



## Full Length Article

## Dual identity and psychological adjustment: A study among immigrant-origin members

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## ABSTRACT

This study examines immigrants' psychological adjustment by focusing on ethnic and national identification, by using a Latent Profile Analysis to identify identity profiles, and by examining psychological outcomes at a same time point and over time (average 3-year interval). Among a national sample of immigrant groups in the Netherlands (Wave 1,  $N = 1939$ ), four identity profiles were identified: ethnic identity, national identity, equal-medium dual identity, and high dual identity. For four indicators of psychological adjustment (life satisfaction, depressive symptoms, emotional loneliness, and social loneliness) and at the first and second wave (Wave 2,  $N = 848$ ), a robust pattern was found: high dual identifiers had better psychological adjustment compared to people with one of the other three profiles.

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## 1. Introduction

Migration poses important and multifaceted psychological challenges for immigrants and their children. The process of adapting to a new society can affect immigrants' psychological adjustment, including life satisfaction, depression and loneliness. One key challenge is to combine subgroup identities with commitments to the nation-state. The research on dual identity suggests that it is possible to have varying degrees of identification with one's ethnic minority group and the national category simultaneously: e.g., African-American, Indian-British, or Turkish-Dutch. However, it has also been argued and demonstrated that trying to develop and maintain a dual identity can involve the difficult task of reconciling loyalties, cultural worldviews and normative expectations which induces stress and psychological conflicts (Hirsh & Kang, 2015; Rudmin, 2003).

In the current study we focus on ethnic and national identification and we want to make a contribution to the growing psychological literature on the positive health implications of social identities (Cruwys, Haslam, Dingle, Haslam, & Jetten, 2014; Haslam, Jetten, Postmes, & Haslam, 2009; Jetten, Haslam, & Haslam, 2012). We examined the relation between dual group identification and psychological adjustment among national adult samples of the two largest and similar immigrant-origin groups in the Netherlands (of Turkish and Moroccan origin). We used

separate measures of ethnic identification and national identification and we investigated psychological adjustment at the same time point and at a later time point (around three years later). A similar pattern across time would indicate that the associations of group identifications with psychological adjustment are relatively stable and enduring (Meeus, 2016).

## 1.1. Group identifications

Hutnik (1991; see also Deaux, 2006) argued that immigrant minority individuals face two central identity issues: (1) to develop a sense of host national belonging, and (2) to maintain a sense of belonging to one's ethnic community. Similar to Berry's acculturation model (1997), the combination of these two group identifications results in four possible profiles: dual identity (high national and ethnic identification), national identity (high national identification only), ethnic identity (high ethnic identification only), and disengagement (low ethnic and low national identification).

Such a two-dimensional model is widely used in the literature but there also are some questions regarding its conceptualization and operationalization. For example, the model does not conceptualize the possibility that a person is neutral to both groups (Rudmin, 2003). Further, disengagement requires distancing oneself from both the ethnic community and the national community. This might go against the fundamental need to belong (Baumeister & Leary, 1995; Del Pilar & Udasco, 2004) and therefore would only be an option for highly individualistic people (Bourhis, Moïse, Perrault, & Sénécal, 1997). Additionally, meaningful subdivisions

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within the dual identity orientation might exist (Schwartz & Zamboanga, 2008). For instance, immigrants can feel a sense of belonging to both communities but maintain a relative emphasis on their ethnic identity (Roccas & Brewer, 2002; Schwartz & Zamboanga, 2008). In their research among Turkish migrants in Germany, Simon and Ruhs (2008, p. 1355) argued that “[a]gainst the backdrop of a strong Turkish identification, a moderate level of German identification may already acquire sufficient self-relevance to prompt a sense of dual identity”. In other words, dual identity does not necessarily have to imply similarly high levels of identification with both the ethnic community and the host nation.

There are different ways to investigate dual identity (see Celenk & Van de Vijver, 2014; Nguyen & Benet-Martínez, 2007). Statistically, this can be done by using median or midpoint splits on the separate scales for ethnic and national identification (Berry & Sabatier, 2011; Ward & Kennedy, 1994). This approach is criticized for the possibility that identification orientations are ‘created’ which for the people themselves might have little subjective meaning (MacCallum, Zhang, Preacher, & Rucker, 2002; Schwartz & Zamboanga, 2008). Another approach is to use four sets of items that directly assess the four profiles (Berry, Phinney, Sam, & Vedder, 2006; Berry & Sabatier, 2011). A possible problem with this approach is that immigrants can score high on several profiles at the same time, although these are supposed to be conceptually different (Rudmin & Ahmadzadeh, 2001).

In addition to these variable-centered approaches it is possible to use a person-centered approach. Person-centered analyses investigate how particular variables group within individuals rather than how characteristics are related to each other, as with variable-centered approaches. The advantage of a person-centered analysis is that it examines how each individual's levels of ethnic and national identification relate to each other. Arguably, this corresponds best with the proposition of individual differences in identification profiles (Bergman, Magnussen, & El-Khoury, 2003). Together with the use of national samples this allows us to identify the types of profiles that exist and the proportion of immigrant-origin individuals adopting them. We performed exploratory Latent Profile Analysis (LPA) to identify the optimal number of empirically existing identity profiles. This data-driven approach clusters individuals into different subgroups based on their levels of ethnic and national identification (Collins & Lanza, 2010). However, because we used Hutnik's model (1991; see also Berry, 1997) as a theoretical starting point we also performed a confirmatory LPA analysis to investigate whether the theoretically proposed four profiles fit the data and correspond to the findings of the exploratory LPA.

Thus, our first aim was to try to find empirical evidence for the distinction between the four identification profiles. We had two general expectations about the profiles that are most likely to emerge. First, given that people have a fundamental need to belong (Baumeister & Leary, 1995), detaching from one's ethnic identity as well as the national identity (i.e., disengagement) was expected to be the orientation that is the least likely to be adopted. Second, immigrants rarely relinquish their ethnic identity but rather add a sense of host national belonging to their ethnic belonging (Barker, 2015; Fleischmann & Verkuyten, 2016). Furthermore, research among Turkish Dutch and Moroccan Dutch demonstrates continuing high levels of ethnic identification (Verkuyten, 2005). Therefore, we expected that the main profiles will be dual identity and ethnic identity - and not national identity - because these imply a high level of ethnic identification.

### 1.2. Group identification and psychological adjustments

In general it is argued and found that identification with both cultural groups (dual identity) has psychological advantages for

ethnic minorities over identification with just one (e.g., Dimitrova, Aydinli, Chasiotis, Bender, Van de Vijver, 2015; Fleischmann & Verkuyten, 2016; Ng Tseung-Wong & Verkuyten, 2013; Nguyen & Benet-Martínez, 2007; Phinney, Berry, Vedder, & Liebkind, 2006; Ward & Kennedy, 1994). There are several reasons why more enduring, internalized group identifications might have positive implications for psychological adjustment. Group identification implies a sense of shared group membership that provides a basis for social support and satisfies basic psychological needs (Vignoles, 2011). Research has shown that group identification provides people with a sense of belonging, a sense of meaning and purpose, a sense of control and agency, and a source for self-affirmation, and that need satisfaction mediates the relationship between group identities and psychological well-being (Cruwys et al., 2014; Greenaway, Cruwys, Haslam, & Jetten, 2016; Steffens, Haslam, Schuh, Jetten, & Van Dick, 2016). Maintaining strong group identities has a positive effect for well-being and the acquisition of new group identities can also have beneficial effects. Meaningful new group memberships imply gains in the number of group identifications and this improves psychological well-being (see Greenaway et al., 2015, 2016).

