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Published online: 25 Jun 2021.

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Internal and external motivation to respond without prejudice: a person-centered approach

Kim Bamberg and Maykel Verkuyten (ID)

Utrecht University

ABSTRACT

With a person-centered approach, the constellations of internal motivation and external motivation to respond without prejudice within individuals are examined, and how these relate to directly and indirectly reported levels of prejudice. Using latent profile analysis, we identified four subgroups of motivated individuals among large national samples of majority members in Germany (N = 1745) and in the Netherlands (*N* = 1645). With one exception, these subgroups differed in the proportion of prejudiced individuals as well as the average level of self-reported prejudice. Our findings make a contribution to the literature by highlighting the importance of considering how internal and external motivations are organized within individuals for understanding their prejudicial responses.

There is a very large social psychological literature on prejudice in which various forms of negative out-group attitudes and various causes and correlates are examined (see Brown, 2010; Dovidio et al., 2010). There are different theoretical perspectives and models for studying prejudice ranging from implicit mental processes to social structural conditions (see Dixon & Levine, 2012). Social psychological research has also examined factors that moderate the release or suppression of prejudice. For example, work on aversive racism (Dovidio & Gaertner, 2004) argues that the desire to appear unprejudiced together with the experience of outgroup discomfort and fear leads people to discriminate only when their behavior is easily rationalized (see also McConahay, 1986). The justification-suppression model suggests that people simultaneously hold negative outgroup beliefs, egalitarian values, and endorse social norms that suppress the expression of these negative beliefs (Crandall & Eshelman, 2003). Further, the self-regulation of prejudice model argues that people do not only rationalize their prejudices but also use external normative and internal moral standards that make them motivated to respond without prejudice toward minority groups (Bodenhausen et al., 2009; Monteith et al., 2010; Plant & Devine, 1998). External motivation to respond without prejudice stems from a fear of the negative social consequences of appearing prejudiced, whereas internal motivation to respond without prejudice derives from a personal dedication to egalitarianism. These two motivations tend to be relatively independent (Plant & Devine, 1998), so that both motivations, neither of the two, or only one motivation can underlie a person's attitude and behavior toward minority group members.

However, similar to most domains in social psychology, existing research on people's motivations to respond without prejudice uses a variable-centered approach to assess individual difference in both motivations and how these are associated. The aim of the current study is to make a new contribution to the literature by using a person-centered approach which offers a different way of thinking about the interplay of various motivations within individuals (Bergman & Magnussen, 1997; Osborne & Sibley, 2017). In this approach, the unit of analysis is the person and it is examined whether there are distinct

subgroups of individuals with different constellations of internal and external motivations to respond without prejudice. This allows to empirically examine different types of behavior regulation that are proposed by self-determination theory (SDT; Deci & Ryan, 1985, 2002). The result is a more detailed understanding of how particular combinations of both motivations simultaneously occur within individuals, and how these relate to minority group prejudices.

We used data from a large-scale study among majority samples from Germany and the Netherlands which allows us to examine whether, and how many, majority members have specific patterns of internal and external motivation to respond without prejudice and whether these patterns generalize across the two national samples. Furthermore, as a matter of construct validity and by using indirect (unmatched count technique) and direct (self-reporting) measures, we consider whether different levels of prejudice toward migrants characterize the different motivated subgroups of individuals.

Person-centered approach

Social psychological research typically investigates associations between variables, such as between internal and external motivation to respond without prejudice and their relations with outgroup attitudes, discriminatory behavior and intergroup interactions (e.g., LaCosse & Plant, 2019; Plant & Devine, 1998). Furthermore, respondents' scores on both motivations to respond without prejudice are considered simultaneously for categorizing individuals, for example, based on whether they score within the top or bottom 30% of the two motivation scales, or by using median splits (Butz & Plant, 2009; Devine et al., 2002; Plant & Devine, 2009; Plant et al., 2003).

However, these methods might lead to a considerable loss of information and, in some cases, even to spurious effects (MacCallum et al., 2002). Other studies try to avoid these limitations by computing statistical interactions between the continuous measures of internal and external motivation to respond without prejudice (Costarelli & Gerłowska, 2015; Monteith et al., 2010). However, statistical interactions between both motivations imply a focus on differences *between* individuals and do not allow to assess how configurations of internal and external motivations are organized *within* individuals.

While variable-centered analyses, which dominate the field, have been extremely useful in their own right, a person-centered approach can make an additional contribution to social psychological research (Osborne & Sibley, 2017), and has found to be useful in investigating prejudicial attitudes toward minority and stigmatized out-groups (e.g., Agadullina, Lovakov & Malysheva, 2018; Adelman & Verkuyten, 2020; Dangubic et al., 2021; Loch et al., 2013; Meeusen et al., 2018; Sibley & Becker, 2012; Sibley & Liu, 2013). Latent profile analysis is a person-centered approach that seeks to identify unobserved subgroups of individuals who qualitatively differ in the particular ways in which they combine, for example, their motivations to respond without prejudice. This approach does not focus on individual differences on measured constructs but rather on how configurations of motivations and attitudes are organized within distinct types of people (Osborne & Sibley, 2017). Thus, in contrast to using unidimensional additive scales and examining relations between variables, this approach seeks to identify unobserved subgroups of individuals that differ in particular ways in which they combine, for example, different motivations and prejudicial attitudes. For example, in four large samples from the Netherlands, Adelman and Verkuyten (2020) examined general feelings toward Muslim minorities and the acceptance of a range of Muslim practices. Latent profile analysis showed that the best model for the data required four profiles of individuals rather than a continuum of Muslim prejudice. In addition to a positive and a negative subgroup, there were two subgroups who did not accept certain practices without necessarily having negative feelings toward Muslims. These four subgroups represented four latent profiles of attitudes toward Muslim minorities rather than a monotonic change on a unidimensional positive-negative continuum.

Thus, a person-centered approach allows researchers to investigate whether the internal and external motivation to respond without prejudice are combined in different ways within individuals reflected in distinct latent profiles, which is suggested by self-determination theory (Deci & Ryan,

1985, 2002). This makes it possible to examine whether, and how many, majority members within a population are motivated by both a personal dedication to egalitarianism and fear of negative social consequences; are motivated by neither of the two sources; or are only or mainly motivated by egalitarianism or rather by a fear of negative social consequences.

Possible latent profiles

Several studies draw on self-determination theory to gain a better understanding of people's motivations to respond without prejudice (Amodio et al., 2003; Butz & Plant, 2009; Devine et al., 2002; Legault et al., 2009, 2007). A central claim of SDT is that individuals' intention to act according to a particular value or goal will increase with the internalization of that value or goal and hence the degree to which it is self-determined.

SDT identifies six styles of behavior regulation, and for internal and external motivations to respond without prejudice a corresponding distinction between six types has been proposed (Legault et al., 2007). However, research in different domains (educational, work, sports) and in relation to outgroup attitudes and tolerance have typically identified four rather than six profiles (e.g., Adelman & Verkuyten, 2020; Howard et al., 2016; McCutcheon, 1985). A combination of the internal and external motivation to respond without prejudice logically suggests four possible subgroups and there are reasons to assume that these are substantially meaningful subgroups of individuals that exist within the majority population. A first type of behavior regulation that is considered in SDT is the so-called "amotivation" which is likely to be found if people feel incapable to pursue a certain

behavior or do not value its outcomes. With regard to motivations to respond without prejudice, amotivation might characterize individuals who are not interested in responding in an unprejudiced way (see Legault et al., 2007) because they are not dedicated to egalitarianism and also do not fear negative social consequences of appearing prejudiced. Thus, these people are likely to be characterized by relatively *low internal and low external motivations* to respond without prejudice ("*equally unmotivated*").

