educational level and current job/education. After this, the participants were presented with the debriefing in which the participants were told about the real goal of the study. The participants were given the option to give their opinion to withhold their data from being analyzed and were told they could receive a reward for participation. The next page informed the participants about the types of rewards they could receive and that any personal information they provided, in order to receive the rewards, were not linked to their answers in the questionnaire. Moreover, we removed this personal information right after completion of the study. At last, the participants were thanked for their participation. The total study lasted about 10 minutes.

Results

Educational level check

To investigate whether our analyses should be controlled for participants' educational levels, an ANOVA was performed to test whether participants' educational levels (independent variable) had an effect on their willingness to participate (dependent variable). The educational levels were categorized according to the Dutch educational system of middle, high and scientific educational levels. Results showed no statistically significant difference between educational levels on willingness to participate ($F < 1$). To investigate whether educational levels could predict willingness to participate, an additional regression analysis was performed with the same variables. The analysis showed that no significant linear relationship was present, $\beta = -.05$, $t(93) = -.38$, $p = .71$. Educational levels explained no significant variance in participants' willingness to participate, $F < 1$. This means that participants' educational level did not sufficiently influence their willingness to participate, which is why we do not control for this variable in further analyses.

Source prediction check

To check whether organizational psychologists were rated higher on competence and social status and lower on warmth than social psychologists and psychologists, a MANOVA analysis has been performed. In this analysis the variables warmth, competence and social status were the outcome variables, and source was included as the independent variable. The analysis showed no significant differences in competence, social status and warmth scores based on the source performing the

research, $F < 1$. This was not according to source predictions made in the introduction as all three sources do not differ significantly in terms of how they are perceived. To further analyze the scores given on warmth, competence and social status, a T-Test analysis was performed. In this analysis the mean scores of warmth, competence and social status were compared to the midpoint of the answer scale (4). Scores on warmth, competence and social status all differed significantly from the midpoint, with scores on warmth $M = 5.04$, $SD = 0.94$, $t(94) = 10.84$, $p < .001$, scores on competence $M = 5.41$, $SD = 1.12$, $t(94) = 12.30$, $p < .001$ and scores on social status $M = 5.12$, $SD = 0.99$, $t(94) = 10.94$, $p < .001$. A Pearson correlation was used to determine the relationship between competence, social status and warmth scores. The analysis showed significant, positive correlations between warmth and competence scores ($r(92) = .70$, $p < .001$), warmth and social status scores ($r(92) = .38$, $p < .001$) and competence and social status scores ($r(92) = .60$, $p < .001$). Contrary to the expectations, all sources were thus considered equally high in terms of warmth, competence and status. Also contrary to expectations are the correlations found between scores on warmth, competence and social status.

Source and framing on willingness to participate

To investigate whether the source and framing of expected research findings had an effect on willingness to participate an ANOVA was performed. The outcome variable for this analysis was willingness to participate. The independent variables for the analysis were the source and framing. The expected effect of the source was not statistically significant on willingness to participate, with $F < 1$. The mean willingness to participate in the research request from organizational psychologists was $M = 4.18$, $SD = 2.01$, from psychologists $M = 3.96$, $SD = 1.58$ and from social psychologists $M = 4.17$, $SD = 1.82$. The effect of framing was not statistically significant on willingness to participate, with $F < 1$. The mean willingness to participate when the research findings were framed in terms of warmth was $M = 4.09$, $SD = 1.54$ and when the research findings were framed in terms of competence $M = 4.11$, $SD = 1.41$. The expected interaction effect between the source and framing was not significant with $F < 1$, with congruence ($M = 4.18$, $SD = 1.47$) and incongruence ($M = 4.02$, $SD = 1.49$). To further analyze the scores given on willingness to participate, a T-Test analysis was performed. In this analysis the mean score of willingness to participate was compared to the midpoint of the answer scale (4). The results showed that the mean willingness

to participate ($M = 4.08$, $SD = 1.01$) did not differ significantly from the midpoint, $t(94) = .82$, $p = .42$. The results show that participants reported no difference in their willingness to participate in research when different psychological specializations were said to perform the research, nor when the research findings were framed in terms of warmth or competence to match the source. Also, the results show that willingness to participate did not differ from the midpoint of the answer scale.

Mediation by perception of warmth, competence and social status

Results from the first hypothesis show that there are no significant differences between the sources on willingness to participate, therefore no mediation analysis can be performed. Nevertheless, we did investigate whether ratings of competence and social status, compared to warmth, were related to higher willingness to participate using a multiple regression analysis. In this analysis the outcome variable was willingness to participate, and the predictor variables were competence, social status, and warmth. The analysis showed a significant Pearson correlation between warmth and willingness to participate ($r(92) = .22$, $p = .02$) and social status and willingness to participate ($r(92) = .17$, $p = .05$), but not for competence and willingness to participate ($r(92) = .17$, $p = .06$). Further, the analysis showed that no significant linear relationship is present between competence and willingness to participate, $\beta = -.05$, $t(94) = -.36$, $p = .72$, social status and willingness to participate, $\beta = .12$, $t(94) = .94$, $p = .35$ and warmth and willingness to participate, $\beta = .24$, $t(94) = 1.53$, $p = .13$. Together, they explained no significant variance in scores of willingness to participate, $F(1, 93) = 1.89$, $p = .14$, $R^2 = .24$. These results show that none of the predictor variables are able to predict willingness to participate and that the dimension of warmth has, even though the effect is not significant, the strongest relationship amongst the three predictor variables in this analysis. This is not conform the hypothesis in which competence and social status were predicted to relate to significantly higher willingness to participate than warmth.

Discussion

In this study the theories of social perception and social status and their effectiveness on research participation rates were explored. Specifically, this study tested whether the source (i.e. psychological specializations) would influence employees' willingness to participate in research and whether framing the expected research findings to match

the perception of the source would influence employees' willingness to participate in research. While testing the above, we tested how the different sources (i.e. psychological specializations) were perceived in terms of social perception (i.e. warmth and competence) and social status and whether differences in willingness to participate in research could be addressed to differences found in social perception dimensions or social status.

Important to mention is the fact that during the study all participants were asked to read a scenario and empathize with the role of an employee of a bank regardless of whether they were actual employees or students themselves.

Evaluation of results

Source and framing on willingness to participate

Our first expectation was that the source, performing the research, was expected to have an effect on willingness to participate. More specifically, we expected that organizational psychologists would yield significantly higher willingness to participate than social psychologists and psychologists. Results from the analyses show that all three psychological specializations yielded no significant differences in terms of willingness to participate. This finding could suggest that all three sources are perceived to belong to the same overarching group (i.e., psychologists), thus showing no significant differences between them. This would mean that the leverage-salience theory (Groves, Singer, & Corning, 2000) holds true, in the sense that people base their willingness to participate on the source performing the research, but that it does not matter for psychological research which of the three specializations is mentioned. This is an interesting insight as it would imply that people are not fastidious regarding the psychological specialization performing the research. Interesting would be to figure out whether mentioning any psychological specialization will result in a greater willingness to participate in research than not mentioning a psychological specialization at all.

We also expected there to be an interaction effect between the source and the framing of expected research findings, with congruence (i.e., research findings framed in terms of the company's warmth and the research is conducted by social psychologists, and research findings framed in terms of competence of the company and the research is

conducted by organizational psychologists) between the frame and the source to result in significantly higher willingness to participate than incongruence (i.e., research findings framed in terms of the company's warmth and the research is conducted by organizational psychologists, and research findings framed in terms of competence of the company and the research is conducted by social psychologists). The analysis showed that such an interaction effect was not significant and that there was no difference in willingness to participate between conditions of congruence and incongruence. This finding suggests that matching the expected research findings to the perception of the source may not yield higher willingness to participate. This finding may also suggest that we cannot yet exclude the effect of the match-up hypothesis (Choi & Rifon, 2012; Kamins, 1989; Törn, 2012). All three specializations were scored equally on warmth, competence and social status, meaning that the effect of congruence and incongruence could not be properly measured as there was no chance for the incongruence condition to be tested. The inability to test the incongruence condition stems from the fact that, due to high scores of both competence and warmth, there was no condition in which a warm or competent frame can be tested with a source that is perceived to be the opposite (i.e. a warm frame with a competent source or a competent frame with a warm source). Instead, the results show that there is no difference between the scores of conditions of congruence. What is interesting is the fact that the main effect of framing also did not yield significant differences in willingness to participate. This means that framing either warm or competent research findings did not cause significant changes in the participant's willingness to participate. This finding may suggest that what is expected to result from research and what it can say about an organization or company does not matter in people's decision to participate in psychological research.

Additionally, the analyses have shown that scores on willingness to participate are similar to the mid point score. This means that mentioning a psychological specialization and expected research findings do not cause low or high scores on willingness to participate. This is positive as it reinforces our earlier findings that mentioning any psychological specialization and what is expected from the research does not influence people's willingness to participate in a bad or a good way. Rather, this finding could suggest that people feel neutral about these factors.

Mediation by perception of warmth, competence and social status

Our second expectation was that the effect (i.e. the effect of the source on willingness to participate) would be mediated by the perception of each source in terms of warmth, competence and social status. We specifically predicted the perceptions of competence and social status to relate to significantly higher willingness to participate than perceptions of high warmth. Due to the lack of significant differences in willingness to participate between sources, it was not possible to test the predicted mediation. However, it was possible to test whether competence and social status relate to higher scores on willingness to participate than warmth. Results showed significant correlations between scores on warmth and willingness to participate, social status and willingness to participate but not for competence and willingness to participate. This was contrary to expectations and means that there is a connection between scores on warmth and social status and scores on willingness to participate. These correlations could be attributed to the SCM by Cuddy et al. (2008) in which they also highlight the BIAS map, a map that corresponds to evaluations on warmth and competence and their respective behavioral responses. The behavioral responses are elicited by how one perceives the other and can be categorized in two types: harming behavior and facilitative behavior toward the other. A perception of high warmth and low competence usually results in facilitative behavior, like helping, whereas a perception of high competence and low warmth results in harming behavior, like ignoring (Cuddy et al., 2008). The fact that the current study shows warmth to have a correlation with willingness to participate and competence to have no correlation with willingness to participate is consistent with the theory of the BIAS map (Cuddy et al., 2008). Additionally, the fact that status correlates to willingness to participate is also consistent with the theory of the BIAS map. Whereas the studies by Fiske et al. (1999) and Fiske (1993) argue that social status relates to the dimension of competence, the study by Brambilla, Sacchi, Castellini and Riva (2010) shows that social status relates to both warmth and competence. In their study (Brambilla et al., 2010) they show that when it comes to contexts or environments in which warm traits are considered crucial, warmth will positively mediate the relationship between status and competence. This mediation causes status to also predict warm stereotypes for psychologists, which leads to facilitative behavioral responses as seen in the BIAS map (Cuddy et al., 2008). This may also explain why, during the source prediction check, correlations were found between the different variables. However, none of the factors (i.e., competence,

warmth and social status) held significant linear relationships with willingness to participate and were unable to predict willingness to participate. Meaning that while warmth and social status scores are related to scores on willingness to participate it is not possible to use these scores to predict people's willingness to participate. This implies that the perceived warmth and status of a person or group does not cause willingness to participate. Rather, the warmth and social status of the researchers are related to people's willingness to participate in the context of psychological research.