In the current study we examined the association between the identity profiles and three main indicators of psychological adjustment (life satisfaction, depression and loneliness) among large immigrant-origin samples in the Netherlands. Considering the importance of group identifications for psychological well-being, as well as the beneficial effects of identifying with multiple groups and previous findings on the positive psychological correlates of dual identity, we expected individuals with dual identity to have higher life satisfaction and lower feelings of depression and loneliness compared to individuals having one of the other identity profiles.

When dual identifiers do indeed display better psychological adjustment, this can be because the statistical effects of national identification and ethnic identification are additive (two main effects) or multiplicative (a positive interaction effect). For gaining a further understanding we therefore also considered the interplay between the association of ethnic identification and national identification with immigrants' psychological adjustment. In a variable-centered approach, an additive effect means that both ethnic identification and national identification have separate statistical main effects on psychological adjustment, and there is evidence for this in several countries (Berry et al., 2006; Birman, 1998; Fleischmann & Verkuyten, 2016). A multiplicative effect implies that both group identifications reinforce each other whereby the combination of the two (statistical interaction) sets the dual identity profile apart from the other profiles.

### 1.3. To summarize

The current study aims to make a contribution to the research on dual identity and psychological adjustment by investigating (a) life satisfaction, depression and loneliness as three important aspects of psychological adjustment, (b) by looking at psychological adjustment over time, and (c) by using large samples of the two main immigrant-origin groups in the Netherlands. Using both exploratory and confirmatory person-oriented analyses we first identified the optimal number of identity profiles and we expected the dual identity and ethnic identity orientations to be most likely. Second, we examined the associations between the identity profiles and psychological adjustment and we expected dual identifiers to have better psychological adjustment than individuals adopting other identification orientations. To examine whether dual identity has a more enduring, robust association with psychological adjustment we considered the same adjustment outcomes at the same time point and also at a later time point. Thus, in

addition to a cross-sectional analysis we used a so-called longitudinal prediction model in which the predictor variable (group identifications) was measured earlier in time than the predicted outcome. We did not examine changes over time because an adequate modelling of change requires more than two data points (Meeus, 2016).

We used national samples of the two largest immigrant-origin groups in the Netherlands - of Turkish and Moroccan origin - that have a similar migration history, similar religion, and similar socioeconomic disadvantages. Because of these similarities we examined the identity profiles and psychological adjustment of both groups together. Turks and Moroccans have a history of labour migration dating back to the end of the 1960s when Dutch industry started recruiting migrant labour on a large scale. In the mid-1970s, a process of family reunification began, as first the Turks and later the Moroccans were joined by their wives and children. Nearly all of the Turks and Moroccans self-identify as Muslims (Maliepaard, Lubbers, & Gijsberts, 2010) and both groups occupy the most disadvantaged position in Dutch society in terms of educational attainment, labour market position, housing, and experiences with discrimination (Gijsberts & Dagevos, 2009). People with a Turkish or Moroccan background constitute the two largest immigrant-origin groups in the Netherlands with around 390,000 people each.

In examining our predictions it was important to take various possible confounding variables into account (Nguyen & Benet-Martinez, 2013). Immigrants with higher socioeconomic status may have better psychological adjustment (Gallo, Bogart, Vranceanu, & Matthews, 2005) and be more integrated because of their success in school and work (Alba & Nee, 1997). Further, immigrants who perceive more ethnic discrimination may emphasize their ethnic minority identity and may also have worse psychological adjustment (Pascoe & Richman, 2009). Therefore, the current study included perceived discrimination and socioeconomic status as control variables. We also controlled for gender (Weissman & Klerman, 1985), age (Ryff & Keyes, 1995), immigrant generation and length of stay in the country (Abouguendia & Noels, 2001; Gokdemir & Dumludag, 2012), and ethnicity (Liebkind & Jasinskaja-Lahti, 2000) because these variables might be related to group identifications and also to psychological adjustment.

## 2. Method

### 2.1. Data and sample

We use data collected by the Netherlands Longitudinal Life-course Study (NELLS) (De Graaf, Kalmijn, Kraaykamp, & Monden, 2014). The NELLS is a national panel study focusing on social cohesion, inequality, and norms and values, and full details of the sampling measures and the data are publicly available (De Graaf et al., 2014; [www.nells.nl](http://www.nells.nl)). Data collection for wave 1 started in January 2009 and finished in May 2010, with a break in the summer of 2009. For wave 2 it started in January 2013 and finished in December 2013. On average, there was a three-year interval between the two waves. In wave 1, a two-stage stratified sampling was applied with first the sampling of thirty-five municipalities and then respondents within these municipalities. Incentives (5-euro webshop gift voucher) was offered to participants to maximize the response rate.

In the first wave, 2301 people of Turkish (49%: 32% first generation + 17% second generation) and Moroccan (51%: 32% first generation + 19% second generation) immigrant-origin participated. Only 38% of these respondents participated in the second wave. The refusal of further participation and the difficulty of locating participants after three years were the two most important reasons for

this high attrition rate. The current analyses utilized two samples. First, wave 1 data (*W1 sample*) were used to identify participants' identification orientations, and 1939 participants did not have any missing data on the items measuring ethnic and national identification (310 participants had missing data on all eight items and 52 had missing on one or more item). Only these participants were included in the analysis. We did not handle missing data using procedures such as imputation because this can bias the LPA analysis which identifies latent profiles from the pattern of item responses. In the second wave (*W2 sample*) no questions about ethnic identification were asked so these data could not be used for identifying patterns of group identifications. However, the same measures of psychological adjustment were used in both waves which allows us to examine the association between the identifications and psychological adjustment cross-sectionally as well as over time. There were 848 respondents who also participated at W2 and provided information on the psychological outcome variables. We compared the group of participants who stayed in the study (stay) and those who dropped out in the second wave (drop-out). The demographic composition of both groups was similar for age (stay = 30.72, drop-out = 31.15,  $t(1937) = -1.07$ ,  $p = 0.29$ ) and ethnicity (percentages of Moroccans: stay = 48.9%, drop-out = 50.9%,  $\chi^2(1) = 0.791$ ,  $p = 0.37$ ), but the participants who dropped out were more likely to be male (percentages of male: stay = 43.6%, drop-out = 49.3%,  $\chi^2(1) = 6.12$ ,  $p = 0.012$ ), first generation immigrants (percentages of first generation: stay = 59.9%, drop-out = 67.4%,  $\chi^2(1) = 11.67$ ,  $p = 0.001$ ), and to have a lower level of education (percentages of college-and-above education: stay = 25.4%, drop-out = 19.4%,  $\chi^2(1) = 9.98$ ,  $p = 0.002$ ). The stayed participants were similar to the drop-out participants for national identification (stay = 3.72, drop-out = 3.72,  $t(1937) = 0.04$ ,  $p = 0.97$ ) and depression (stay = 1.36, drop-out = 1.39,  $t(1931) = -1.30$ ,  $p = 0.195$ ), but the participants who dropped were more likely to have higher ethnic identification (stay = 4.10, drop-out = 4.18,  $t(1937) = -2.46$ ,  $p = 0.014$ ), lower life satisfaction (stay = 7.20, drop-out = 7.07,  $t(1899) = 2.90$ ,  $p = 0.004$ ), higher emotional loneliness (stay = 2.00, drop-out = 2.06,  $t(1931) = -2.18$ ,  $p = 0.029$ ), and higher social loneliness (stay = 1.94, drop-out = 2.00,  $t(1932) = -2.43$ ,  $p = 0.015$ ).