"External regulation" refers in SDT to a behavior regulation style that primarily serves social demands and is instrumental in avoiding negative social consequences (Deci & Ryan, 2002). This form of regulation is likely to be found among individuals that suppress prejudiced responses because they fear negative social consequences of non-normative behavior and want to maintain a favorable impression (Legault et al., 2007). Hence, these individuals are likely to have a *low internal and high external motivation* to respond without prejudice (*"predominantly externally motivated"*).

On the self-determination continuum, "external regulation" is followed by "introjected regulation" which implies a higher level of internalization. External normative standards have been internalized but possible negative social consequences remain relevant (Deci & Ryan, 2002). For responding without prejudice, this behavior regulation style might imply that individuals are dedicated to egalitarianism but also take possible negative social consequences into account. Therefore, these individuals might simultaneously hold *moderate/high internal and moderate/high external motivations* to respond without prejudice (*"equally motivated"*).

The fourth possible profile follows from SDT's "identified regulation style" that represents the point at which externally motivated behavior becomes primarily self-determined (Deci & Ryan, 2002). This style refers to a high level of internalization and hence to behavior that is based on goals and values that are personally important. For these individuals, responding without prejudice is motivated by a personal dedication to egalitarianism rather than a fear of negative social consequences of appearing prejudice (Devine et al., 2002; see Legault et al., 2007). A profile of *high internal and low external motivations* to respond without prejudice might characterize this subgroup of individuals (*"predominantly internally motivated"*).

Profiles and prejudice

Beyond identifying subgroups of individuals among the majority population in two countries, we examined whether the different subgroups differ in their indirectly (unobtrusive) and directly (self-reported) measured prejudice toward migrants. This is important to examine as a matter of construct validity of the possible motivation profiles.

Research has found that individuals with both low internal and low external motivations to respond without prejudice tend to invest little time in trying to reduce easily detectable or rather undetectable expressions of prejudice (Plant & Devine, 1998). Thus, it is likely that the "equally unmotivated" individuals express the highest prejudice compared to the other subgroups of individuals.

The group of "predominantly externally motivated" individuals is more concerned about negative social consequences of appearing prejudiced and therefore more likely to respond in a socially desirable way when anonymity is not sufficiently guaranteed (Plant & Devine, 1998; Plant et al., 2003). This might mean that this subgroup will express relatively lower levels of prejudice but only if there are possible negative social consequences.

The third expected subgroup consists of "equally motivated" individuals. Even though egalitarian values have been internalized, the responses of this subgroup are assumed to also be influenced by social pressures to conform to normative standards (Devine et al., 2002). Therefore, it is likely that this subgroup is characterized by moderate levels of prejudice.

The reactions of the subgroup of "predominantly internally motivated" individuals should be driven primarily by the personal, internalized dedication to egalitarianism. In agreement with this, research has demonstrated that these individuals consistently report low levels of prejudice across conditions that vary in their level of privacy (Plant et al., 2003). Thus, this subgroup should be characterized by relatively low levels of prejudice.

The data that we used contain an indirect measure as well as a direct self-report measure of prejudice toward migrants which allows us to examine the pattern of findings across different measures. The indirect measure involved the so-called unmatched count-technique (UCT; Kuklinski et al., 1997) which relies on a comparison of base rate responses across two conditions: a baseline condition with a list of social issues and a sensitive condition in which one sensitive item (e.g., migrants) is added to the list. In both conditions people are not asked to list which items they are concerned about but rather to indicate the total number of items they are concerned about. The UCT has been found to yield higher levels of prejudice compared to direct measures (Brown-Iannuzzi et al., 2019; Creighton et al., 2019; Rayburn et al., 2003; Sniderman & Hagendoorn, 2007). This higher level of prejudice has been interpreted in terms of the UCT circumventing socially desirable reponding that could affect direct self-report measures. This could mean that especially the group of predominantly externally motivated individuals will demonstrate a difference in their direct and indirect prejudices, whereas this should not be the case for the predominantly internally motivated individuals.

However, social desirability concerns are only raised when one's unfavorable responses are, or will be, known to others. When answering questions completely anonymously and online, there is no incentive to present oneself in socially desirable ways, and this leads to reporting more socially undesirable attributes compared to when self-identifying information is provided (Lautenschlager & Flaherty, 1990; Paulus, 1984). The provision of complete anonymity minimizes social desirability pressures on self-report measures (Stark et al., 2019). The questionnaire data used in the current study were collected via existing online panels and the participants in these panels know from experience that their answers will be completely anonymous. This would mean that the pattern of responses on the indirect and direct measures can be expected to be similar among the different subgroups of internally and externally motivated individuals to respond without prejudice. However, to assess whether the research did indeed eliminate social desirability concerns, we also presented a random half of the sample with a reminder of their complete anonymity immediately before the direct prejudice measure.

Complete anonymity does not only minimize social desirable responding but can also decrease participants' motivation to respond carefully and thoughtfully (Lelkes et al., 2012). The reason is that anonymity removes any sense of accountability for one's answers and thereby the level of cognitive engagement which can result in heuristic over-reporting of socially undesirable attributes (Krosnick, 1999). In that case, we might find a difference in the pattern of responses on our indirect and direct measures of prejudice, and especially among respondents who have a high external motivation to respond without prejudice. The anonymity eliminates their sense of accountability to others leading to taking cognitive shortcuts and more superficial responses. This can result in different findings for prejudice measures that use different formats which might trigger different shortcuts. In contrast, those with high internal motivation to respond without prejudice want to live up to their personal dedication to egalitarianism and therefore should not be affected by a reduced sense of accountability.

Method

Participants

In May and June 2019, potential participants in Germany and the Netherlands were sent an e-mail invite to take part in the "Research about social changes" and an anonymous survey was carried out by Kantar[1] (see Appendix 1). In the Netherlands, potential respondents were selected from the Kantar consumer panel for fieldwork in the Netherlands.[2] From this panel, a representative sample of the Dutch population aged 18 years and older was compiled via a stratification procedure based on the characteristics of gender, age, education, household size and region. Only respondents with two ethnic Dutch parents received an invitation to complete the questionnaire, with a maximum of one respondent per household. The population data for the mentioned selection criteria was derived from the annual report of the Central Bureau for Statistics in the Netherlands. In Germany, population data was derived from the MiniCensus[3] and used to compile a representative sample of the German population aged 18 years and older via a stratification procedure based on the characteristics of age, gender and education. Similar as for the Dutch sample, only respondents with two ethnic German parents were invited to complete the survey. This preliminary selection led to a total sample of 3762 participants. It took participants on average 24 minutes to fill out the questionnaire. Respondents were removed from the original sample if they completed the survey two or more times quicker than the average response time (Leiner, 2019). This was the case for 9.9% ($N = 372$) of the sample.[4] None of the remaining respondents had missing values on the variables of interest for the current analysis and the resulting analytical sample comprises a total of 3390 respondents. This sample consists of 48.5% ($N= 1.645$) Dutch and 51.5% ($N= 1.745$) German respondents. Participants' age ranged from 18 to 100 years ($M = 51.95$, $SD = 16.35$) and 50.2% ($n= 1702$) were women.