Limitations

During the execution of this study there were a couple of limitations that should be mentioned. The first limitation that should be acknowledged is the fact that this study was exploratory in nature, meaning that most predictions made were based on a collective idea as obtained from multiple theories that had no tested relationship before this study. However, due to the fact that new relationships were explored we now have more knowledge about the interaction of social perception, framing and social status regarding research participation. It became clear that warmth and social status relate to willingness to participate in the context of psychological research. It also became clear that it does not matter which psychological specialization is mentioned or what research findings are expected in the decision to participate in research. These findings are interesting as it means that more knowledge is to be found within this connection between perception and participation. An example of this is how facilitative behavioral responses (as a response to warm stereotypes; Cuddy et al., 2008) can be addressed to increase participation rates in psychological research.

Another limitation that should be acknowledged is the study design. More specifically, a different design could have made this study a lot more clear and easier to execute. Looking back at the study, we recognize that using a pilot study to measure the social perception and social status of different sources could have provided us with more interesting findings. By using a pilot study we would have been able to choose sources that actually differ on social perception dimensions and this would have helped with the exploration of the match-up hypothesis and the mediation effect. These effects required that sources significantly differed in their perception, which was not the case in this study. In addition, focusing on just one aspect (i.e., the manipulation of the source and framing of expected findings or the mediation effect of social perception

dimensions) could have made this study easier to execute as it would have led to less clutter. Now, a lot of assumptions and predictions had to be made in order to make the study work and this could have been partially prevented by focusing on a single aspect and doing pilot studies.

Lastly, covid-19 has been a factor that should be mentioned in this section due to its influence on the recruitment process.

Despite the limitations mentioned above, the current study used reliable measures and interesting results were found. Looking to the future, this study has found insights that imply that there is still knowledge to be gained from exploring the connection between perception and research participation. The current study had a few limitations which made studying the effects harder than it should have been, but this can be solved in the future.

Future research and conclusion

To conclude this thesis and also present recommendations for the future, we suggest a prerequisite pilot study to measure different occupations in terms of their perceived social perception and social status so that sources can be chosen that differ on social perception dimensions and social status. By doing this, future research can measure whether the effects, as predicted in this study, influence employees' willingness to participate in psychological research. Future researchers are also suggested to focus on one specific effect at a time (i.e., the manipulation of the source and framing of expected findings or the mediation effect of social perception dimensions). While this study explored the effects of social perception, social status and framing of research findings at the same time, we suggest researching one effect at a time. This means that future studies should start with a pilot study as described above and then choose to study the effects of the source and framing of expected findings or the mediation effect of social perception dimensions. This not only increases the power of the results, it also makes studying the effects a lot more simple.

Interesting would be to put more focus on the facilitative behavioral responses, as elicited by warm stereotypes. Especially in a psychological context, where psychologists are perceived as high on warmth, this is an interesting finding to explore

in more detail. It is up to future research to show whether this is a useful variable to use for the enhancement of participation rates, as the response rate to surveys continues to decline with time. By researching more variables that influence participation rates, it is possible to expand on the amount of methods and tools being used right now. A wider variety of tools and methods can battle the overuse of a select few, as mentioned in the study by Anseel et al. (2010). With this study, we have made the first step towards exploring a new potential relationship between factors regarding participation rates. We have been able to show that interesting new insights can be derived from this relationship and that more research is needed to fully explore the potential of this relationship. Let this step be the first of many in the search for new insights into research participation, so that eventually more methods and tools can be produced to combat the decline in participation rates.

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Appendix

Appendix 1.0 Informed Consent

Hieronder volgt een beschrijving van de onderzoeksprocedures en uitleg van jouw rechten als proefpersoon. In overeenstemming met de ethische richtlijnen van de American Psychological Association (APA) vragen we je deze informatie zorgvuldig te lezen.

Algemene informatie

Het doel van dit onderzoek is om na te gaan hoe mensen denken over bepaalde beroepsgroepen. Dit onderzoek wordt uitgevoerd als onderdeel van een masteronderzoek aan de Universiteit Utrecht. Deelname aan het onderzoek duurt ongeveer 10 minuten in totaal en vindt online plaats. Onder de deelnemende proefpersonen wordt 2 keer een Nationale Bioscoopbonnen ter waarde van €10 verloot. Psychologiestudenten aan de Universiteit Utrecht kunnen er ook voor kiezen om 0,25 proefpersoonsuren (PPU) te ontvangen, deze zullen begin april 2020 worden toegekend. Aan het einde van het onderzoek kun je aangeven voor/op welke van de twee vergoedingen je kiest/kans wilt maken.

Procedure

In dit onderzoek word je gevraagd om je mening te geven over bepaalde beroepsgroepen. Op de volgende pagina staat een scenario beschreven en we vragen je deze situatie in te beelden en je in te leven in de rol van werknemer van een organisatie. Vervolgens volgen er een aantal vragen met betrekking tot dit scenario. Verdere instructies zullen gegeven worden tijdens de voortgang van het onderzoek. Na voltooiing zul je de mogelijkheid krijgen om je e-mailadres achter te laten indien je kans wilt maken op één van de twee Nationale Bioscoopbonnen of de PPU (voor studenten van de Universiteit Utrecht).

Met betrekking tot de onderzoeksprocedures, gelden de volgende voorwaarden:

- Jouw deelname is geheel vrijwillig. Je kunt weigeren om deel te nemen of op elk gewenst moment jouw deelname stoppen, zonder consequenties.
- Sommige details van dit project kunnen niet bekend worden gemaakt tot de sessie is voltooid.

- Er zijn geen bekende of verwachte risico's verbonden aan deelname aan dit onderzoek.

Met betrekking tot het gebruik van jouw onderzoeksgegevens, gelden de volgende voorwaarden:

- Jouw gegevens zullen alleen worden gebruikt voor onderzoeksdoeleinden. Alle onderzoeksgegevens die worden verzameld, zullen worden gebruikt voor het onderzoek.
- Contactgegevens (dat wil zeggen, indien je jouw e-mailadres invult om kans te maken op één van de Nationale Bioscoopbonnen, of je naam en studentnummer achterlaat voor PPU's) slaan we op in een ander bestand dan jouw onderzoeksgegevens (de antwoorden en reacties op het onderzoek). De contactgegevens worden alleen gebruikt om je op de hoogte te kunnen brengen indien je een bioscoopbon hebt gewonnen of om PPU's toe te kennen, en worden direct na de loting/toekenning verwijderd.
- De in deze studie verzamelde gegevens zullen anoniem en vertrouwelijk worden behandeld. Alleen de onderzoeksgegevens die noodzakelijk zijn voor de analyse en verificatie van onderzoeksresultaten zullen veilig bewaard worden voor ten minste 10 jaar.
- De verzamelde onderzoeksgegevens worden gebruikt voor wetenschappelijke rapportages, waaronder de scriptie behorende bij het masterproject waar deze studie onderdeel van is. Gerapporteerde bevindingen kunnen echter in geen geval herleid worden naar jou als persoon. Alleen de geanonimiseerde gegevens kunnen worden gedeeld met derden voor wetenschappelijke doeleinden.
- Jij hebt het recht om jouw onderzoeksgegevens achter te houden van verdere analyse. Dit betekent dat we jouw gegevens niet zullen gebruiken voor het onderzoek, noch anoniem zullen delen voor wetenschappelijke doeleinden. Indien je na afloop van het online onderzoek besluit dat je niet wilt dat wij jouw onderzoeksgegevens gebruiken dan kun je dat op dat moment aangeven. Hierna kunnen we jouw onderzoeksgegevens niet meer uitsluiten, omdat de gegevens anoniem zijn.

Heb je vragen over het bovenstaande? Neem dan contact op met één van de betrokken onderzoekers, dat is, één van de studenten van het betreffende masteronderzoek: Rick Hendriks (r.a.hendriks@students.uu.nl)

***Ik verklaar dat ik volledig ben geïnformeerd over het doel van dit onderzoek en de dataopslag en dat ik de kans heb gekregen om vragen te stellen.**

***Ik ben tenminste 18 jaar oud en geef mijn toestemming voor mijn deelname aan dit onderzoeksproject.**

***Ik begrijp dat mijn deelname vrijwillig is en dat ik op elk moment mijn deelname kan stoppen zonder hiervoor een reden te hoeven geven.**

Appendix 2.0 - Scenario manipulations

Voor dit onderzoek vragen we je in te beelden dat je een werknemer bent van een grote financiële instelling: een bank. Deze bank is gevraagd deel te nemen aan een grootschalig wetenschappelijk onderzoek naar integriteit en ethisch gedrag op de werkvloer. Het onderzoek wordt uitgevoerd door de afdeling **[Sociale Psychologie, Organisatiepsychologie of Psychologie]** van de Universiteit Utrecht. Het management team van de bank heeft besloten deel te nemen aan het onderzoek en heeft de afdeling **[Sociale Psychologie, Organisatiepsychologie of Psychologie]** toestemming gegeven contact op te nemen met werknemers met het verzoek een online vragenlijst in te invullen.

Beeld je in dat je, als werknemer bij de betreffende bank, zojuist een e-mail hebt ontvangen met het verzoek deel te nemen aan het onderzoek van de afdeling **[Sociale Psychologie, Organisatiepsychologie of Psychologie]** van de Universiteit Utrecht en gevraagd wordt de online vragenlijst in te vullen. In de e-mail lees je verder dat de resultaten van het onderzoek inzicht zullen geven in hoe **[gedreven/verantwoordelijk]** jouw werkgever (de bank) is om integer en ethisch gedragsbeleid te implementeren, en in hoeverre de implementatie zorgt voor **[betere prestaties en meer (financieel) succes/een betere werksfeer en meer vertrouwen]** binnen de instelling. De bevindingen van het onderzoek zullen worden gepubliceerd in een rapport van de afdeling **[Sociale Psychologie, Organisatiepsychologie of Psychologie]** van Universiteit Utrecht waarin te lezen is hoe de bank, waar jij werkt, ervoor staat ten opzichte van andere financiële instellingen.

Appendix 3.0 - Social perception questionnaire

Het onderzoek wordt uitgevoerd door de afdeling **[Sociale Psychologie, Organisatiepsychologie of Psychologie]** van de Universiteit Utrecht. Denk nu aan deze beroepsgroep. Hoe beoordeel je de groep **[Sociaal-psychologen, Organisatiepsychologen, Psychologen]**. op de volgende eigenschappen:

(Antwoordschaal: 1 = helemaal niet van toepassing - 7 = helemaal wel van toepassing)

- Eerlijk
- Aardig
- Betrouwbaar
- Intelligent
- Warm
- Vaardig
- Oprecht
- Competent
- Vriendelijk

Appendix 4.0 - Status questionnaire

Hoe beoordeel je de beroepsgroep **[Sociaal-psychologen, Organisatiepsychologen, Psychologen]** op het volgende?