### 2.2. Measures

#### 2.2.1. Ethnic and national identifications

The two group identifications were measured only at the first wave. **National identification** was assessed by four items that are commonly used in social psychological research (see Verkuyten & Martinovic, 2012): "I feel at home in the Netherlands"; "I strongly identify with the Netherlands"; "I really feel connected with the Netherlands"; and "My Dutch identity is an important aspect of myself". **Ethnic identification** was measured with four comparable items: "I am proud of my ethnic background"; "I identify strongly with my ethnic group"; "I really feel connected with my ethnic group"; and "My ethnic identity is an important aspect of me". Participants responded on 5-point scales, ranging from 1 "strongly agree" to 5 "strongly disagree". In the introduction to these questions it was explained that "with ethnic background we mean the country where you or your parents were born". This introduction was used to assure that the respondents were thinking about their Turkish or Moroccan background (Fleischmann & Verkuyten, 2016). The responses were reverse coded so that a higher score indicated a higher level of group identification.

A Confirmatory Factor Analysis (CFA) was conducted to validate these two measurements. This is necessary for the confirmatory LPA and for using the two identifications as two continuous predictors. The CFA was performed on the eight items with ethnic and national identification being specified as two separate factors.

Because responses on ethnic identification were skewed in the direction of high identification, the maximum likelihood estimation with robust standard errors (MLR) was used. The model had a reasonable fit,  $LR\chi^2(19, N = 1939) = 156.658, p < 0.001$ ; RMSEA = 0.061; CFI = 0.972; TLI = 0.959; SRMR = 0.026. In general, RMSEA < 0.05, CFI and TLI > 0.95, and SRMR < 0.08 are considered to indicate a good fit (Wang & Wang, 2012). Standardized factor loadings of national identification ranged from 0.70 to 0.87, and for ethnic identification from 0.71 to 0.93. This model was compared with a one-factor model in which the eight items loaded on a single factor. The two-factor model had a better model fit, Satorra-Bentler  $\Delta\chi^2(1, N = 1939) = 510.423, p < 0.001$ , which demonstrates that the four items of ethnic identification ( $\alpha = 0.91$ ) and the four items of national identification ( $\alpha = 0.86$ ) assessed two separate constructs.

### 2.2.2. Psychological adjustment

**Life satisfaction** was assessed in terms of aggregated domain life satisfaction and by using ten items in both waves. On 10-point scales (1 = “very unsatisfied”, and 10 = “very satisfied”) respondents were asked to indicate how satisfied they were with ten aspects of their life: work, income, level of education, relationship or marriage, family life, family-work balance, social life, neighborhood, leisure time, and apartment or house. In the second wave an eleventh option “not applicable” was available, which was coded as missing in the current analyses.<sup>1</sup> The items assessed people’s satisfaction in different life domains and while life satisfaction can represent the average satisfaction across life domains, satisfactions in various domains are not necessarily reflections of an underlying psychological construct. The scale was regarded as a formative rather than a reflective measure. Thus, CFA was not performed and the average score of the ten items was taken to indicate respondents’ level of general life satisfaction ( $\alpha = 0.82$  for W1, and 0.87 for W2).

**Depressive Symptoms** was assessed in both waves with sixteen items of the Center for Epidemiologic Studies Depression (CES-D) scale (Radloff, 1977). CES-D is one of the most widely used instruments for assessing depressive symptoms, both among the general population and clinical samples (Schroevers, Sanderman, Sonderren, & Ranchor, 2000; Shafer, 2006). CES-D originally consists of 20 items and the 16 negatively worded items included in the NELS survey relate to the dimensions of depressed affect, somatic symptoms, and interpersonal problems (see Shafer, 2006). Respondents reported how frequently they experienced sixteen symptoms in the past seven days (1 = “rarely or never; less than a day” to 4 = “usually or always; 5 to 7 days”).

A CFA was performed on the 32 items from the two waves simultaneously. A three-factor structure (i.e., depressed affect, somatic symptoms, and interpersonal problems) was specified in both waves. A Multi-trait Multi-method (MTMM) structure via correlated uniqueness was specified to take into account that items were measured in two waves. Furthermore, measurement invariance across the two waves was tested. Given that the responses on this measure were skewed in the direction of low depressive symptoms, the MLR estimation was used. The model representing scalar invariance, with all factor loadings and intercepts being the same across two waves, had a good fit,  $LR\chi^2(462, N = 1934) = 1587.823, p < .001$ ; RMSEA = 0.035; CFI = 0.926; TLI = 0.921; SRMR = 0.038, and it did not fit worse than the configural model,<sup>2</sup>

<sup>1</sup> The percentage of response “N.A” ranged from 40% (family-work balance) to 1% (neighborhood). The relatively high number of missing is understandable because the scale measures various aspects of life which are not all relevant to everyone (e.g., when one does not have a job or lives alone rather than with one’s family). For the items that should be relevant to everyone, such as “social life”, “neighborhood”, “leisure time”, and “apartment/house”, the percentages of missing are low (<4%). Eight respondents who reported “N.A.” on all items were not included in the analysis.

<sup>2</sup> The configural model fit:  $LR\chi^2(433, N = 1934) = 1586.385, p < 0.001$ ; RMSEA = 0.037; CFI = 0.924; TLI = 0.913; SRMR = 0.036.

Satorra-Bentler  $\Delta\chi^2(29, N = 1934) = 34.453, p = 0.223$ . In the scalar-invariance model, all standardized factor loadings were sufficient, ranging from 0.53 to 0.83 in W1, and from 0.57 to 0.84 in W2. Thus, the CES-D measure was adequate in the current sample: the factor structure replicated what has been widely found (Shafer, 2006) and the measurements in the two waves were highly comparable.

Yet, although this measure consists of three sub-dimensions, it is standard to construct a single total score (e.g. Chwastiak, Ehde, Gibbons, Sullivan, Bowen, & Kraft, 2002; Crawford, Cayley, Lovibond, Wilson, & Hartley, 2011). This approach was supported by the high correlations between the factors, ranging from 0.77 to 0.93 at W1 ( $\alpha = 0.94$ ), and from 0.74 to 0.93 at W2 ( $\alpha = 0.95$ ). Thus, an average score of the sixteen items was taken as an indicator of the level of depression. To correct for skewness, a reciprocal transformation was used and then reverse coded.<sup>3</sup> The transformed depression score was normally distributed and ranged from 0 to 0.75. A robustness check was performed to investigate whether different conclusions would be drawn if the three sub-dimensions are considered separately. This analysis showed a similar pattern of findings for the three subscales as for the overall score and therefore we only report the findings for the overall score.