As is common with these large-scale, cross-country data collections, a multidisciplinary team was involved which resulted in various topics being examined, such as attitudes toward child-rearing practices, secularism, slippery slope thinking, and the evaluation of societal protest actions. Here we focus on all the questions that we were able to include in the questionnaire for empirically examining our research question.

Measures

Internal and external motivation to respond without prejudice were both measured using 7-point Likert scales (1 = strongly disagree; 7 = strongly agree). The eight items focused on immigrants and were derived from Plant and Devine (1998) internal and external motivation to respond without prejudice scales: e.g., "It is important for my own conscience to judge immigrants in an unbiased manner", and "I try to hide negative thoughts about immigrants to prevent disapproving reactions from others", respectively (see Appendix 2).

Indirect prejudice was measured with the UCT (Kuklinski et al., 1997). Participants were randomly assigned to either the baseline or the sensitive condition. In the baseline condition, they were shown a list of four issues (see Appendix 2) that are seen as annoying by some people. In the sensitive condition, respondents were shown an additional fifth "prejudice" item ("The number of refugees in the Netherlands/Germany"). In both conditions, respondents were asked to indicate *the number* of items that annoy them or made them angry. The difference between the mean number of items selected in both conditions can be interpreted as the proportion of respondents that selected the 'refugee item" in the sensitive condition. This provides an estimate of the prevalence of the sensitive attitude, in our case, the proportion of prejudiced (vs non-prejudiced) people toward refugees. Since each participant was randomly assigned to one of the two conditions, the findings are at the between-group level rather than the between-individual level.

Direct prejudice was assessed with four self-report items with 7-point scales (e.g., "The Netherlands/Germany should close its borders as much as possible for refugees"; see Appendix 2). These items were taken from previous European research on attitudes toward immigrants (Davidov & Meuleman, 2012; Moors et al., 2001). Although participants did not have to identify themselves and were informed at the start of the survey that their online answers were completely anonymous, we presented a random half of the sample with a reminder of their complete anonymity directly before the prejudice items: "Below are some statements that are somewhat sensitive because there is a lot of discussion about them. Therefore, we would like to remind you that the questionnaire is strictly anonymous and confidential. There is no way for the researchers to find out who you are after you completed the questionnaire. It is hence impossible to trace your answers back to you. This is a strict ethical requirement for any scientific research". This manipulation was meant to assess whether the questionnaire did indeed eliminate concerns about undesirable social consequences resulting from providing prejudiced responses, making a reduced sense of accountability with the related decrease in motivation to answer carefully and thoughtfully more likely.

Analyses

A confirmatory factor analysis (CFA) was performed in Mplus (Muthén & Muthén, 2007) using maximum likelihood estimation with robust standard errors (MLR) for examining a latent measurement model that included the eight items intended to measure the internal and external motivation to respond without prejudice. The CFA indicated that a good fit to the data was provided by a two-factor model in which the second internal motivation item ("I feel guilty when I think negatively about immigrants, even though others don't know") was excluded due to cross loadings, and the residuals of two of the items measuring external motivation were allowed to covary: *Satorra-Bentler scaled Chi^2(12) = 182.31, p < .001, CFI = .97, TLI = .94, RMSEA = .07*. These findings indicate that internal and external motivation represents two empirically distinct latent constructs that also were reliably measured (rho = .75,M = 4.59, SD = 1.35, and rho = .77, M = 3.34, SD = 1.20, respectively). For the four items of the direct prejudice scale, a good model fit was attained by a one-factor model which allowed the residuals of two of the items to covary: *Satorra-Bentler scaled Chi^2(1) = 15.27, p < .001, CFI = 1, TLI = .98, RMSEA = .07* (rho = .90; M= 4.57, SD = 1.66; see Appendix 3).

Additionally, we examined measurement invariance for the motivation scales and the direct prejudice scale across the two countries (Netherlands, Germany). Partial scalar invariance was attained for all three scales (internal and external motivation: *Satorra-Bentler scaled Chi^2(33) = 224.30, p < .001, CFI = .96, TLI = .95, RMSEA = .06*; direct prejudice: *Satorra-Bentler scaled Chi^2(5) = 26.31, p < .001, CFI = 1, TLI = .99, RMSEA = .05*; see Appendix 4), indicating that respondents in both countries had a similar understanding of the different constructs.

The main analysis consisted of two parts. First, Latent Profile Analysis (LPA) was conducted in Mplus to identify, based on average posterior probabilities, the optimal number of subgroups of respondents that display distinct constellations of internal and external motivations to respond

without prejudice. We included the two latent constructs rather than the separate items or summed scores into the latent profile analysis because these latent constructs most clearly represent the underlying motivations we are interested in. The LPA focused on the most parsimonious model to guarantee model identification and therefore compared models that allowed the means of the two latent factors (internal motivation and external motivation) to vary across profiles whilst the variances and covariances were constrained to be equal. An additional reason for this procedure is that we are interested in individuals' average levels of internal and external motivations within subgroups rather than on how these measures vary or covary across profiles (Nylund-Gibson & Choi, 2018).

LPA provides a series of fit indices to compare and identify the appropriate number of profiles (see Collins & Lanza, 2009; Pastor et al., 2007). The Bayesian information criteria (BIC) and the Akaike information criteria (AIC) indicate how well a model with the selected number of profiles fits the data, with the lowest numbers indicating the best fit. Bootstrap likelihood ratio test (BLRT) and the Vuong-Lo-Mendell-Rubin likelihood ratio test (VLMR) indicate the extent to which adding a profile improves model fit compared to the previous model (comparing between k and k-1 profiles). Entropy scores indicate the precision with which respondents are classified into the profiles but should not be used in itself to determine the optimal number of profiles. High entropy scores (on a 0 to 1 scale) indicate that respondents can uniquely be classified into one profile and not another, whereas low entropy scores indicate that respondents can be classified into more than one profile. Lastly, to determine the optimal number of profiles, it is important to consider the substantive meaning and theoretical interpretability of the profiles. The number of participants within each profile should not be too small and the profiles should conform with theoretical understandings.

The second part of the analysis consisted in investigating whether the subgroups of individuals identified in the LPA differ in indirect and direct prejudices. To do this, we used the stepwise approach as suggested by Asparouhov and Muthén (2020) and analyzed the indirect and direct prejudices in a multiple group environment in which the profiles obtained via the LPA figured as the grouping variable.[5] For each of the profiles obtained via the LPA, the proportion of respondents expressing indirect prejudice was obtained by regressing the number of items that respondents selected on the dummy variable indicating their assignment to the baseline or sensitive condition. In this regression, the intercept is equal to the mean (average number of selected items) in the baseline condition. The regression coefficient represents the difference in mean (percentage) between the baseline and the sensitive condition. A similar approach was used for direct prejudice.