(Antwoordschaal 1 = helemaal niet - 7 = heel erg)

- Hoe prestigieus vind je het werk van deze beroepsgroep?
- Hoe economisch welvarend denk je dat deze beroepsgroep is?
- Hoe geleerd denk je dat deze beroepsgroep is?

Appendix 5.0 - Repeat Scenario + Participation questionnaire

We hebben je aan het begin van het onderzoek gevraagd je in te beelden dat je een werknemer bent van een grote financiële instelling: een bank. Deze bank is gevraagd deel te nemen aan een grootschalig wetenschappelijk onderzoek naar integriteit en ethisch gedrag op de werkvloer. Het onderzoek wordt uitgevoerd door de afdeling Psychologie van de Universiteit Utrecht. Het management team van de bank heeft besloten deel te nemen aan het onderzoek en heeft de afdeling Psychologie toestemming gegeven contact op te nemen met werknemers met het verzoek een online vragenlijst in te vullen.

Beeld je in dat je, als werknemer bij de betreffende bank, zojuist een e-mail hebt ontvangen met het verzoek deel te nemen aan het onderzoek van de afdeling Psychologie van de Universiteit Utrecht en gevraagd wordt de online vragenlijst in te vullen. In de e-mail lees je verder dat de resultaten van het onderzoek inzicht zullen geven in hoe verantwoordelijk jouw werkgever (de bank) zich voelt om integer en ethisch gedragsbeleid te implementeren, en in hoeverre de implementatie zorgt voor een betere werksfeer en meer vertrouwen binnen de instelling. De bevindingen van het onderzoek zullen worden gepubliceerd in een rapport van de afdeling Psychologie van Universiteit Utrecht waarin te lezen is hoe de bank waar jij werkt ervoor staat ten opzichte van andere financiële instellingen.

Beeld je nog steeds in dat je medewerker bent en de betreffende e-mail nu door leest. In de e-mail met het verzoek staat een link waar je op kunt klikken om deel te nemen aan het onderzoek. Als je dat doet word je doorgelinkt naar de online vragenlijst.

In de stellingen verwijst “dit onderzoek” naar de online vragenlijst die je in de mail gevraagd wordt in te vullen

(Antwoordschaal: 1 = helemaal niet van toepassing – 7 = helemaal wel van toepassing)

- Ik ben geïnteresseerd in deelname aan dit onderzoek
- Ik ben bereid deel te nemen aan dit onderzoek
- Ik ben gemotiveerd deel te nemen aan dit onderzoek
- Ik doe liever niet mee aan dit onderzoek **[omscoren]**

Appendix 6.0 - Demographic questionnaire

Nu volgen nog enkele demografische vragen.

Wat is je leeftijd?

[Open veld]

Wat is je geslacht?

- Man
- Vrouw
- Anders

Wat is je hoogst behaalde educatie?

- Basisonderwijs
- VMBO
- HAVO
- VWO
- Gymnasium
- MBO
- HBO
- WO
- WO-Master
- Anders

Wat is je huidige studie/beroep?

[Open veld]

Appendix 7.0 - Debriefing

Hartelijk dank voor je deelname aan dit onderzoek! We hopen dat je het leuk vond om deel te nemen. Deze pagina geeft achtergrondinformatie over het onderzoek en zal je inlichten over het werkelijke doel van het onderzoek.

Je hebt net deelgenomen aan een onderzoek uitgevoerd door masterstudenten van de opleiding Social, Health and Organisational Psychology van de Universiteit Utrecht.

Onderzoek in de sociale wetenschappen kan niet gedaan worden zonder participanten. Echter is het niet altijd even makkelijk om participanten te vinden en zijn er vele factoren die een rol spelen in de beslissing om mee te doen of niet. In dit onderzoek bestuderen we of de manier waarop de implicaties van de onderzoeksbevindingen zijn geformuleerd invloed hebben op het besluit deel te nemen. Dit hebben we gedaan door de implicaties te beschrijven in termen van warmte (de resultaten zeggen iets over de werksfeer en vertrouwen binnen het bedrijf) of competentie (de resultaten zeggen iets over prestaties en succes binnen het bedrijf). Ook gaan we na of het verschil maakt door welke specialisatie binnen psychologie het onderzoek wordt uitgevoerd. Je hebt daarom ofwel gelezen dat het onderzoek werd uitgevoerd door de afdeling Sociale Psychologie, de afdeling Organisatiepsychologie, of de afdeling Psychologie.

We vinden het belangrijk om te benadrukken dat de gegeven antwoorden niet worden beoordeeld op “goed” of “fout”, maar dat het doel was om te achterhalen welke factoren een rol spelen in de beslissing om te participeren in onderzoek. Om te voorkomen dat voorkennis de antwoorden zou beïnvloeden, hebben we van te voren niet alle details gegeven. Excuses hiervoor, maar we hopen op je begrip.

Zoals je weet, is jouw deelname aan deze studie vrijwillig. Alle gegevens die worden verzameld, zullen anoniem worden gebruikt voor onderzoek. Je hebt het recht om jouw onderzoeksgegevens te weerhouden van verdere verwerking. Dit betekent dat we jouw gegevens niet zullen gebruiken voor het onderzoek of anoniem zullen delen voor wetenschappelijke doeleinden.

Voor nu verwachten we meer deelnemers te werven. **Daarom zouden we je willen vragen om deze achtergrondinformatie niet te delen met anderen.** We vragen je dus om jouw kennis over deze studie vertrouwelijk te houden. Op de volgende pagina kun je de link vinden naar de externe vragenlijst voor de vergoedingen.

Als je nog vragen hebt over het onderzoek, dan kun je die nu, of later, stellen aan Rick Hendriks (r.a.hendriks@students.uu.nl)

Indien je niet wilt dat we jouw onderzoeksgegevens verwerken, kun je dat nu hieronder aangeven.

Appendix 8.0 - Power analysis

Op basis van de effect groottes van het interactie-effect uit het onderzoek van Brambilla et al. (partial eta-squared = .10; $f = .33$) en die uit studie 2 van het artikel van Dubois et al. (partial eta-squared = .09, $f = .31$) en een gewenste power van .80, geeft G*Power aan dat jullie respectievelijk zo'n 90 tot 101 deelnemers nodig hebben (in totaal, dus 15 à 17 deelnemers per conditie). Deze studies zijn volgens mij echter wel uitgevoerd in het lab en dus in een gecontroleerde omgeving. Jullie gaan een online survey afnemen en dat betekent dat er veel meer ruis is (mensen doen misschien meerdere dingen tegelijk, zijn minder geconcentreerd, etc.) en dat maakt de effecten hoogstwaarschijnlijk minder sterk. Daarnaast kijken jullie naar subtielere verschillen (niet naar 'psychologists' vs. 'engineers', maar naar 'social psychologists' vs. 'organizational psychologists'), waardoor ik ook verwacht dat de effecten kleiner zullen zijn. Ik heb daarom ook nog een power analyse gedaan op basis van een effectgrootte uit een meta-analyse van sociaal-psychologisch onderzoek (Richard, Bond Jr, & Stokes-Zoota, 2003. One hundred years of social psychology quantitatively described. Review of General Psychology, 7, 331-363), waaruit naar voren komt dat de gemiddelde effectgrootte in sociaal-psychologisch onderzoek $f = .225$ is. Met die effectgrootte komt de power analyse uit op een benodigde N van 194 deelnemers (in totaal, dus zo'n 32 of 33 per conditie). Uitgaande van alle drie de power analyses, stel ik daarom voor om in te zetten op zo'n 150 tot 180 deelnemers (in totaal, dus 25 à 30 deelnemers per conditie).

Masteronderzoek Psychologie



Voor de masteropleiding psychologie ben ik op zoek naar mensen die mij zouden willen helpen met mijn onderzoek. Dit onderzoek wordt via een online vragenlijst gedaan en duurt slechts 10 minuten. In dit onderzoek zul je gevraagd worden om je mening te geven over bepaalde beroepsgroepen.

Met deelname kun je kans maken op **1 van de 2 Nationale Bioscoopbonnen**. Daarnaast is het een leuke afwisseling tijdens het thuiszitten!

Gebruik de QR-Code of de onderstaande link om deel te nemen! Kan ook op mobiel!

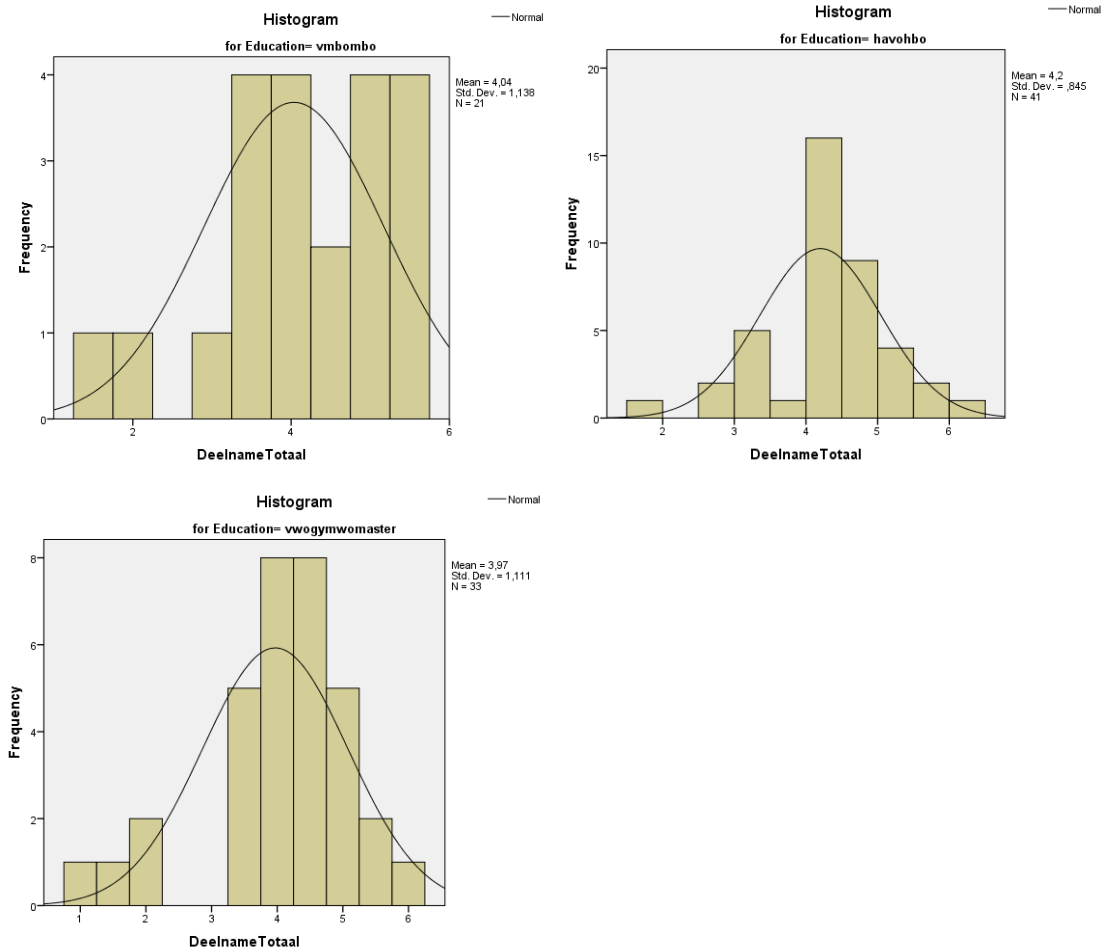


https://survey.uu.nl/jfe/form/SV_9KV6VKxg90GPI0J

Appendix 10.0 - Assumption check (by order of analyses done)