**Loneliness** was assessed in both waves by a shortened version of the De Jong Gierveld Loneliness Scale (De Jong-Gierveld & Van Tilburg, 2006). Six items were used that measure two dimensions of loneliness; emotional loneliness (e.g. “I often feel rejected”) and social loneliness (e.g. “There are enough people I feel closed to”, reverse scored). Participants indicated on 4-point scales whether these situations apply to them (1 = “very applicable” to 4 = “not at all applicable”). A CFA specifying emotional and social loneliness as two separate factors was fitted on the twelve items from the two waves with a MTMM structure via correlated uniqueness. Measurement invariance across the two waves was also examined. The model representing partial scalar invariance (5 scalar and 1 metric item) had a good fit,  $LR\chi^2(51, N = 1935) = 82.909, p = 0.003$ ; RMSEA = 0.018; CFI = 0.994; TLI = 0.992; SRMR = 0.029, and was not worse than the configural one,<sup>4</sup>  $LR\Delta\chi^2(9, N = 1935) = 15.605, p = 0.076$ . In this model, standardized factor loadings were high, ranging from 0.61 to 0.82 at W1 and from 0.64 to 0.84 at W2. Given that the correlations between the two subscales were small in both waves (W1 0.34; W2 = 0.31), we examined emotional loneliness and social loneliness separately. Cronbach’s alphas of the emotional and social loneliness subscales were 0.76 and 0.78 for the first wave, and 0.82 and 0.82 for the second wave.

### 2.2.3. Control variables

We controlled for gender (0 = female; 1 = male), age at wave 1 (continuous), immigrant generation (0 = first generation; 1 = second generation), ethnicity (0 = Turks; 1 = Moroccan), and length of stay in the Netherlands (age at W1 minus age of arrival). Furthermore, educational attainment at W1 was used as an indicator of socioeconomic status (Ostrove, Adler, Kuppermann, & Washington, 2000). It was coded as an ordinal variable<sup>5</sup> (low, medium, and high) and the low education category was taken

<sup>3</sup> “Transformed depression” = 1 – (1/“original depression”). In both waves the skewness before the transformation was 1.9 and after the transformation it was in both waves 0.7. The correlations between the untransformed score and the transformed score were 0.943 and 0.941 for wave 1 and wave 2, respectively.

<sup>4</sup> The configural model fit:  $LR\chi^2(42, N = 1935) = 67.304, p = 0.008$ ; RMSEA = 0.018; CFI = 0.995; TLI = 0.993; SRMR = 0.022.

<sup>5</sup> Three variables were used to construct the variable “education attainment”. For the respondents who already completed their education, their highest level of completed education was used. For the respondents who were still in school, the education levels that they were following were used. For the respondents who were educated outside the Netherlands, their education attainments were matched with the level of education in the Dutch system. Ten respondents had missing data on education attainment.

as the reference group. In addition, at W1 perceived discrimination was assessed by six items. These items ask about how often respondents experienced discrimination because of their ethnic background in six settings: “applying for a job or internship”, “at work”, “at school, in class”, “on the street, in shops, on public transportation”, “organization, club, sports”, and “nightlife, nightclubs”. Three response options were available: “1 = no, never”, “2 = yes, occasionally”, and “3 = yes, quite often”. Similar to the life satisfaction measure, this scale was regarded as a formative rather than a reflective scale ( $\alpha = 0.81$ ). An average score was taken across the six items as an indicator of perceived discrimination ( $M = 1.34$ ,  $SD = 0.41$ ).

### 2.3. Analysis

Using the eight items of national and ethnic identification, we conducted Latent Profile Analyses (LPA) on the W1 sample<sup>6</sup> to identify groups of respondents displaying similar patterns on the eight items (identity profiles). LPA provides model fit indices allowing the optimal number of latent profiles to be chosen by comparing these indices. In the current study, five criteria were considered for the model selection; AIC, BIC, Bootstrap Likelihood Ratio Test (BLRT), entropy, and how interpretable the profiles are theoretically (Wang & Wang, 2012). The model with a lower value of AIC and BIC is preferred. BLRT compares the fit of models with  $k$  and  $(k - 1)$  profiles. A significant result suggests that the model with  $k$  profiles is better than the one with  $(k - 1)$  profiles. In case of inconsistency between the suggestions given by the model indices, BLRT and BIC are recommended to be the best indicators (Nylund et al., 2007). Entropy indicates the certainty with which the subjects can be classified into the profiles. Assigning individuals to different profiles and using these for the analyses is appropriate only when entropy and certainty are high. Entropy above 0.8 is regarded as high and above 0.6 is considered medium (Clark, 2010).

We conducted both confirmatory and exploratory LPA.<sup>7</sup> The difference between the two analyses is that the exploratory analysis freely estimates the means of the items in the extracted profiles, whereas in the confirmatory analysis the means of the items in the profiles are specified based on theoretical reasons. It should be noted that LPA is mostly used for exploratory purposes because it discerns the best fitting pattern of inter-correlations between the items. The confirmatory method allows researchers to test theoretically hypothesized profile patterns (Finch & Bronk, 2011).

A series of confirmatory LPA (Finch & Bronk, 2011) was first estimated based on Hurnik's (Berry's, 1997) theoretical model of four identification orientations, as this is our theoretical starting point. However, there is no single way of translating this theoretical model into a confirmatory LPA model. Therefore, we examined three possible model specifications (see Table 1). The difference between the three models concerns the way in which each identity profile is defined in relation to the other profiles. Concerning the model specification 1, the values of the corresponding items of national identification were constrained to be equal between dual identity and national identity, and between ethnic identity and disengagement; the values of the corresponding items of ethnic

identification were constrained to be equal between dual identity and ethnic identity, and between national identity and disengagement. For model specification 2, the average score of the four items of national identification was constrained to be equal between dual identity and national identity, and between ethnic identity and disengagement; the average score of four item of ethnic identification was constrained to be equal between dual identity and ethnic identity, and between national identity and disengagement. The model specification 3 included one constraint on top of specification 2. The average score of national identification was set to be equal to the average score of ethnic identification in the dual identity profile and in the disengagement profile. The crux of the three model specifications is that the value of national identification and of ethnic identification is constrained to be either high or low, and the three specifications differ in how “high” and “low” were estimated.

Subsequently, a series of exploratory latent profile models were estimated (Collins & Lanza, 2010) using the responses of the eight identification items and with no constraints set for the profile extraction. We estimated models identifying two, three, four and five latent profiles, respectively. The optimal number of profiles was determined by comparing the model fit indices and the exploratory models were further compared to the three models of the confirmatory LPA. The profiles identified by the best-fitting model were accepted as the empirically most likely ones.

To compare the psychological adjustment of participants with different identity profiles, the participants were assigned to the most fitting latent profile based on the classification probabilities (posterior probabilities). This is regarded as reasonable if entropy is high (Wang & Wang, 2012).<sup>8</sup> All analyses were conducted in Mplus version 7.3 (Muthén & Muthén, 1998–2012).

## 3. Results

### 3.1. Descriptive findings

The descriptive findings are presented in Table 2. The average score of participants' ethnic identification did not correlate with their national identification. The pattern of correlations between ethnic and national identification and the psychological outcomes were rather similar across the two waves and overall indicate that higher group identifications were associated with higher psychological well-being.

### 3.2. Latent profile analysis

The log likelihood value, AIC, BIC, Bootstrap Likelihood Ratio Test (BLRT) and entropy of the three model specifications of the confirmatory LPA are presented in Table 3 (bottom part). The model fit of these three specifications did not differ much and the estimated profile sizes of the specifications were similar. For specification 1, the percentages of respondents in the dual identity, national identity, ethnic identity, and disengagement profiles were 50%, 15%, 26%, and 10%, respectively. The corresponding percentages were 49%, 15%, 26% and 10% for specification 2, and 43%, 12%, 33%, and 11% for specification 3.