In an additional analysis, the LPA was conducted in the two countries separately to assess whether the identification of the optimal number of subgroups of individuals is similar in the two countries and whether the related pattern of direct and indirect prejudices generalizes across Germany and the Netherlands.

Results

Descriptive findings

On the indirect prejudice measure, participants in the sensitive condition reported to be annoyed or angered by a significantly higher number of issues ($M = 2.09$, $SD = 1.10$) than in the baseline condition ($M = 1.61$, $SD = .95$), $\Delta M = t(3388) = 13.54$, $p < .001$. Subtracting the mean number of angry responses in the baseline condition from the mean number of angry responses in the sensitive condition multiplied by 100 shows that 48% of the population expressed prejudice toward immigrants. This was similar in both countries: Dutch respondents $M = 1.61$ ($SD = .92$) in the baseline condition and $M = 2.09$ ($SD = 1.07$) in the sensitive condition; German respondents $M = 1.61$ ($SD = .98$) and $M = 2.09$ ($SD = 1.13$), respectively.

Further, respondents' average scores on the direct prejudice measure between the "reminded" ($M = 4.60$, $SD = 1.64$) and "not-reminded" anonymity ($M = 4.53$, $SD = 1.67$) conditions did not differ between the two conditions: $\Delta M = t(3388) = 1.26$ $p = .21$. Thus, a reminder about the complete

anonymity of the survey directly before the direct prejudice items did not affect participants' responses in both countries. This further indicates that the responses are very unlikely to be affected by social desirability concerns.

The correlations between the different constructs showed that internal motivation was negatively associated with respondents' direct prejudice ($r = -.63$, $p< .001$), whereas a higher external motivation was not significantly associated with prejudice ($r = -.03$, $p= .12$). Furthermore, similar to previous research (Plant & Devine, 1998), internal and external motivation to respond without prejudice were relatively weakly correlated ($r = .22$, $p= < .001$) sharing less than 5% of variance.

Latent profiles

Table 1 shows the findings for different profile estimates up to five profiles. The fit statistics kept on improving with the addition of latent profiles. However, we also note that the entropy values are relatively high for all estimated models, which suggests that the decision of how many profiles to retain should mainly focus on interpretability and BIC (Diallo et al., 2017). Compared to four profiles, a five-profile model seems to have a relatively better fit with a slightly lower BIC ($\Delta = 143.52$) but the improved statistical model fit goes together with lower interpretability. Specifically, the five profiles are hard to distinguish in terms of average levels of internal and external motivations and, importantly, only 1.88% ($n= 64$) of the total sample was predicted to belong to the fifth profile. This makes the fifth profile not very meaningful and suggests retaining a four-profile solution which is represented in Figure 1.

Table 1. Model fit indices for overall fit and comparisons (k to (k-1)) for latent profile models with 2– 5 profiles.

# profiles k	LogL	#par	c	AIC	BIC	Entropy	−2*ΔLogL (Δdf)	VLMR	BLRT
2	39,537.60	25	1.34	79,125.20	79,278.42	.88	476.62 (3)	< .001	.000
3	39,435.44	28	1.41	78,926.89	79,098.49	.73	204.32 (3)	< .001	.000
4	**39,367.82**	**31**	**1.49**	**78,797.63**	**78,987.62**	**.76**	**135.25 (3)**	**.01**	**.000**
5	39,293.06	34	1.29	78,654.11	78,862.48	.77	149.52 (3)	< .001	.000

LogL = log likelihood; # par = number of free parameters; c = scaling correction factor for MLR; VLMR = Vuong-Lo-Mendell-Rubin log likelihood ratio test; BLRT = bootstrap likelihood ratio test; k = number of profiles; bold represents the selected LPA model.
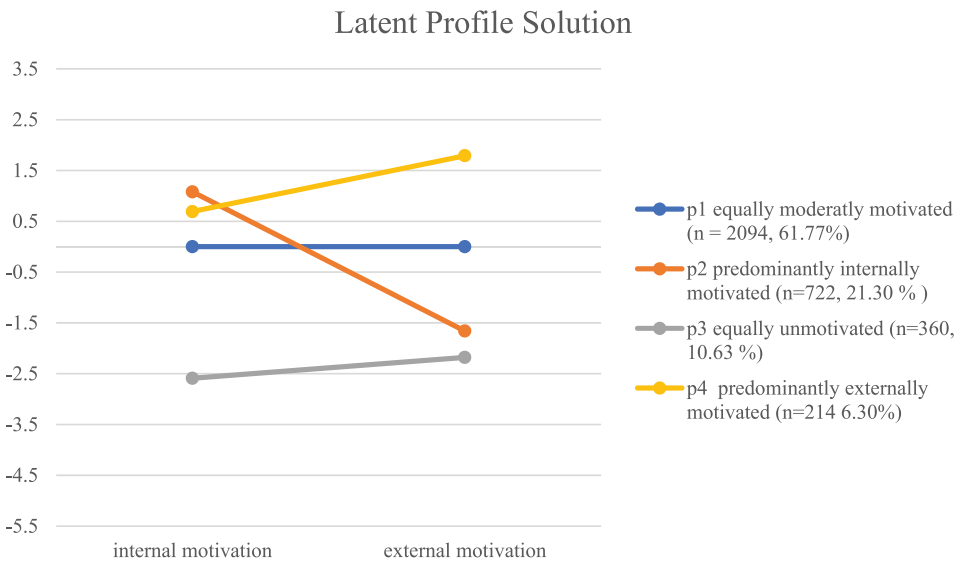

Figure 1. Estimated standardized mean scores of internal and external motivation latent classes with percentages based on posterior probabilities for 4 profile solution.
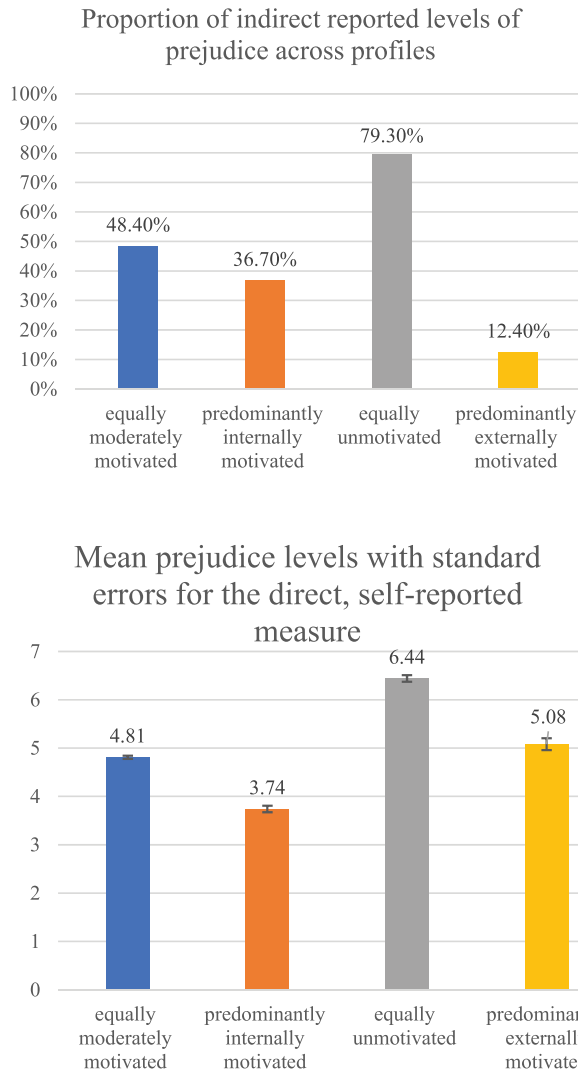
Proportion of indirect reported levels of
prejudice across profiles

Mean prejudice levels with standard
errors for the direct, self-reported
measure

Figure 2. Proportion of indirect (UCT) prejudice and mean level direct (self-report) prejudice (with standard errors) for the four latent profiles.