Assumptions educational level ANOVA on willingness to participate

Normal distribution check



Tests of Normality

Education level		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
DeelnameTotaal	vmbombo	,135	21	,200 [*]	,930	21	,138
	havohbo	,186	41	,001	,960	41	,161
	vwogymwomaster	,185	33	,006	,886	33	,002

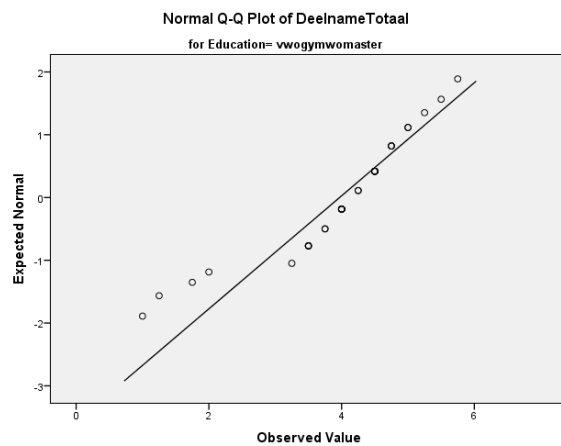
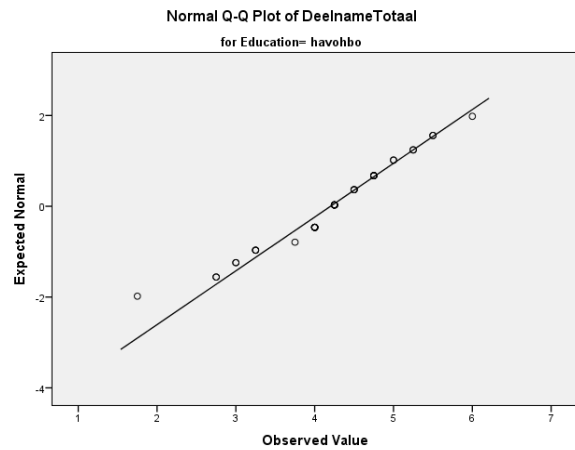
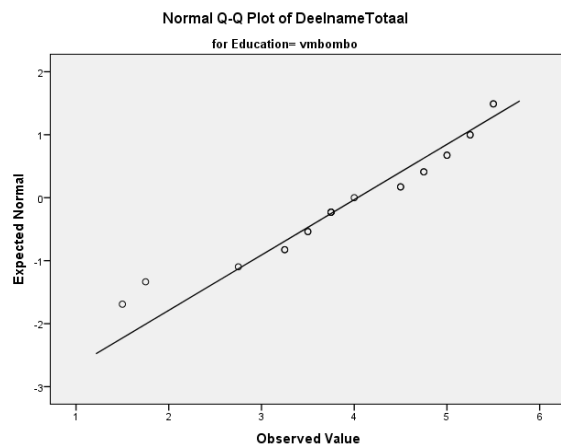
Homogeneity check

Test of Homogeneity of Variances

DeelnameTotaal

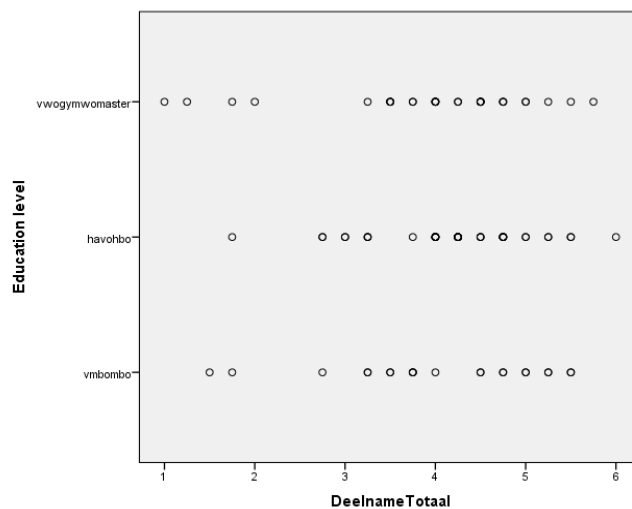
Levene Statistic	df1	df2	Sig.
1,527	2	92	,223

Outlier check



Assumptions educational level linear regression on willingness to participate

Linear relationship check



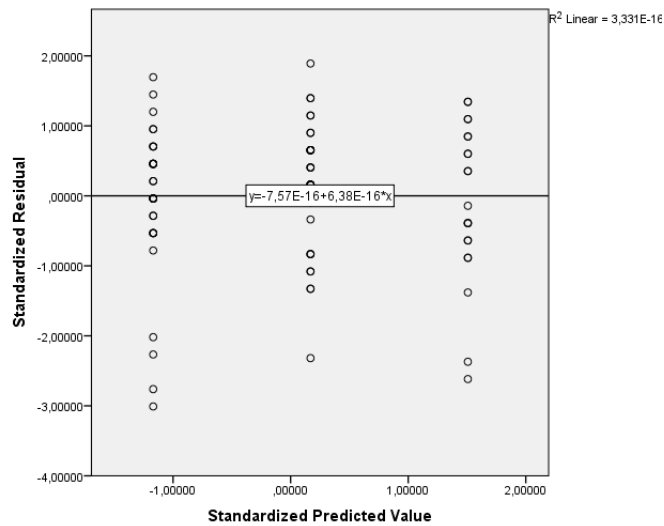
Outlier check

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	4,04	4,14	4,08	,039	95
Std. Predicted Value	-1,169	1,507	,000	1,000	95
Standard Error of Predicted Value	,105	,188	,142	,034	95
Adjusted Predicted Value	3,99	4,24	4,09	,048	95
Residual	-3,038	1,909	,000	1,004	95
Std. Residual	-3,009	1,891	,000	,995	95
Stud. Residual	-3,048	1,901	,000	1,007	95
Deleted Residual	-3,116	1,930	-,001	1,028	95
Stud. Deleted Residual	-3,195	1,929	-,006	1,024	95
Mahal. Distance	,029	2,272	,989	,906	95
Cook's Distance	,000	,128	,012	,024	95
Centered Leverage Value	,000	,024	,011	,010	95

a. Dependent Variable: DeelnameTotaal

Homoscedasticity check



Collinearity check

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4,196	,314		13,366	,000		
	Education level	-,053	,139	-,039	-,377	,707	1,000	1,000

a. Dependent Variable: DeelnameTotaal

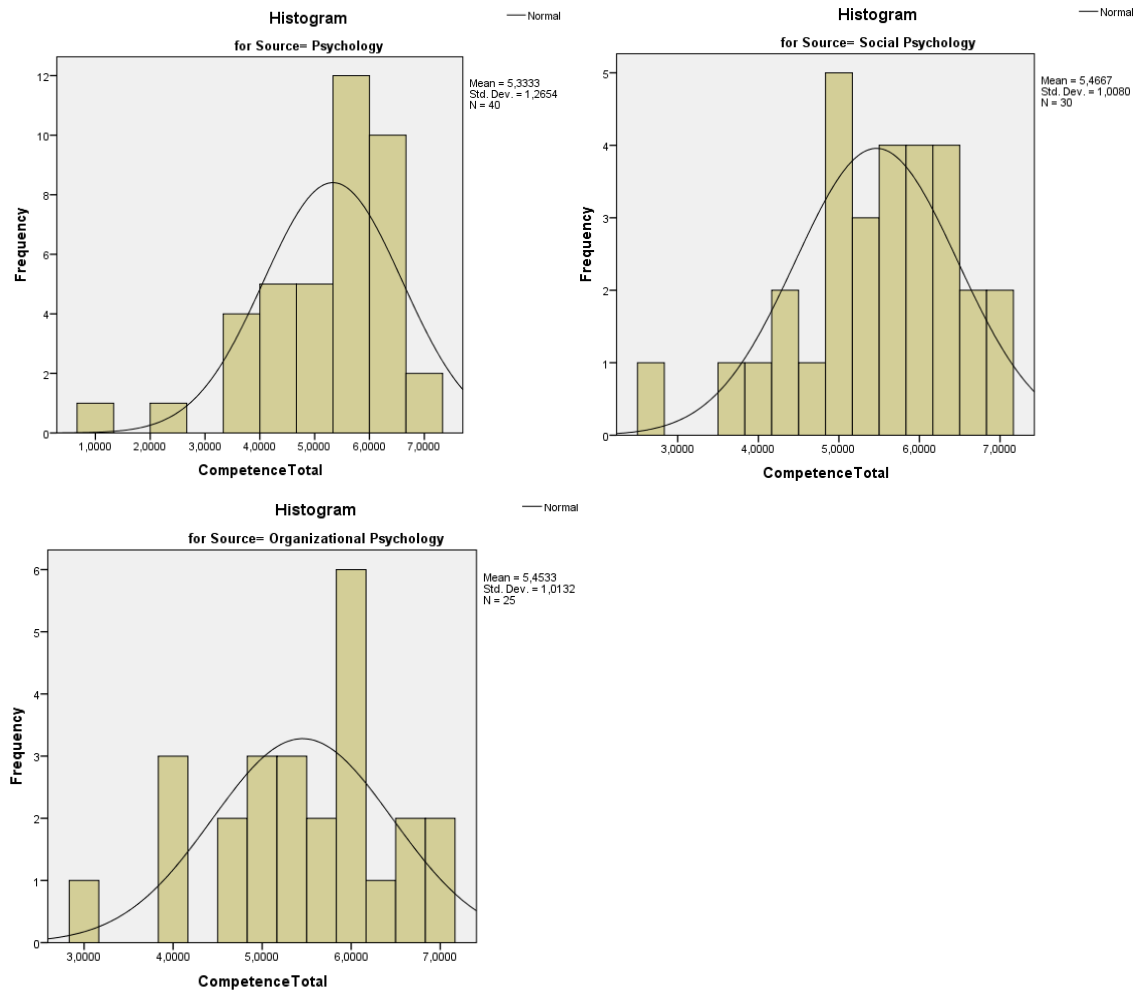
Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	Education level
1	1	1,944	1,000	,03	,03
	2	,056	5,891	,97	,97

a. Dependent Variable: DeelnameTotaal

Assumptions Source check - source ANOVA on competence

Normal distribution check



Tests of Normality

Soort source		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
CompetenceTotal	Psychology	,151	40	,022	,898	40	,002
	Social Psychology	,122	30	,200 [*]	,955	30	,225
	Organizational Psychology	,145	25	,184	,955	25	,330