For the exploratory LPA, models with two, three, four, and five latent profiles were compared to identify the profile that provided the best fitting model and interpretable results. As shown in Table 3, the findings indicate that a 4-profile solution fitted the

<sup>6</sup> In a simulation study, Nylund, Asparouhov, and Muthén (2007) tested different indicators (e.g., AIC, BIC, BLRT) under three different sample sizes ( $n = 200, 500, 1000$ ). The reliability of the indicators increase as the sample sizes increases. When  $n = 1000$  and for a continuous 8-item model, BIC and BLRT correctly identified the  $k$  class model 85% and 95% of times, respectively. Our current sample contains 1939 respondents and we also have an 8-item model. This means that our sample size has sufficient power to detect the number of latent profiles correctly.

<sup>7</sup> The variances of the items were constrained to be the same across the profiles. This is because we do not have theoretical reason to doubt that immigrants in one profile would have more varying responses on the items than immigrants in another profile, so we follow the default LPA setting which helps with model convergence.

<sup>8</sup> We did not include the outcome variables as a part of the LPA estimation because LPA solutions are sensitive to the inclusion of outcomes variables (Wang & Wang, 2012). The analysis would be problematic as the solution changes as different outcome variables are included.

**Table 1**

A Conceptual representation of the item means or average item means of national and ethnic identification of the profiles for the three confirmatory LPA specifications.

	Specification 1				Specification 2				Specification 3															
	National Items		Ethnic Items		National Average score of 4 items		Ethnic Average score of 4 items		National Average score of 4 items		Ethnic Average score of 4 items													
	1	2	3	4	1	2	3	4	1	2	3	4												
Dual identity	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	H <sub>4</sub>	H <sub>5</sub>	H <sub>6</sub>	H <sub>7</sub>	H <sub>8</sub>	H <sub>1</sub>															
National ident.	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	H <sub>4</sub>	L <sub>5</sub>	L <sub>6</sub>	L <sub>7</sub>	L <sub>8</sub>	H <sub>1</sub>					H <sub>1</sub>										H <sub>1</sub>
Ethnic ident.	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	H <sub>5</sub>	H <sub>6</sub>	H <sub>7</sub>	H <sub>8</sub>	L <sub>1</sub>					H <sub>2</sub>										L <sub>1</sub>
Disengagement	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>	L <sub>6</sub>	L <sub>7</sub>	L <sub>8</sub>	L <sub>1</sub>					L <sub>2</sub>										L <sub>1</sub>

Note. “H” and “L” refer to high and low, respectively. The three specifications are independent from each other. For example, H<sub>1</sub> of the specification 1 is not equal to H<sub>1</sub> of the specification 2 or 3. However, within each specification, the same subscript indicates that the values are equivalent.

**Table 2**

Correlations, means, and standard deviations (SD) for the main variables.

W1 Sample (N = 1939)	1	2	3	4	5	6	7	Mean	SD	Range
1 National Ident.	–	–0.02	–0.11***	0.17***	–0.08***	–0.12***	–0.15***	3.72	0.74	1–5
2 Ethnic Ident.		–	0.02	0.09***	–0.07**	–0.03	–0.12***	4.15	0.78	1–5
3 Discrimination			–	–0.16***	0.17***	0.07**	0.08***	1.34	0.41	1–3
4 Life Satisfaction				–	–0.32***	–0.28***	–0.27***	7.13	1.01	1–10
5 Depression					–	0.40***	0.24***	0.21	0.20	0–0.75
6 Emotional Loneliness						–	0.26***	2.03	0.64	1–4
7 Social Loneliness							–	1.97	0.60	1–4
W2 Sample (N = 844)	1	2	3	4	5	6	7	Mean	SD	Range
1 National Ident. (w1)	–	–	–	0.07	–0.11**	–0.08*	–0.10**	–	–	–
2 Ethnic Ident. (w1)		–	–	0.13***	–0.07	–0.03	–0.08*	–	–	–
3 Discrimination (w1)			–	–0.08*	0.08*	.04	0.04	–	–	–
4 Life Satisfaction (w2)				–	–0.35***	–0.25***	–0.27***	7.22	1.29	1–10
5 Depression (w2)					–	0.43***	0.22***	0.22	0.21	1–0.75
6 Emotional Lonel. (w2)						–	0.25***	1.98	0.69	1–4
7 Social Lonel. (w2)							–	1.94	0.64	1–4

Note. All constructs were measured by more than one item; for each construct, average scores over the corresponding items were calculated for each individual. The upper panel reports Means, Standard Deviations, and correlations of variables at Wave 1 (W1). The lower panel reports Means and Standard Deviations of variables at Wave 2 (W2), as well as the correlations between predictor at W1 and outcome variables at W2.

\* p < 0.05.  
 \*\* p < 0.01.  
 \*\*\* p < 0.001.

**Table 3**

Comparison of the exploratory and confirmatory latent profile analysis models.

	LogL	# parameter	AIC	BIC	Entropy	BLRT
<i>Exploratory LPA</i>						
2-profile	–18333.9	25	36717.8	36857.1	0.902	–
3-profile	–17179.6	34	34427.2	34616.5	0.934	0.00
<b>4-profile</b>	<b>–16648.4</b>	<b>43</b>	<b>33382.7</b>	<b>33622.2</b>	<b>0.905</b>	<b>0.00</b>
5-profile	Does not converge					
<i>Confirmatory LPA</i>						
Specification 1	–17222.718	27	34499.435	34649.823	0.861	–
Specification 2	–17210.479	39	34498.959	34716.186	0.862	–
Specification 3	–17457.270	37	34988.540	35194.627	0.842	–

Note. LogL = Log likelihood value; # parameter = number of free parameter; BLRT = bootstrap likelihood ratio test. In bold is the LPA model that is accepted. The 4-profile solution is the preferable model.

data best and that the assignment of respondents to the different profiles had high certainty (entropy).

The four-profile solution of the exploratory LPA had a smaller AIC and BIC than the three specifications of the confirmatory LPA. Moreover, given that a constrained k-profile solution is a nested model of the general k-profile solution (Finch & Bronk, 2011), it was possible to statistically compare the fit of the 4-profile exploratory model with the 4-profile confirmatory model using Chi-square tests. The likelihood ratio tests indicated that the exploratory 4-profile solution had a better fit (exploratory vs. confirmatory specification 1:  $LR\Delta\chi^2(16, N = 1939) = 574.3, p < .001$ ; exploratory vs. confirmatory specification 2:  $LR\Delta\chi^2(4, N = 1939) = 562.1, p < .001$ ; exploratory vs. confirmatory specification 3:

$LR\Delta\chi^2(6, N = 1939) = 808.9, p < .001$ ). Thus, all model indices suggest that the 4-profile solution of the exploratory LPA was the preferable model. Therefore this solution was used as the final model identifying the identity profiles of the respondents.