The first and largest of the four profiles (*equally moderately motivated*; 61.77%) consists of respondents with moderate levels of internal motivation ($M_{int} = 0$) in combination with moderate levels of external motivation ($M_{ext} = 0$). The second largest profile ("*predominantly internally motivated*"; 21.30%) consists of respondents with relatively high internal motivation to respond without

Table 2. Expressed levels of prejudice in the list experiment (UCT; indirect) and on the direct measurement (self-report) for the 4 profiles obtained in the LPA.

	Indirect (UCT)			Direct (self-report)
Profile (i)	Mean base	Mean treat	Proportion prejudiced	Mean score
1. Equally moderately motivated	1.611	2.095	48.4%	4.814
2. Predominantly internally motivated	1.497	1.864	36.7%	3.738
3. Equally unmotivated	1.640	2.433	79.3%	6.443
4. Predominantly externally motivated	1.979	2.103	12.4%	5.084

prejudice (M_{int} = 1.08) in combination with low external motivation (M_{ext} = −1.66) . The third profile comprises respondents who showed low internal (M_{int} = −2.59) as well as low external motivations (M_{ext} = −2.18; *"equally unmotivated"*; 10.63%). Finally, the smallest subgroup consists of *"predominantly externally motivated"* respondents (6.30%) that had the highest score for the external motivation to respond without prejudice (M_{ext} = 1.79; n = 214), combined with a moderate internal motivation (M_{int} = 0.69). These four profiles are largely in line with what we discussed as theoretical possibilities based on self-determination theory, although the subgroup of predominantly externally motivated also indicated some personal dedication to egalitarianism.

Indirect and direct prejudice

The results for the differences in indirect and direct prejudice between the four latent profiles are summarized in Table 2 and shown in Figure 2. The highest proportion of prejudiced respondents on the indirect measure and the highest average direct prejudice score were found for the subgroup of *"equally unmotivated"* individuals, which validates the substantial meaning of this profile. The second highest proportion of respondents that expressed indirect prejudice was found for the *"equally moderately motivated"* profile. This subgroup also had a relatively high average direct prejudice score on the self-reported measure. The *"predominantly internally motivated"* subgroup was characterized with a relatively low proportion of respondents that indirectly expressed prejudice and the lowest average score on the direct prejudice measure. Finally, the relatively small group of *"predominantly externally motivated"* individuals showed an inconsistent pattern of prejudice responses. On the indirect measure, this subgroup had the lowest proportion of prejudiced people, but their average prejudice on the self-reported direct measure was second highest. However, the former finding should be interpreted with care because this proportion is mainly due to the relatively high number of items that these respondents were annoyed with and angry about in the baseline condition and not in the condition that included the sensitive items (Table 2).

Country comparison

To examine the robustness of the findings, we conducted LPA for the German and Dutch samples separately (see Appendix). In both countries, a similar 4-profile model was found to represent the data best. Furthermore, the proportions of respondents in each of the profiles were quite similar in the two countries: *"equally moderately motivated"* (51.95% in Germany, and 46.54% in the Netherlands), *"predominantly internally motivated"* (14% and 24.81%, respectively), *"equally unmotivated"* (11.18%, and 8.63%, respectively), and *"equally highly motivated"* (22.87% and 20.20%, respectively).

Additionally, in examining in the two countries the pattern of direct and indirect prejudices, we found similar results for the different profiles except for indirect prejudice among the predominantly externally motivated subgroup (see Appendix). In Germany 15% of this subgroup was prejudiced whereas in the Netherlands this percentage was 48.4%. The main reason for this difference is that in the UCI baseline condition, this subgroup of individuals was in Germany annoyed by more items (M = 1.93) than in the Netherlands (M = 1.58), whereas there was no difference in the sensitive condition (M = 2.08 and M = 2.06, respectively).

Discussion

This study aimed to extend theory and research on internal and external motivation to respond without prejudice through the identification of distinct subgroups of individuals. By using a person-centered approach, we provide a novel contribution to the literature, finding four motivation profiles that replicate across two large representative national samples and are validated across two different prejudice measures. Prior research on motivations to respond without prejudice has focused on associations between variables, generally relied on relatively small convenient samples, arbitrary

dichotomized internal and external motivation scores into combined categories of motivation or used statistical interactions. In contrast, we focused on how configurations of internal and external motivations are organized within individuals by identifying an optimal number of profiles and considering both indirect and direct measures of prejudice to validate these profiles. Thus, rather than examining associations between variables, we paid attention to how these interact within persons, which complements the existing research on motivations to respond without prejudice (Osborne & Sibley, 2017).

Our results revealed four latent profiles of internally and externally motivated individuals. With one exception, these profiles were validated by the overall pattern of indirect and direct prejudice that we found for the different subgroups of individuals. As anticipated, there was a subgroup of *"equally unmotivated"* individuals that was characterized by the highest proportion of prejudiced respondents (79%) on the unobtrusive UCT measure, and the highest average self-reported prejudice on the direct measure. Around 10% of the majority population belonged to this profile which is similar to the percentage that voted for a far-right party in the 2019 parliamentary elections in the Netherlands (10.9% for FVD) and Germany (11% AFD).[6] This suggests that around one in 10 majority members did not fear negative social consequences of appearing prejudiced and also were not personally dedicated to egalitarianism. One in 10 is not a negligible number of people but also indicates that the great majority of the population is motivated to respond without prejudice.

We further identified a large subgroup of *"equally moderately"* motivated individuals of which 48% was prejudiced on the indirect measure and which on average was moderately prejudiced on the direct measure. The fact that six out of 10 respondents were found to belong to this subgroup indicates that most peoples' motivation to respond without prejudice stems from both a personal dedication to egalitarians and a fear of the negative consequences of appearing prejudiced toward minority members, and immigrants in particular. This is an important finding because this large subgroup has been mostly neglected in research that uses a variable-centered approach and the related statistical inter-action techniques for categorizing individuals in terms of external and internal motivations (e.g., Butz & Plant, 2009; Plant & Devine, 2009; Plant et al., 2003). Thus, a constellation of motives in which both internal and external motivations are moderately important appeared to be most common among the majority population in the two countries, and this constellation does not prevent many of the individuals in this group to express prejudices on the direct and indirect measures.

A third subgroup consists of *"predominantly internally motivated"* individuals (around 21%) of which one in three was prejudiced on the indirect UCT measure and which had the lowest average direct prejudice. This pattern of findings indicates that a motivation to respond without prejudice that stems from personal values goes together with lower prejudice, but not with being free from prejudices. Thus, the internalization and personal dedication to egalitarian values appears to be important but not sufficient for eliminating people's prejudicial responses toward minority groups.