Homogeneity check

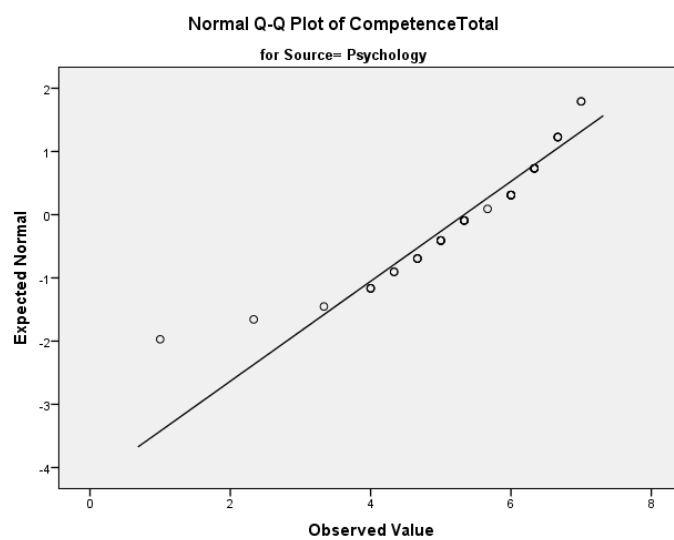
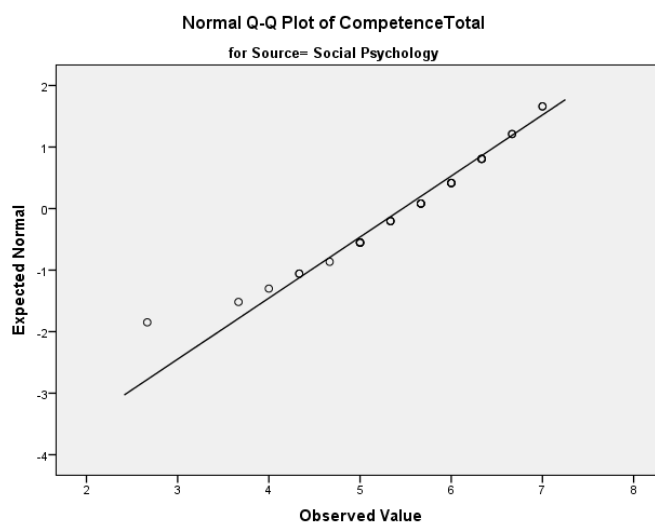
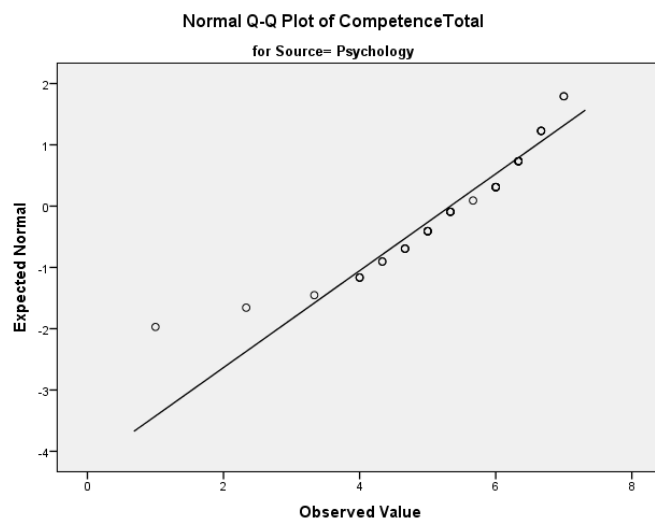
Levene's Test of Equality of Error Variances^a

Dependent Variable: CompetenceTotal

F	df1	df2	Sig.
,540	2	92	,585

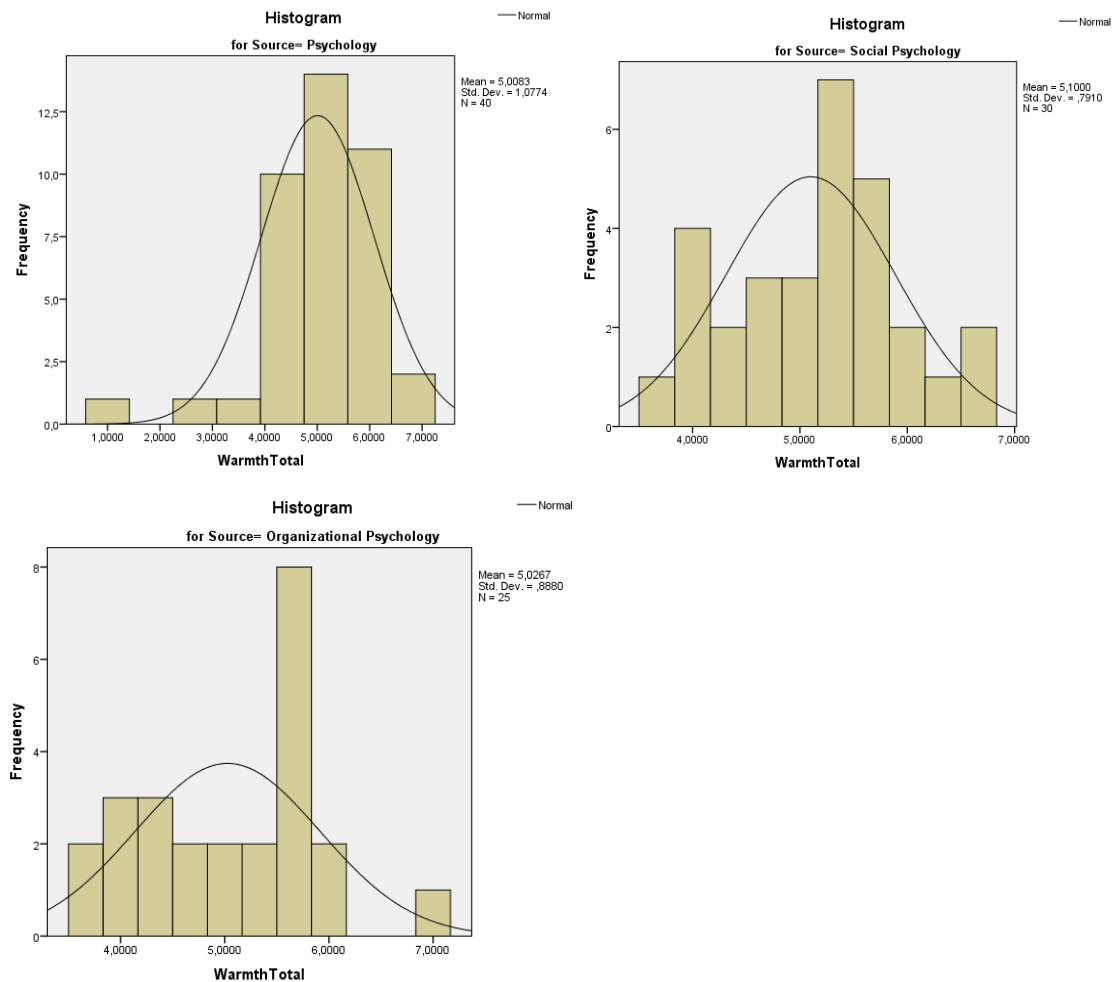
Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

Outlier check



Assumptions Source check - source ANOVA on warmth

Normal distribution check



Tests of Normality

Soort source		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
WarmthTotal	Psychology	,129	40	,093	,896	40	,001
	Social Psychology	,116	30	,200 [*]	,961	30	,334
	Organizational Psychology	,154	25	,131	,940	25	,148

Homogeneity check

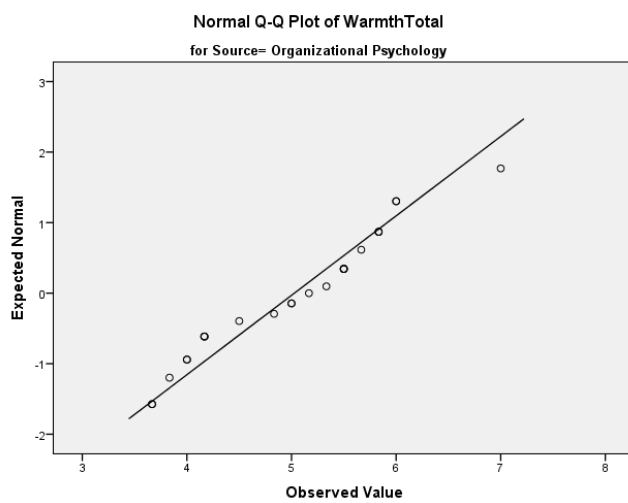
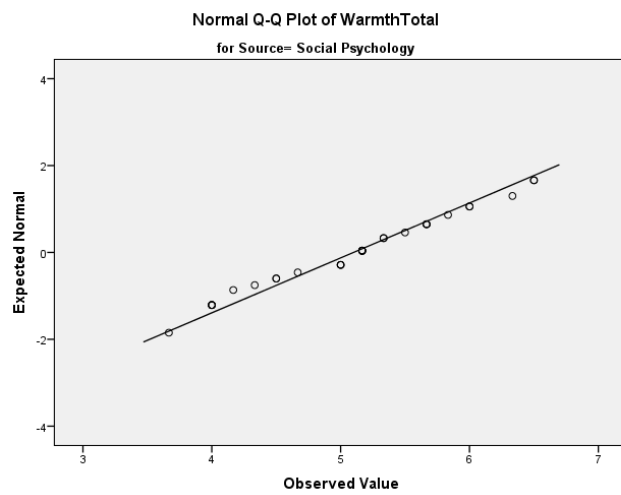
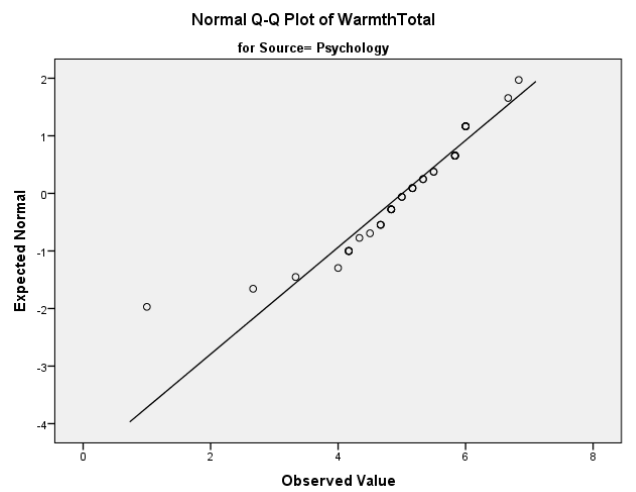
Levene's Test of Equality of Error Variances^a