Fig. 1 presents the means of the eight items and the four profiles of this model. Profile 1 was labelled ‘ethnic identity’ (13%) because it contained individuals whose national identification was the lowest of all four groups and whose ethnic identification was one of the highest. Profile 2 (15%) represents individuals whose national identification was relatively high while their ethnic identification was the lowest among all four groups. This profile was labelled ‘national identity’, but it is noteworthy that the national identification of these individuals was not substantially higher than the other

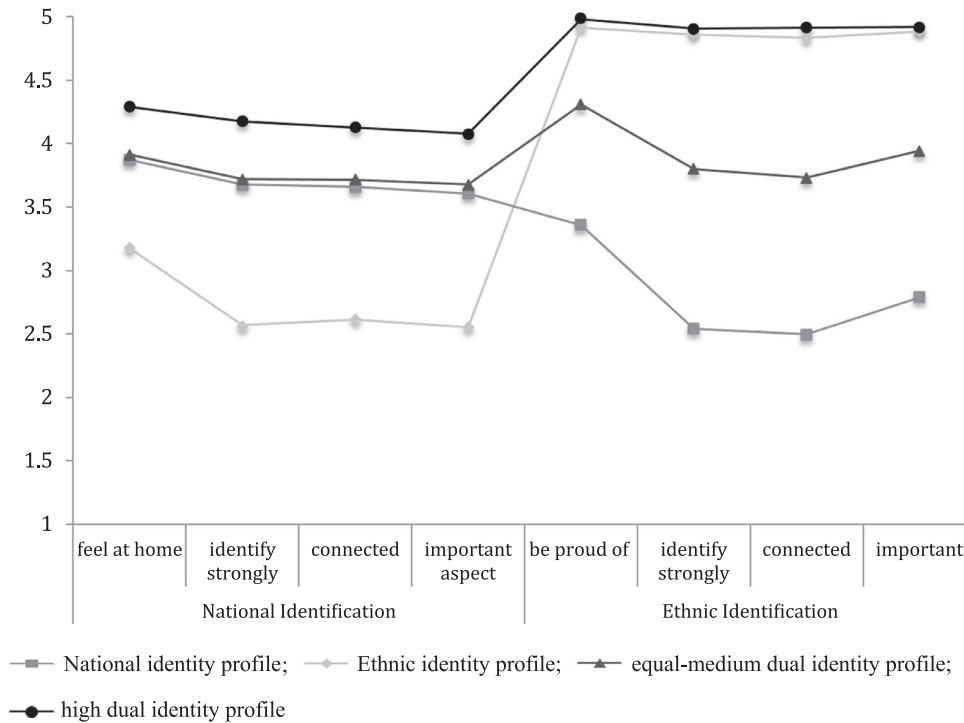


Fig. 1. The four latent profiles from the exploratory analysis and based on scorings on the four items for national identification and the four items for ethnic identification.

profiles. Profile 3 (47%) contained individuals whose national identification was relatively high while their ethnic identification was at a medium level. Furthermore, both identifications were similar and around the neutral mid-point of the scale. This option was labeled “equal-medium dual identity”. Finally, profile 4 (25%) involves individuals whose national identification as well as ethnic identification were the highest of the four groups. To highlight the difference with the equal-medium dual identity we labeled this as “high dual identity”. As expected these findings show that there were no respondents with a disengagement profile and that equal-medium dual identity was most often adopted, followed by high dual identity and then national identity and ethnic identity. For the restricted sample of respondents who not only participated in the first wave but also in the second one, these percentages were similar (48%, 22%, 16%, and 13%, respectively).

### 3.3. Psychological adjustment

To examine psychological adjustment we compared both cross-sectionally (in W1) and over-time (in W2) the psychological outcomes of respondents with the different identification profiles (in W1). A general linear model was estimated on the W1 sample and the W2 sample, respectively. Gender, age, immigrant generation, length of stay, ethnicity, education attainment, and perceived discrimination were included as control variables. Life satisfaction, depression, emotional loneliness, and social loneliness were examined as separate outcomes. The findings are summarized in Table 4 and the Wald tests reported are joint tests which indicate whether there is an overall difference between the profiles. The results show that the type of profile was a significant predictor for seven out of eight psychological adjustment outcomes; life satisfaction at both waves, depressive symptoms at both waves, social loneliness at both waves, and emotional loneliness at W1.

Post hoc comparisons with Bonferroni corrections (separately for each dependent variable with  $p < 0.008$  level) indicated that with one exception all the significant differences were between

the high dual identity orientation and the other three orientations, and that these other orientations did not differ significantly from each other. Thus, in the W1 sample, respondents with a high dual identity had a significantly higher level of life satisfaction, a lower level of depressive symptoms, a lower sense of emotional loneliness, and a lower sense of social loneliness, than ethnic, national and equal-medium dual identifiers (for the latter there was no difference for depressive symptoms). To illustrate these findings, Fig. 2 presents the results for life satisfaction for individuals with different identity profiles.

When the identity profiles at W1 were used to predict respondents' psychological adjustments at W2, respondents with a high dual identity profile did not differ from the ones with an ethnic identity profile on all indicators of psychological adjustments (Table 4).<sup>9</sup> However, high dual identifiers continued to have a higher level of life satisfaction and a lower level of social loneliness than those with a national identity profile. In addition, respondents with a high dual identity profile had a higher level of life satisfaction and a lower level of depressive symptoms than the ones with an equal-medium dual identity profile. Further, respondents with equal-medium dual identity showed a lower level of social loneliness at W2 than those with the national identity profile.

We calculated the effect size  $r$  to quantify the magnitude of the differences between the profiles. Given that most of the significant differences were found between the high dual identifiers and the others, the high dual identity profile was taken as the reference group. As can be seen in Table 4, most of the significant effects were small with an effect size around 0.10 (Cohen, 1988). Although more significant differences were found when psychological adjustment was examined with the larger sample at W1, compared to the smaller sample at W2, the effect sizes were quite comparable across the two waves. This suggests that the differences in

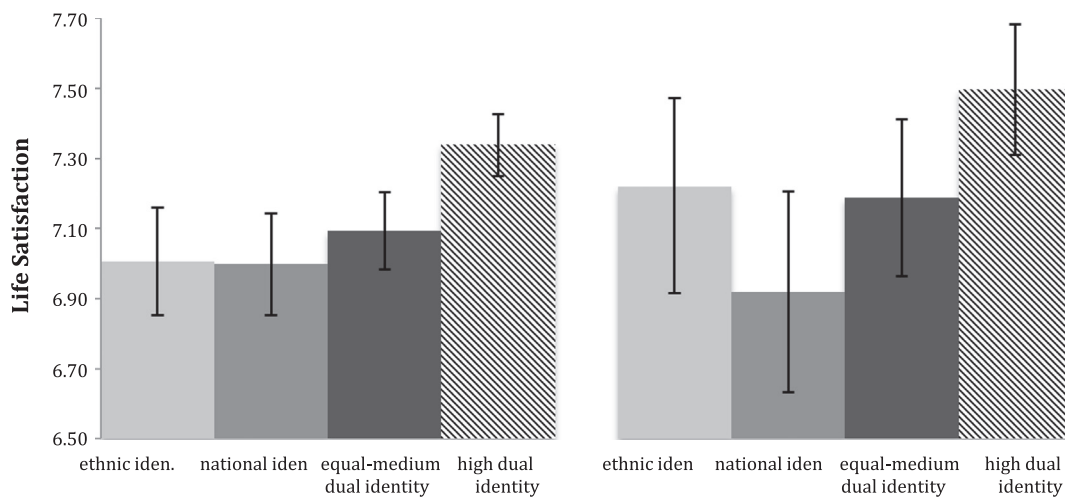
<sup>9</sup> We did not control for psychological adjustment at Wave 1 because our focus was not on changes in adjustment predicted by identity profiles. Rather we examined whether there was a robust, consistent relationship between identifications at Wave 1 and psychological adjustment at Wave 2.

**Table 4**

Summaries of the general linear models using the acculturation profiles to predict psychological adjustment.