The fourth relatively small subgroup of individuals (around 6%) demonstrated a predominantly external motivation to respond without prejudice. Interestingly, this subgroup showed an inconsistent pattern of prejudice with clearly the lowest proportion of individuals having indirect prejudice, together with the second highest average level of self-reported prejudice. However, the reason for this low proportion of prejudiced people on the indirect measure is the relatively high number of items the individuals in this subgroup were annoyed with and angry about in the UCT baseline condition (especially in Germany), and not because of the relatively low number of items chosen in the sensitive condition. Thus, the low proportion of prejudiced people in this subgroup seems to reflect relative over-reporting in the baseline condition rather than lower prejudice toward migrants in the sensitive condition.

An explanation for the pattern of prejudice findings for the predominantly externally motivated subgroup might be a lower level of cognitive engagement and effort in answering the questions thoughtfully and precisely (Krosnick, 1999; Lelkes et al., 2012). The survey was completely anon-ymous and an anonymity reminder before the self-reported direct prejudice measure did not affect the average level of prejudice. However, complete anonymity can eliminate a participant's sense of

accountability, and this is especially likely for the externally motivated to respond without prejudice who are more concerned about negative social consequences and the related impression management (Paulus, 1984). Lower cognitive engagement and effort lead to various response biases such as selecting the first response alternative offered, responding similarly on different questions, and agreeing with presented assertions (Krosnick, 1999). Depending on the measurement format, the one or the other response bias is more likely and leads to either over- or underreporting. The UCT measure asks people to indicate the number of items that annoy or anger them which requires cognitive effort in comparing and interpreting the meaning of the issues such as searching memory for relevant information and related feelings, and deciding about the number of issues. The mean number of annoying items was quite similar in the baseline and sensitive conditions, which suggests the possibility of response biases for this subgroup of predominantly externally motivated individuals.

The current study presents several advantages to previous research on motivations to respond without prejudice, but there are also some limitations. First, the questions that we used were part of a large-scale data collection in which various researchers cooperated. This inevitably means that constructs are measured with a limited number of items, including the internal and external motivations to respond without prejudice scales and the direct measurement of self-reported prejudice toward migrants. Although these measures formed distinct and reliable latent construct and both latent motivational constructs were used in the latent profile analysis, future person-centered research could try to use more extensive measures.

Second, future research could examine possible demographic (e.g., education, age) and social psychological (e.g., national identification, self-certainty) correlates as well as other outcomes (e.g., behavioral intentions and actual behavior) of the different profiles (Adelman & Verkuyten, 2020). This would allow us to further validate the four profiles found in the two countries and to develop a further understanding. Additionally, it would be interesting to examine how, and under which conditions, the different profiles might develop and change over time.

To conclude, this study advances the literature on the internal and external motivations to respond without prejudice and how these motivations are related to the actual expression of prejudicial attitudes. Using large-scale national data, we identified four motivation profiles that are in line with theoretical assumptions, that generalize across two countries, and that largely showed a similar pattern of prejudice across direct and indirect measures. Thus, we suggest that our findings provide a fairly accurate and meaningful representation of the types of profiles that are likely to be found in relation to people's motivation to respond without prejudice. In contrast to the variable-centered approach we focused on the different constellations of both motivations within individuals and therefore provide a more complete and integrated description of the relevant motivations. Such a description is important for applied reasons because it makes a more targeted intervention possible. Interventions based on variable-centered analyses often lead to thinking about improving a variable such as the internal motivation to respond without prejudice, but without taking into consideration what this might do to other motivations. Knowing that there is a large subgroup of equally moderated motivated individuals implies, for example, the possibility of a more targeted intervention. The internal and external motivations to respond without prejudice represent two qualitatively distinct concepts and it is important to consider the ways in which these are combined within individuals in order to understand individuals' prejudicial responses and for finding productive ways for reducing negative attitudes and behaviors toward minority groups such as migrants.

Notes

1. https://www.kantar.com/
2. https://www.tns-nipo.com/ons-aanbod/panel
3. https://www.forschungsdatenzentrum.de/de/haushalte/mikrozensus

4. The results that are presented in the following sections remained similar when these 9.9% were reincluded in the analyses.
5. Asparouhov and Muthén (2020) suggest a slightly different 3-step approach with a weighted multiple group-analysis. Due to technical issues we were, however, not able to implement this approach and hence proceededwith an unweighted multiple group analysis in which group membership is based on most likely latent classmembership. It should be noted that this classification method treats group membership as an observedvariable. It hence ignores variation in respondents' classification probabilities leading to an underestimation instandard errors (see Clark & Muthén, 2009).
6. https://europarl.europa.eu/election-results-2019/en/national-results/netherlands/2019-2024/https://europarl.europa.eu/election-results-2019/en/national-results/germany/2019-2024/https://europarl.europa.eu/election-results-2019/en/national-results/netherlands/2019-2024/

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

Notes on contributors

Kim Bamberg has a Msc in Migration, Ethnic Relations and Multiculturalism from Utrecht University.

Maykel Verkuyten is a professor in Interdisciplinary Social Science and member of the European Research Center on Migration and Ethnic Relations (ERCOMER) at Utrecht University.

ORCID

Maykel Verkuyten http://orcid.org/0000-0003-0137-1527

Data availability statement

The data used for the current analyses are securely stored at the special data storage facility of Utrecht University. The data are publicly available via at www.osf.io, doi:10.17605/OSF.IO/MEZVH.

Open scholarship

This article has earned the Center for Open Science badges for Open Data and Open Materials through Open Practices Disclosure. The data and materials are openly accessible at 10.17605/OSF.IO/MEZVH.

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Appendices

1. Additional information on participants and data

The "Research accountability online survey for social changes" which provided the data for the current research was funded by the European research council in the course of the "Horizon 2020 Research and Innovation Programme". The corresponding questionnaire was approved by the Utrecht University Ethics Review Committee of the Faculty of Social and Behavioral Sciences. Moreover, the Kantar consumer panel for fieldwork in the Netherlands, which was used for the selection of potential respondents in the Netherlands, comprises in total around 124.000 respondents from 65.000 Dutch households for which a number of socio-demographic characteristics are known and updated annually. Prior to completing the questionnaire, all participants were informed that the survey was completely anonymous, that participation was voluntary, and that they could stop at any moment without indicating a reason. They were furthermore informed that the survey might include questions about personal and sensitive issues. Finally, they were given some additional information on the procedure and the data handling and asked for their informed consent.

(1) Items

Table A shows the items used in the baseline and the treatment condition of the experiment using the UCT as well as the items used for the direct, self-reported measurement of prejudice. As can be seen, the only difference between the baseline and the treatment list of the UCT consists in the sensitive item that has been added to the treatment list.