Dependent Variable: WarmthTotal

F	df1	df2	Sig.
,530	2	92	,590

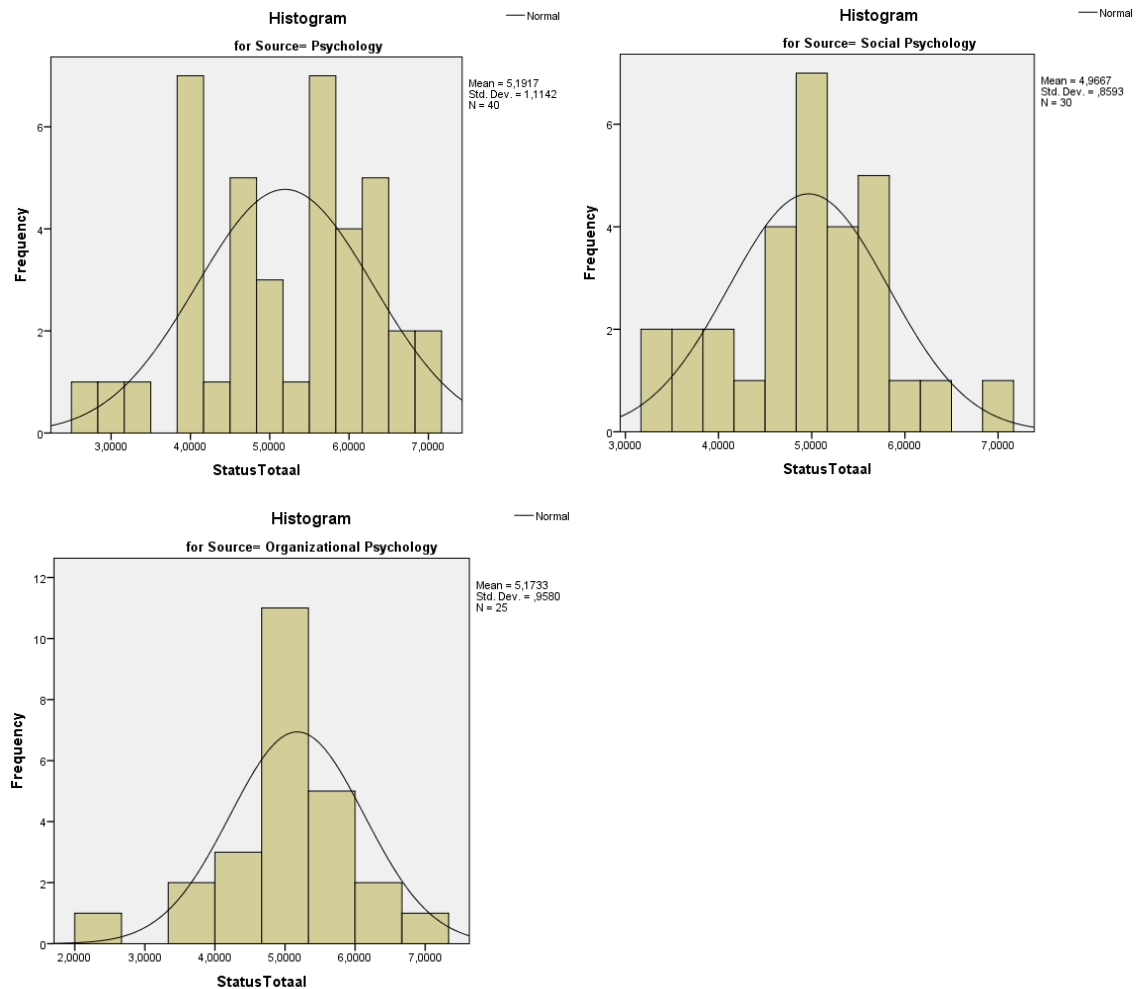
Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

Outlier check



Assumptions Source check - source ANOVA on social status

Normal distribution check



Tests of Normality

Soort source		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
StatusTotaal	Psychology	,165	40	,008	,955	40	,115
	Social Psychology	,149	30	,088	,963	30	,368
	Organizational Psychology	,166	25	,073	,939	25	,137

Homogeneity check

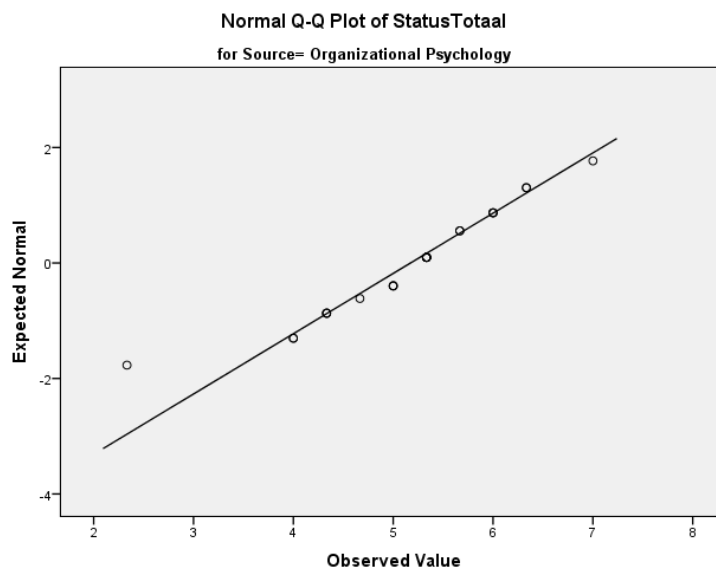
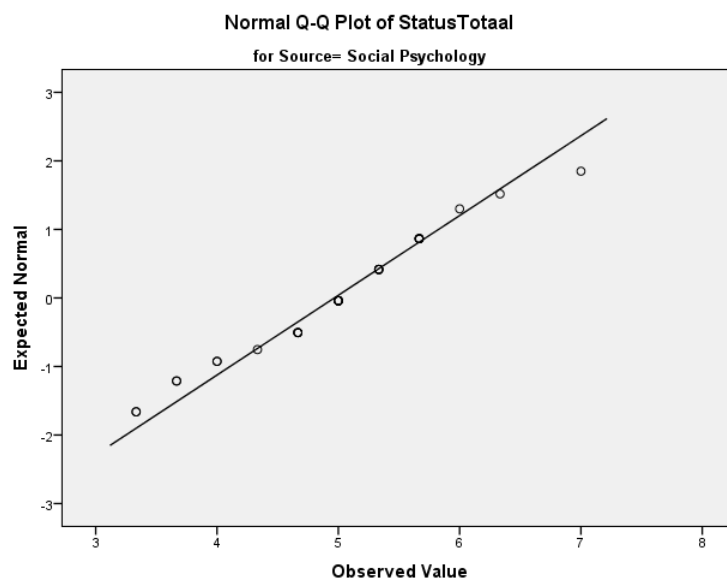
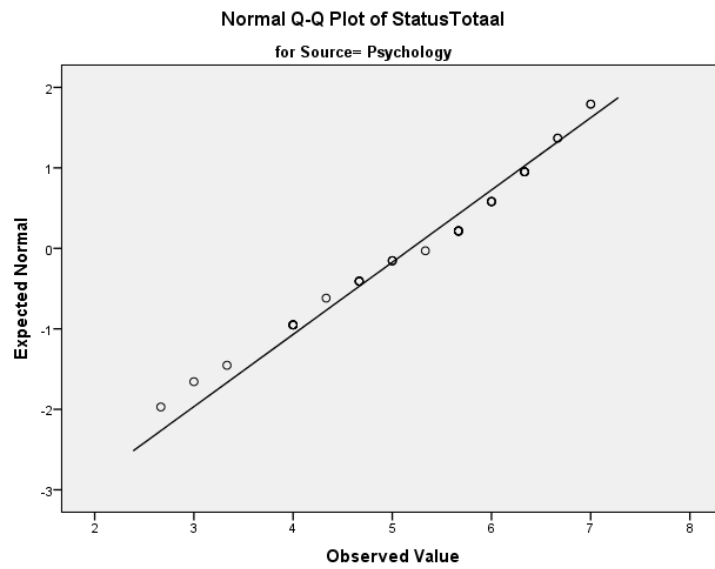
Levene's Test of Equality of Error Variances^a

Dependent Variable: StatusTotaal

F	df1	df2	Sig.
2,751	2	92	,069

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

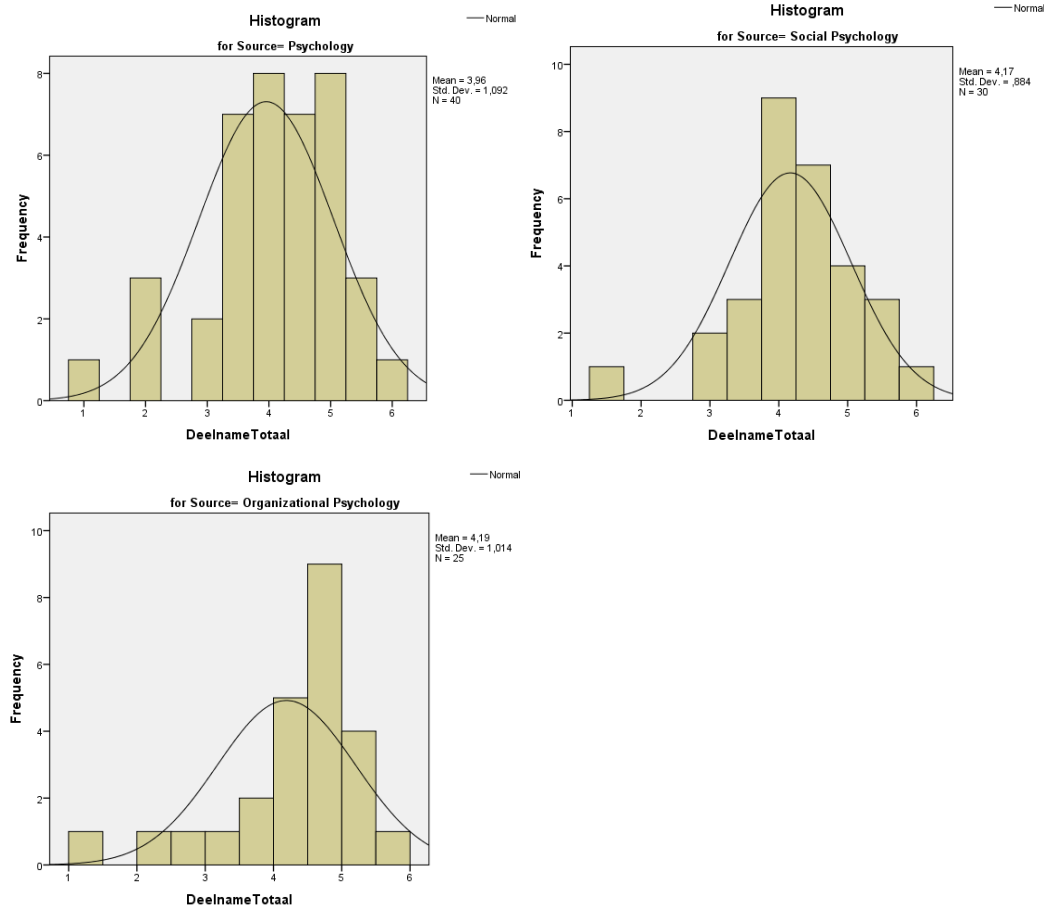
Outlier check



Assumptions Source and framing on willingness to participate

Source ANOVA on willingness to participate

Normal distribution check



Tests of Normality

Soort source		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
DeelnameTotaal	Psychology	,141	40	,044	,946	40	,057
	Social Psychology	,125	30	,200 [*]	,955	30	,231
	Organizational Psychology	,186	25	,026	,875	25	,005