	N		Life satisfaction				Depression				Emotional loneliness				Social loneliness			
	W1	W2	W1		W2		W1		W2		W1		W2		W1		W2	
			M	ES	M	ES	M	ES	M	ES	M	ES	M	ES	M	ES	M	ES
<i>Profiles</i>																		
Ethnic ident.	247	113	7.02 <sup>a</sup>	0.09	7.22	0.06	0.23 <sup>a</sup>	0.07	0.23	0.09	2.10 <sup>a</sup>	0.07	1.96	0.03	1.96 <sup>a</sup>	0.07	1.94	0.04
National ident.	294	139	7.00 <sup>b</sup>	0.11	6.92 <sup>a</sup>	0.14	0.23 <sup>b</sup>	0.08	0.23	0.09	2.08 <sup>b</sup>	0.07	2.06	0.07	2.07 <sup>b</sup>	0.12	2.10 <sup>ab</sup>	0.11
Equal-Medium dual identity	916	411	7.09 <sup>c</sup>	0.10	7.19 <sup>b</sup>	0.09	0.20	0.05	0.23 <sup>a</sup>	0.10	2.04 <sup>c</sup>	0.07	1.99	0.05	2.02 <sup>c</sup>	0.13	1.92 <sup>a</sup>	0.03
High dual identity (reference)	482	185	7.34 <sup>abc</sup>	–	7.50 <sup>ab</sup>	–	0.18 <sup>ab</sup>	–	0.17 <sup>a</sup>	–	1.94 <sup>abc</sup>	–	1.90	–	1.83 <sup>abc</sup>	–	1.87 <sup>b</sup>	–
<i>Wald TEST (df = 3)</i>																		
Profiles			30.21 <sup>***</sup>		16.03 <sup>**</sup>		15.78 <sup>**</sup>		11.07 <sup>*</sup>		15.27 <sup>***</sup>		4.68		42.77 <sup>***</sup>		11.28 <sup>*</sup>	
<i>Parameter estimate of controls</i>																		
Gender (male)			0.03		0.04		–0.08 <sup>***</sup>		–0.06 <sup>***</sup>		–0.11 <sup>**</sup>		–0.06		0.05		0.10 <sup>*</sup>	
Generation (2nd)			0.03		0.00		0.01		0.00		–0.02 <sup>**</sup>		–0.04		–0.03		–0.04	
Ethnicity (Moroccan)			0.01		–0.09		–0.02		–0.01		–0.09 <sup>**</sup>		–0.00		–0.10 <sup>***</sup>		–0.05	
Educ (Medium)			0.15 <sup>**</sup>		0.21		–0.01		–0.04 <sup>*</sup>		–0.09 <sup>**</sup>		–0.10		–0.09 <sup>**</sup>		–0.20 <sup>***</sup>	
Educ (High)			0.14 <sup>**</sup>		0.17		–0.01		–0.05 <sup>**</sup>		–0.19 <sup>***</sup>		–0.22 <sup>***</sup>		–0.26 <sup>***</sup>		–0.34 <sup>***</sup>	
Age			–0.02 <sup>**</sup>		0.00		0.00		0.00		0.01 <sup>*</sup>		–0.01 <sup>*</sup>		0.01		0.01 <sup>*</sup>	
Length of stay			0.01 <sup>*</sup>		0.00		0.00		0.00		–0.01 <sup>*</sup>		–0.01 <sup>*</sup>		–0.01 <sup>*</sup>		–0.01 <sup>*</sup>	
Discrimination			–0.42 <sup>***</sup>		–0.33 <sup>**</sup>		0.10 <sup>***</sup>		0.07 <sup>***</sup>		0.17 <sup>**</sup>		0.13 <sup>*</sup>		0.13 <sup>***</sup>		0.08	

Notes. For the means of the psychological adjustment of the profiles, the control variables take their mean levels in the W1 sample and the W2 sample for the first- and the second-wave analyses, respectively. M = Mean. ES = Effect Size (effect size of the differences between each of the three profiles and the reference profile “high dual identity”). a, b, c indicate where there is significant difference between the mean levels in post hoc comparisons ( $p < 0.008$ , Bonferroni correction). Educ (Medium) is the dummy variable of education attainment (medium vs. low education). Educ (High) is the other dummy variable of education attainment (high vs. low education).

\*  $p < 0.05$ .\*\*  $p < 0.01$ .\*\*\*  $p < 0.001$ .**Fig. 2.** The four identity profiles (at Wave 1) and general life satisfaction at Wave 1 and 2.

psychological adjustment between respondents having different identity profiles remained similar across the two waves.

### 3.4. Additional analysis: national identification and ethnic identification

For further understanding the nature of the high dual identity profile we examined the associations of ethnic identification and national identification on psychological adjustment. The beneficial effects of the high dual identity might be the result of an additive effect or a reinforcement (multiplicative) effect. The former would imply that ethnic and national identification have independent statistical main effects on psychological adjustment, while the latter implies a significant interaction effect between ethnic and national identification.

In stepwise multiple regression analyses, ethnic identification and national identification as two continuous (centered) predictors together with the control variables were first entered in the regression equation, and in Step 2 the interaction between both identifications was added. The results are presented in Table 5. Apart from the association of national identification with life satisfaction and the association of ethnic identification with emotional loneliness (at W2), both higher ethnic identification and higher national identification were independently associated with better psychological adjustment. Furthermore, only one out of eight interactions had a significant effect (on emotional loneliness). These findings are most clearly in line with an additive model in which higher ethnic identification as well as higher national identification are separately associated with better psychological adjustment.



**Table 5**  
Coefficients of regression analyses using national identification and ethnic identification as continuous variables to predict psychological adjustment.

	Life satisfaction				Depressive symptoms				Emotional loneliness				Social loneliness			
	W1		W2		W1		W2		W1		W2		W1		W2	
	Step1	Step2	Step1	Step2	Step1	Step2	Step1	Step2	Step1	Step2	Step1	Step2	Step1	Step2	Step1	Step2
Gender (male)	0.04	0.04	0.05	0.05	-0.08	-0.08	-0.07	-0.07	-0.11	-0.11	-0.06	-0.06	0.04	0.04	0.11	0.11
Generation (2nd)	0.05	0.05	0.01	0.01	0.01	0.01	0.00	0.00	0.02	0.02	0.04	0.04	0.02	0.02	0.03	0.03
Ethnicity (Moroccan)	-0.02	-0.02	-0.10	-0.10	-0.02	-0.02	-0.01	-0.01	-0.08	-0.08	-0.04	-0.04	-0.08	-0.08	-0.05	-0.05
Educ (Medium)	0.14	0.14	0.20	0.19	-0.01	-0.01	-0.03	-0.03	-0.09	-0.09	-0.11	-0.10	-0.08	-0.08	-0.19	-0.20
Educ (High)	0.14	0.14	0.16	0.16	-0.01	-0.01	-0.05	-0.05	-0.19	-0.19	-0.21	-0.22	-0.25	-0.26	-0.34	-0.34
Age	-0.02	-0.02	-0.00	-0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Length of stay	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01	-0.01
Discrimination	-0.41	-0.41	-0.31	-0.32	0.10	0.10	0.06	0.06	0.16	0.17	0.11	0.11	0.12	0.12	0.06	0.05
National Identif.	0.20	0.19	0.13	0.10	-0.01	-0.01	-0.03	-0.03	-0.06	-0.06	-0.05	-0.05	-0.13	-0.10	-0.08	-0.08
Ethnic Identif	0.14	0.14	0.22	0.22	-0.02	-0.02	-0.02	-0.02	-0.04	-0.04	-0.05	-0.05	-0.11	-0.11	-0.08	-0.08
National Ethnic	0.06	0.06	0.10	0.10	-0.01	-0.01	-0.01	-0.01	-0.07	-0.07	0.05	0.05	0.03	0.03	0.02	0.02

Note. All predictors are centered at their mean levels. Educ (Medium) is the dummy variable of education attainment (medium vs. low education). Educ (High) is the other dummy variable of education attainment (high vs. low education). National Ethnic refers to the interaction between national and ethnic identifications.