Table A: Indirect and direct expressions of prejudice; UCT and direct measurement

UCT baseline	UCT treatment	Direct measurement
Below is another list of things that can make people feel angry or annoy themselves. How many of the following things annoy you? (covert)		To what extent do you agree or disagree with the following propositions? (7-point Likert scale) (overt)
Not vaccinating children against certain diseases	Not vaccinating children against certain diseases	There are too many refugees in the Netherlands/Germany
People who light fireworks on New Year's Eve	People who light fireworks on New Year's Eve	The Netherlands/Germany should continue to receive refugees (reverse coded)
Homosexual men kissing each other in public	Homosexual men kissing each other in public	The Netherlands/Germany should close its borders as much as possible for refugees
The speed limit on motorways	The speed limit on motorways	Refugee policies should become stricter
	The number of refugees in the	Netherlands/Germany

Table B: Items for measurement of internal and external motivation to respond without prejudice

To what extent do you agree or disagree with the following statements about your own thoughts and feelings? (7-point Likert scale; 1 "totally disagree" – 7 "totally agree")

External motivation to supress the expression of prejudice

I try to hide negative thoughts about immigrants, in order to avoid negative reactions from others.

If I were to say something negative about immigrants, I would be worried that others are angry with me.

I attempt to appear non-prejudiced in order to avoid disapproval from others.

I try to act non-prejudiced toward immigrants because others expect me to.

Internal motivation to supress the expression of prejudice

It is important for my own conscience to assess immigrants in an unbiased way.

I feel guilty when I think negatively about immigrants, even though others don't know.

Because of my personal values, I find it wrong to use stereotypes about immigrants.

Being nonprejudiced toward immigrants is important for my self-concept.

2. Confirmatory factor analysis

Table B shows the list of the items that were used to measure respondents' levels of external and internal motivation to respond without prejudice.

Confirmatory factor analysis was performed in Mplus using the maximum likelihood estimation with robust standard errors (MLR) to determine whether the eight items that were designed to measure the internal and external motivation factors were indeed measuring these two distinct constructs. The results of this analysis are presented in Table C below. As internal and external motivation were argued to be distinct types of motivation to suppress the expression of prejudice, a two-factor model was fitted in which the items were forced to load on the intended factors (M2a). This model was compared to a one-factor model with all eight items (M1). Even though the 2-factor model provided a significantly better fit to the data, the overall fit of this model remained unsatisfactory. Therefore, and following the reasonable suggested changes from the modification indices, model M2b was fitted, which excluded the second item measuring internal motivation (*I feel guilty when I think negatively about immigrants, even though others don't know*) due to cross loadings and allowed the residuals of two of the items measuring external motivation to covary. These modifications led to a significant improvement of model fit (M2a vs M2b) and the resulting two factor model (M2b) had a good fit to the data. Based on these results, it can be concluded that internal and external motivation indeed represent two theoretically and empirically distinct constructs and the analysis continued with the these two latent constructs.

A second CFA analysis was conducted on the four items designed to measure direct self-reported prejudice (Table C). A one-factor model (M1a°) did not provide a good fit to the data. Considering the suggested changes from the modification indices, M1b° which allowed the residuals of two of the items to covary was fitted. This modification resulted in a significant improvement of model fit and the resulting model (M1b°) had a good overall fit to the data. Consequently, this modified model was used in the analyses.

Table C: Confirmatory factor analysis

Model	SB	df	c	AIC	CFI	TLIRMSEA
Internal and external motivation						
M1 1 factor	3548.70	20	1.20	94,871.77	.42	.19.23
M2a 2 factor	695.59	19	1.41	91,580.79	.89	.84.10
M2b 2 factor	**182.31**	**12**	**1.34**	**79,547.10**	**.97**	**.94.07**
Direct prejudice						
M1a° 1 factor	230.99	2	1.26	44,507.73	.95	.86.18
M1b° 1 factor	**15.27**	**1**	**.96**	**44,233.19**	**1**	**.98.07**

Table D: Measurement invariance of 3 factors across Germany and the Netherlands

Model	SB	df	c	T(Δdf)	P-value	CFI	TLI	RMSEA	Model compared
Internal and external motivation									
M1a Configural invariance	204.35	25	1.32	/	/	.97	.94	.07	/
M1b Full metric invariance	238.89	30	1.32	34.54(5)	<.001	.96	.94	.06	M1b-M1a
M1c Partial metric invariance	210.27	29	1.31	4.58 (4)	.33	.97	.95	.06	M1c-M1a
M1d Partial scalar invariance	**224.30**	**33**	**1.28**	**10.97(4)**	**.03**	**.96**	**.95**	**.06**	**M1d-M1c**
Overt prejudice									
M2a Configural invariance	14.40	2	.96	/	/	1	.98	.06	/
M2b Full metric invariance	35.55	5	1.02	21.17(3)	<.001	.99	.99	.06	M2b-M2a
M2c Partial metric invariance	23.43	4	.98	9.14(2)	.01	1	.99	.05	M2c-M2a
M2d Partial scalar invariance	**26.31**	**5**	**.99**	**3.00(1)**	**.08**	**1**	**.99**	**.05**	**M2d-M2c**

SB = Satorra-Bentler scaled Chi^2; df = degrees of freedom; *c = scaling correction factor for MLR;* AIC = Akaike information criteria; CFI = Confirmatory fit index; TLI = incremental fit index; $RMSEA$ = root-mean-square error of approximation; selected models marked in boldface; M1 1 factor: 8 items for internal and external motivation forced to load on same factor; M2a 2 factor: 4 items for internal and 4 for external motivation factor; M2b 2 factor: 2 factor model excluding item int_2 and allowing the residuals of items ex_2 and ex_1 to covary; M1a° 1 factor: 4 items for the overt prejudice factor; M1b° 1 factor: 1 factor model allowing residuals of items ov_3 and ov_2 to covary.

3. Measurement invariance between the Netherlands and Germany

For both CFA models, measurement invariance was assessed across Germany and the Netherlands (Table D). Partial scalar invariance was supported for both motivation factors as well as for the direct prejudice factor. Thus, the corresponding items were understood sufficiently similarly by respondents in both countries to allow for the comparison of factor means and associations with factors across these countries.

SB = Satorra-Bentler scaled Chi^2; df = degrees of freedom; c = scaling correction factor for MLR;
$T(\Delta df)$ = Chi-square distributed test statistics with difference in degrees of freedom; CFI = Confirmatory fit index; TLI = incremental fit index; $RMSEA$ = root-mean-square error of approximation; selected models marked in boldface; M1a: Configural invariance; M1b: Metric invariance; M1c: int_3 configural, other items metric; M1d: int_3 configural, other items scalar; M2a: Configural invariance for all items; M2b: Metric invariance for all items; M2c: ov_4 configural, other items metric; M2d: ov_4 configural, ov_2 metric, other item scalar.

4. Results for LPA for country-specific samples (robustness check)

Table G provides the fit statistics of the models with varying numbers of profiles that were compared for the two country-specific subsamples (Netherland and Germany). In both countries, LPA was conducted as in the main analyses based on the two motivation factors. The estimates of mean scores of the factors and probabilities of membership for the models that were most relevant for the final selection are depicted in Figure E (Netherlands) and Figure F (Germany). Considering the fit statistics in combination with the criterion of theoretical interpretability, the 4-profile model was selected in both countries.