Homogeneity check

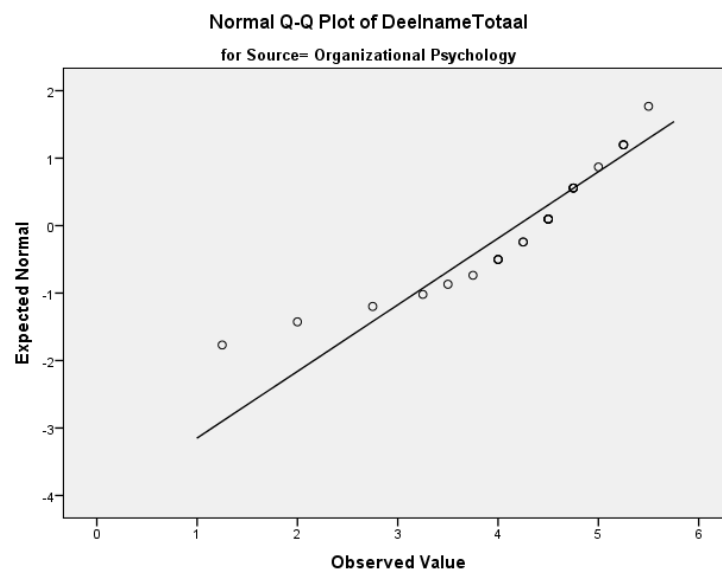
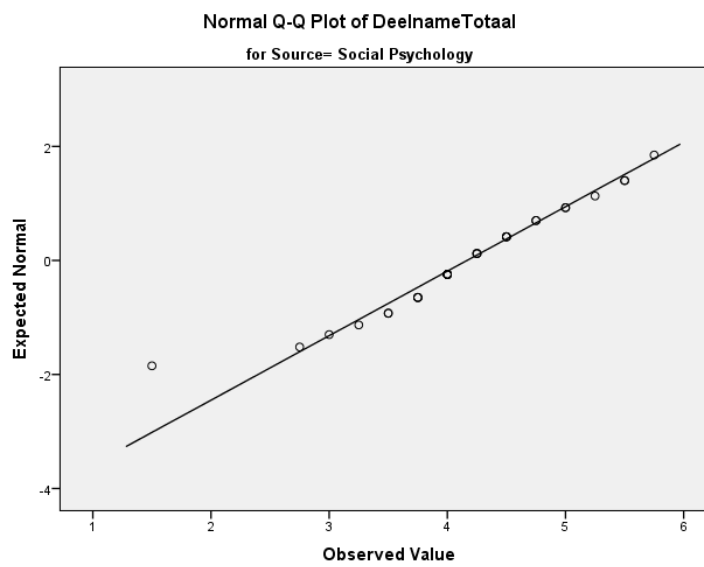
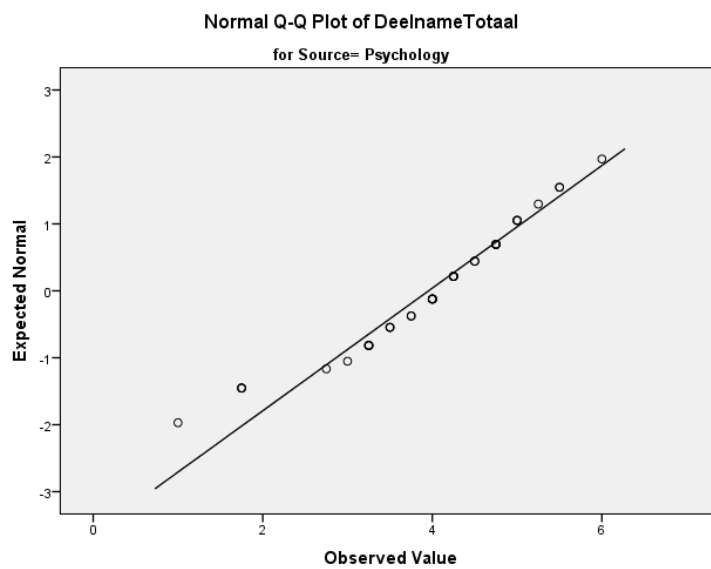
Levene's Test of Equality of Error Variances^a

Dependent Variable: DeelnameTotaal

F	df1	df2	Sig.
,541	2	92	,584

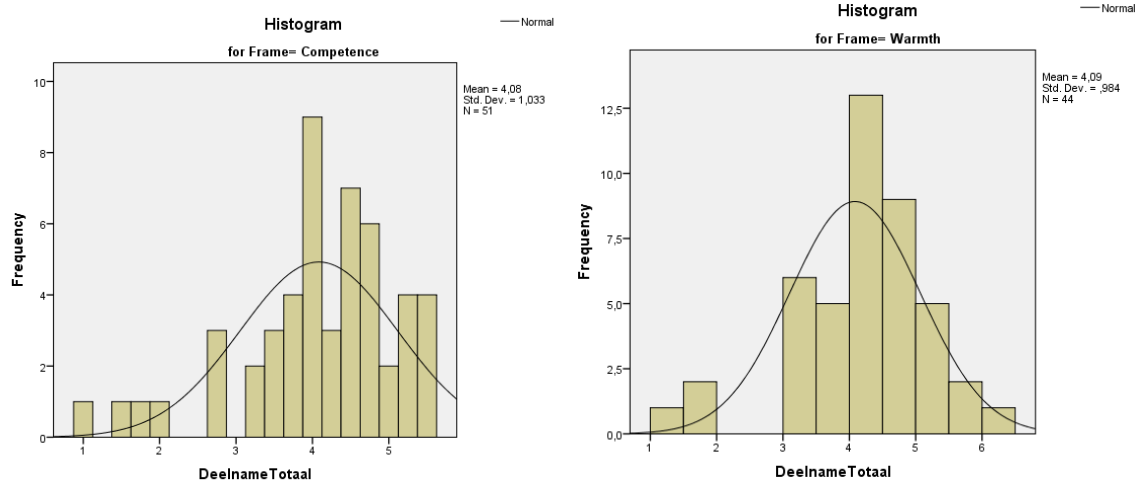
Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

Outlier check



Frame ANOVA on willingness to participate

Normal distribution check



Tests of Normality

Soort frame findings		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
DeelnameTotaal	Warmth	,147	44	,018	,942	44	,029
	Competence	,154	51	,004	,917	51	,002

Homogeneity check

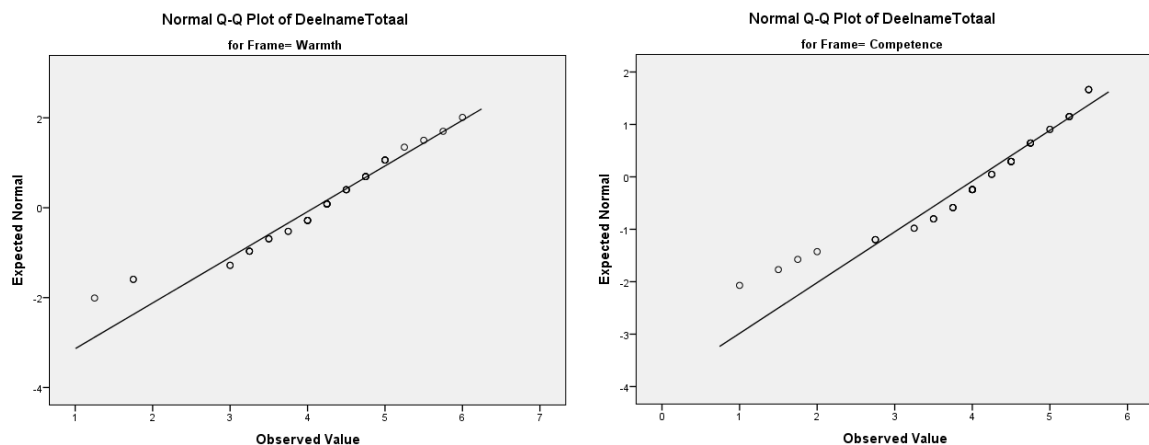
Levene's Test of Equality of Error Variances^a

Dependent Variable: DeelnameTotaal

F	df1	df2	Sig.
,096	1	93	,757

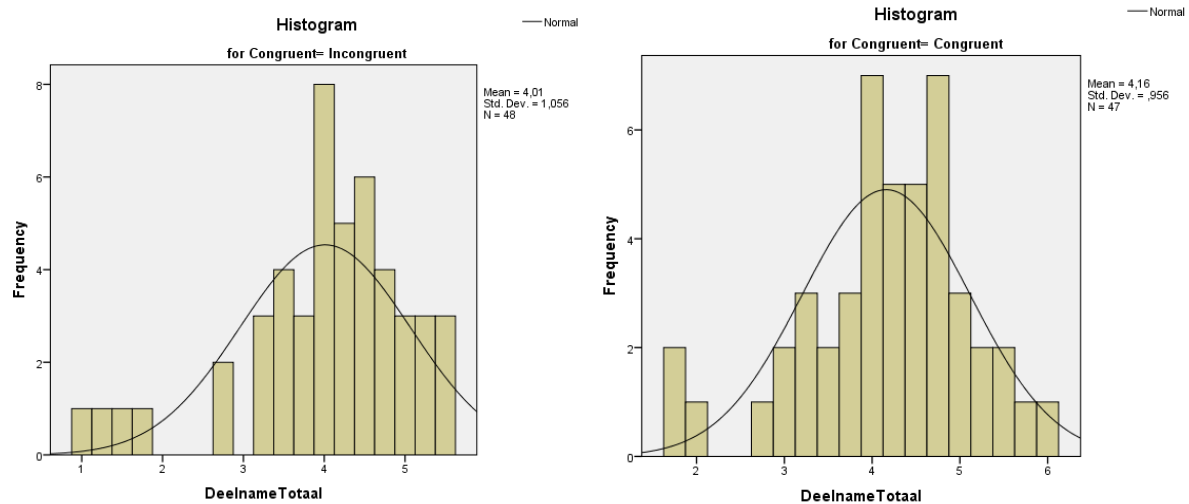
Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

Outlier check



Congruence ANOVA on willingness to participate

Normal distribution check



Tests of Normality

		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
DeelnameTotaal	Congruent	,136	47	,030	,957	47	,080
	Incongruent	,163	48	,003	,904	48	,001

Homogeneity check

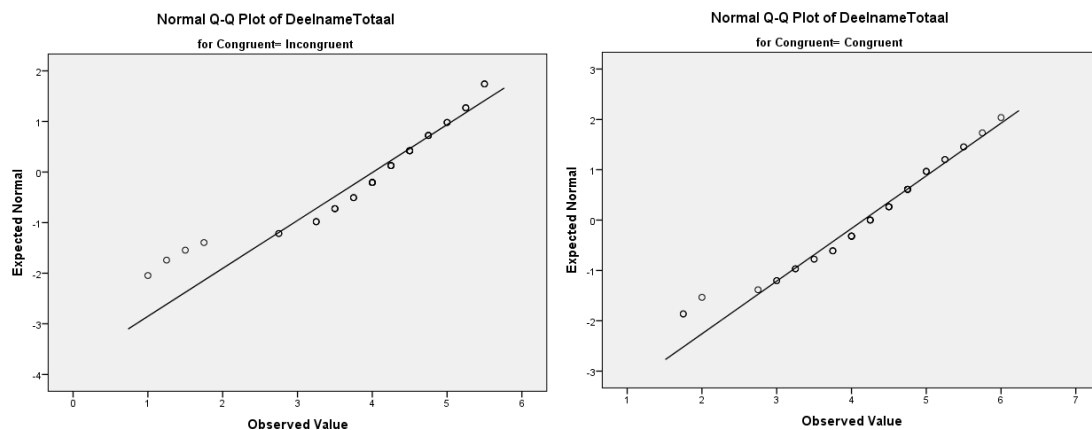
Levene's Test of Equality of Error Variances^a

Dependent Variable: DeelnameTotaal

F	df1	df2	Sig.
,057	1	93	,813

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

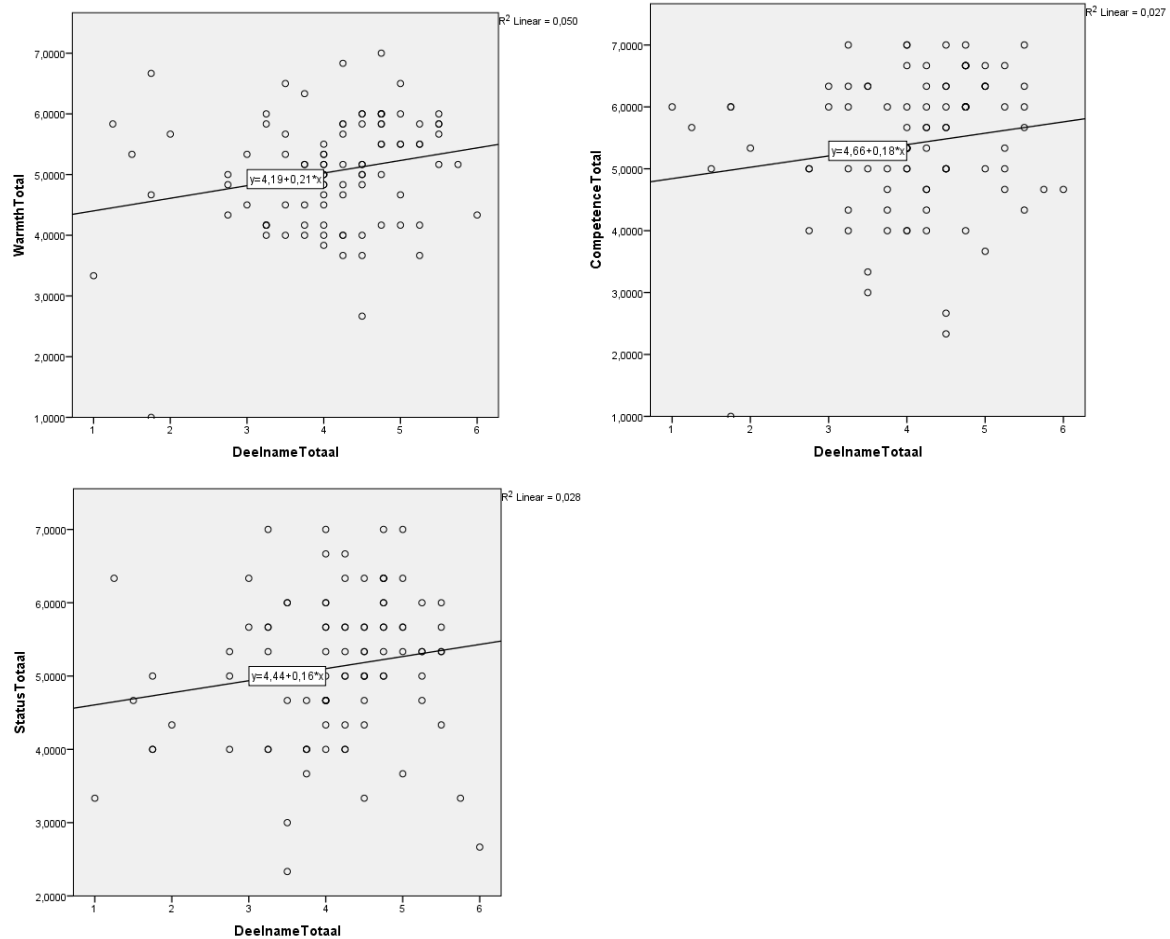
Outlier check



Assumptions Mediation by perception of warmth, competence and social status

- Multiple regression analysis

Linear relationship check



Outlier check

Competence

Residuals Statistics ^a					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3,43	4,32	4,08	,166	95
Std. Predicted Value	-3,951	1,428	,000	1,000	95
Standard Error of Predicted Value	,102	,419	,137	,046	95
Adjusted Predicted Value	3,54	4,36	4,09	,160	95
Residual	-3,173	2,026	,000	,991	95
Std. Residual	-3,183	2,033	,000	,995	95
Stud. Residual	-3,205	2,049	-,001	1,006	95
Deleted Residual	-3,216	2,057	-,001	1,014	95
Stud. Deleted Residual	-3,380	2,085	-,006	1,025	95
Mahal. Distance	,004	15,613	,989	1,934	95
Cook's Distance	,000	,369	,012	,039	95
Centered Leverage Value	,000	,166	,011	,021	95

a. Dependent Variable: DeelnameTotaal

Warmth

Residuals Statistics ^a					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3,12	4,55	4,08	,224	95
Std. Predicted Value	-4,315	2,090	,000	1,000	95
Standard Error of Predicted Value	,101	,450	,135	,046	95
Adjusted Predicted Value	3,43	4,59	4,09	,215	95
Residual	-3,023	2,085	,000	,980	95
Std. Residual	-3,069	2,117	,000	,995	95
Stud. Residual	-3,097	2,134	-,002	1,008	95
Deleted Residual	-3,079	2,120	-,004	1,007	95
Stud. Deleted Residual	-3,253	2,177	-,007	1,027	95
Mahal. Distance	,002	18,617	,989	2,098	95
Cook's Distance	,000	,321	,014	,043	95
Centered Leverage Value	,000	,198	,011	,022	95

a. Dependent Variable: DeelnameTotaal

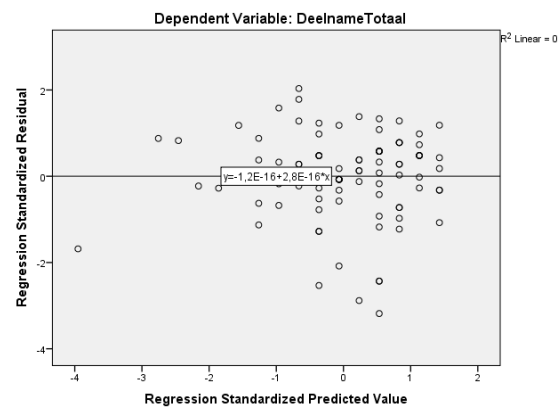
Status

Residuals Statistics ^a					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3,61	4,40	4,08	,168	95
Std. Predicted Value	-2,800	1,896	,000	1,000	95
Standard Error of Predicted Value	,103	,305	,139	,041	95
Adjusted Predicted Value	3,48	4,46	4,08	,174	95
Residual	-3,040	2,329	,000	,991	95
Std. Residual	-3,051	2,338	,000	,995	95
Stud. Residual	-3,092	2,431	,000	1,008	95
Deleted Residual	-3,122	2,518	,000	1,017	95
Stud. Deleted Residual	-3,247	2,498	-,004	1,026	95
Mahal. Distance	,014	7,839	,989	1,359	95
Cook's Distance	,000	,240	,013	,036	95
Centered Leverage Value	,000	,083	,011	,014	95

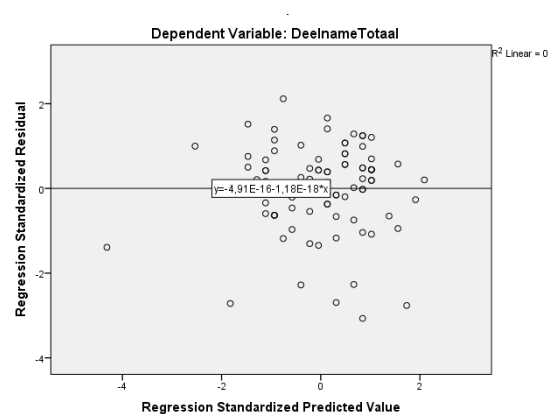
a. Dependent Variable: DeelnameTotaal

Homoscedasticity check

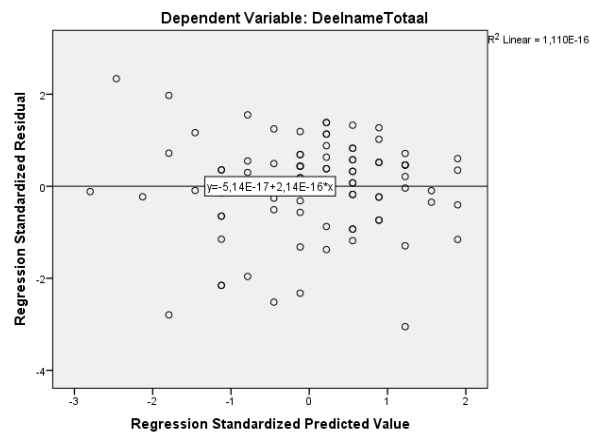
Competence



Warmth



Status



Collinearity check

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3,279	,509		6,446	,000		
	CompetenceTotal	,149	,092	,165	1,616	,110	1,000	1,000

a. Dependent Variable: DeelnameTotaal

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	Competence Total
1	1	1,980	1,000	,01	,01
	2	,020	9,849	,99	,99

a. Dependent Variable: DeelnameTotaal

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2,880	,556		5,179	,000		
	WarmthTotal	,239	,108	,223	2,202	,030	1,000	1,000

a. Dependent Variable: DeelnameTotaal

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	WarmthTotal
1	1	1,983	1,000	,01	,01
	2	,017	10,913	,99	,99

a. Dependent Variable: DeelnameTotaal

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3,221	,539		5,979	,000		
	StatusTotaal	,169	,103	,167	1,631	,106	1,000	1,000

a. Dependent Variable: DeelnameTotaal

Collinearity Diagnostics^a

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	StatusTotaal
1	1	1,982	1,000	,01	,01
	2	,018	10,446	,99	,99

a. Dependent Variable: DeelnameTotaal