Table G: Model fit indices and test statistics for overall fit and comparisons (k to (k-1)) for latent profile model with 2– 5 profiles with country-specific samples

# profiles k	LogL	#par	c	AIC	BIC	Entropy	−2*ΔLogL (Δdf)	VLMR	BLRT	Model compared
Netherlands (n = 1645)										
2	18,679.49	25	1.30	37,408.97	37,544.11	.87	236.82(3)	<.001	<.001	k to (k-1)
3	18,624.70	28	1.41	37,305.41	37,456.76	.70	109.56(3)	.003	<.001	k to (k-1)
4	**18,601.50**	**31**	**1.41**	**37,265**	**37,432.57**	**.67**	**46.41(3)**	**.09**	**<.001**	**k to (k-1)**
5	18,576.11	34	1.54	37,220.23	37,404.01	.70	50.77(3)	.34	<.001	K to (k-1)

(Continued)

Table G: (Continued).

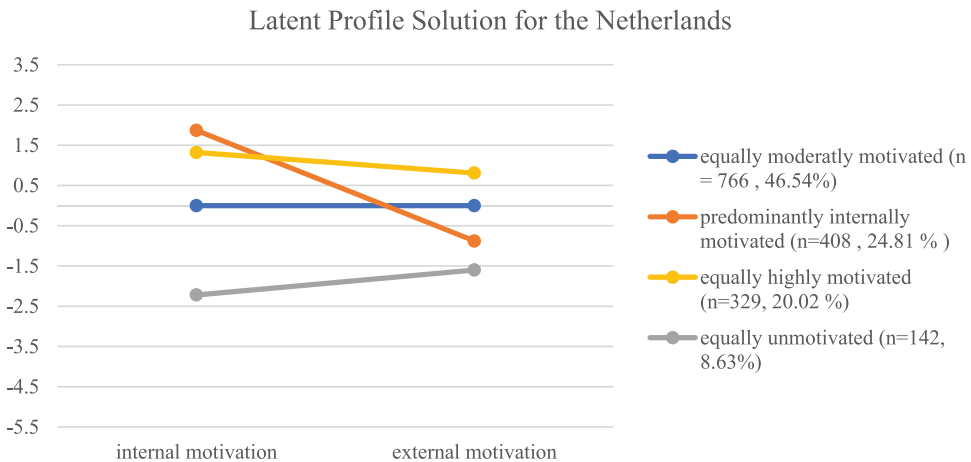| # profiles k	LogL	#par	c	AIC	BIC	Entropy	−2*ΔLogL (Δdf)	VLMR	BLRT	Model compared
Germany (n = 1745)										
2	20,724.52	25	1.37	41,499.04	41,635.65	.90	262.54(3)	<.001	<.001	k to (k-1)
3	20,633.84	28	1.25	41,323.67	41,476.68	.85	181.37(3)	<.001	<.001	k to (k-1)
4	**20,592.46**	**31**	**1.28**	**41,246.91**	**41,416.31**	**.78**	**82.76(3)**	**.003**	**<.001**	**k to (k-1)**
5	20,540.51	34	1.30	41,149.03	41,334.82	.81	103.89(3)	.001	<.001	K to (k-1)

Figure A: Mean scores, final class counts, and percentages based on posterior probabilities for 4 and 5 profile solution with only Dutch respondents

LogL = log likelihood; # par = number of free parameters; c = scaling correction factor for MLR; VLMR = Vuong-Lo-Mendell-Rubin log likelihood ratio test; BLRT = bootstrap likelihood ratio test; k = number of profiles; bold represents the selected LPA model.

For the Dutch sample, the results from the Vuong-Lo-Mendell-Rubin likelihood ratio test (VLMR) for the 4-profile solution were found to be statistically insignificant (*p* = .09). However, the Bootstrap likelihood ratio test (BLRT) for this model indicated that a 4-profile solution provided a significant better fit to the data than a 3-profile solution. According to Geiser (2012) and to Nylund et al. (2007), the BLRT represents more reliable criteria for the selection of classes or profiles than the VLRT, which is why a 4-profiles solution was preferred over a 3-profile solution for the Dutch sample. A similar argumentation could have been made for selecting the 5-profile over the 4-profile model. However, from a theoretical point of view, the profiles presented in the 5-profile model seem to be less distinctive. For example, profile 1, profile 4 and profile 5 all seem to consist of individuals that hold more or less low levels of internal and external motivations.

Following a similar line of argumentation, the 4-profile model was selected over the 5-profile model for the German sample. When solely considering the fit statistics, a 5-profile model seemed to provide a better fit to the data with a slightly lower BIC (Δ = 97.88) and higher entropy. However, the profiles that are generated in the 5-profile model are again harder to distinguish in terms of average levels of internal and external motivation. In addition, only 2.49% (*n* = 43) of the German sample were predicted to belong to the fifth profile.

5. Levels of prejudice in the indirect and direct measurement for country-specific samples (Germany and the Netherlands)
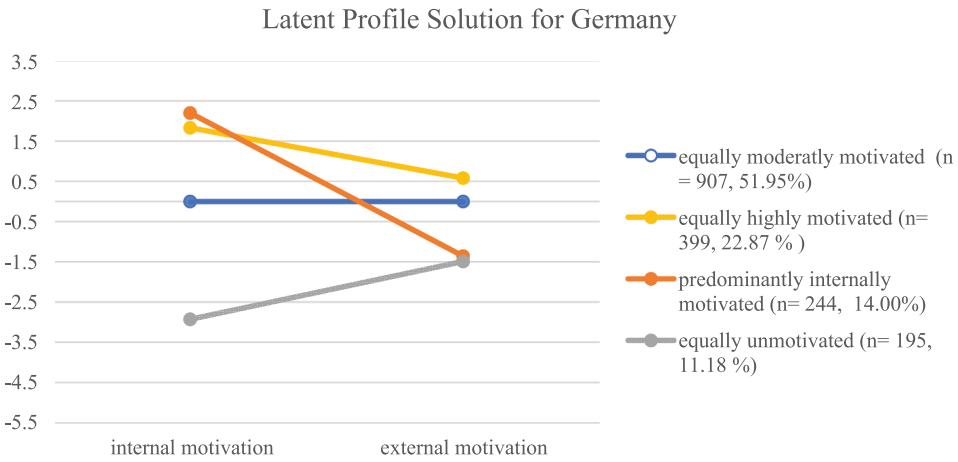

Figure B: Mean scores, final class counts, and percentages based on posterior probabilities for 4 and 5 profile solution with only German respondents

Table E: German sample

Profile (i)	UCT/indirect			Direct/self-report
	Mean base	Mean treat	Proportion prejudiced	Mean score
1. Equally moderately motivated	1.58	2.194	61.4%	5.25
2. Predominantly internally motivated	1.510	1.77	26%	3.396
3. Equally unmotivated	1.833	2.56	72.7%	6.675
4. Predominantly externally motivated	1.934	2.084	15%	3.94

Table F: Dutch sample

Profile (i)	UCT/indirect			Direct/self-report
	Mean base	Mean treat	Proportion prejudiced	Mean score
1. Equally moderately motivated	1.678	2.189	51.1%	5.102
2. Predominantly internally motivated	1.469	1.749	28%	3.394
3. Equally unmotivated	1.681	2.543	86.2%	6.557
4. Predominantly externally motivated	1.577	2.061	48.4%	4.291