\*  $p < 0.05$ .

\*\*  $p < 0.01$ .

\*\*\*  $p < 0.001$ .

#### 4. Discussion

Using large national samples from the Netherlands we examined dual identity and psychological adjustment among members of two similar immigrant-origin groups. Group identities constitute an important source of psychological well-being in the face of life difficulties and challenges (Cruwys et al., 2014; Haslam et al., 2009) and we aimed to make a contribution to the growing number of studies on the positive health implications of social identities (Jetten et al., 2012).

Using a person-oriented approach we first set out to identify the identity profiles of the respondents and four profiles were found. As expected disengagement (or individualization) in which individuals do not identify with their ethnic group and also not with the host nation did not emerge as a separate profile (Lee, Chen, He, Miller, & Juon, 2013). In addition, more than one form of dual identity was detected (Schwartz, Unger, Zamboanga, & Szapocznik, 2010). In fact, the largest group of respondents (47%) showed comparable moderate (or neutral) levels of ethnic and national identification. The prominence of this 'equal-medium dual identity' profile is in line with other research (e.g. Ng Tseung-Wong & Verkuyten, 2013) and supports Rudmin's (2003) argument that people can be relatively neutral to both groups or cultures. This finding indicates that dual identity does not have to imply high levels of group identification which might account for some of the divergent findings in the literature.

Group identification may be related to a wide range of psychological outcomes and we focused on life satisfaction, depression and loneliness as key aspects of psychological adjustment. Because of the longitudinal nature of the data we were able to examine the associations between the identification profiles and these outcomes at the same time point as well as with a prediction model over time (Meeus, 2016). Controlling for important variables such as discrimination and immigrant generation, the overall pattern was very clear: individuals with "high dual identity" showed higher life satisfaction, fewer depressive symptoms, and less emotional and social loneliness, compared to individuals with one of the other three profiles. Importantly, the overall pattern was similar in the over-time analysis: individuals with high dual identity at the first wave had higher life satisfaction, fewer depressive symptoms and less social loneliness at Wave 2 than those with a national identity and equal-medium dual identity profile. Although due to the reduced sample size some of the findings were not significant in the second wave, the comparable effect sizes across the two waves lent support to this interpretation of a similar pattern. These findings suggest that the psychological benefits of adopting the high dual identity are rather stable and enduring (Meeus, 2016).

It has been argued that dual identity is psychologically the most healthy one because it provides immigrants with "the best of both worlds" (Berry et al., 2006; Nguyen & Benet-Martinez, 2013). However, others have argued that combining two cultural identities and dealing with different normative expectations can be stressful and lead to experiences of identity conflict (Hirsh & Kang, 2015). There is empirical evidence for both lines of reasoning (Nguyen & Benet-Martinez, 2013; Rudmin, 2003; Yoon, Langrehr, & Ong, 2011) and this might be due to the existence of different forms of dual identity. We identified two forms, namely high dual identity and equal-medium dual identity. The former group of individuals demonstrated the best psychological adjustment which supports the reasoning about positive psychological implications of dual identity. The latter group of individuals did not significantly differ from those who had a national identity profile or an ethnic identity profile, and this is more in agreement with the reasoning that developing a dual identity might be difficult and stressful.

Apparently, the benefits of moderately identifying with both one's ethnic community and the host society does not outweigh the stress of standing in-between two cultures. As a result, equal-medium dual identifiers are not better adjusted psychologically than those who distance themselves from one side and strongly identify with the other. In contrast, for respondents who highly identify with both groups, the benefits seem to outweigh the burdens with higher psychological adjustment as a result. Future studies could examine this interpretation further by considering immigrants' feelings about how conflicting or integrated their ethnic and national identities are. For example, the constructs of bicultural identity integration (Benet-Martínez & Haritatos, 2005) and identity compatibility (Martinovic & Verkuyten, 2012) might be useful for developing a further understanding of the processes involved in the two different dual identity profiles.

The positive findings for high dual identity are in line with a growing body of research that shows that a person's sense of social identity provides psychological resources for addressing challenges and adversities (Haslam et al., 2009). This research, conducted in different populations and contexts, has demonstrated that group identification has positive effects on well-being and health (see Cruwys et al., 2014; Haslam et al., 2009). Furthermore, this research has suggested that group identifications are additive in the sense that identification with a greater number of meaningful groups predicts higher psychological well-being. An additive pattern was also found in our additional analyses in which we used ethnic identification and national identification as separate predictors of psychological adjustment. Both group identifications were found to be positively and independently associated with adjustment and the interaction between both identifications did not predict adjustment (with one exception). This suggests that the psychological benefits of high dual identity should be understood in terms of the number of meaningful group memberships rather than in terms of the positive effects of one identity being reinforced by another identity.

#### 4.1. Limitations

The current study has some limitations. First, the direction of influence between the identity profiles and psychological adjustment remains unclear. It is commonly theorized that group identifications have implications for psychological adjustment and there is experimental evidence for this (Jetten et al., 2012). However, it also is possible that people who are psychologically better-adjusted feel more attached to the host society and their ethnic community. Nevertheless, the fact that the psychological differences between respondents with different identity profiles was found not only at the same time point but also (approximately) three years later, provides some confidence in the hypothesized pattern of influence. Yet, it should be acknowledged that there was a large percentage of dropouts with less than half of the original sample participating in the second wave. However, the demographic composition, the mean level of psychological adjustment, as well as the findings (i.e. effect sizes) for the four identity profiles were quite comparable between the sample that completed both waves and the sample that completed only the first wave.

Second, it should be noted that all ethnic and national identity items and most of the adjustment measures were worded in the positive direction. This might mean that, for example, acquiescence bias has played a role in the pattern of findings. Further, the size of the associations between ethnic and national identification and the identity profiles with the psychological adjustment variables were modest. One reason for this is that we took various possible confounding variables into account, such as discrimination (Nguyen

& Benet-Martínez, 2013). Thus, our results show that ethnic and national identification matter on top of other important correlates of immigrants' group identifications and psychological adjustment.

Third, the current study was conducted in the Netherlands and among two immigrant-origin groups. Similar to all nation-based research, including the many studies in the USA, this means that it is unclear to what extent our findings generalize to other national contexts and to groups with different migration histories and different disadvantaged positions in the host society. For example, the psychological benefits of dual identity might depend on living in a country with multicultural policies or whether a country defines itself as a settler or non-settler society (Berry et al., 2006). In a context in which members of immigrant-origin groups face systematic and pervasive discrimination it might be healthier to only identify with one's ethnic minority community in which a sense of self-esteem, purpose, belonging and social support is found. The role of group identities is contextually bound and this means that the type of psychological resources that identities afford will depend on the social context (Verkuyten, 2005). Yet, this does not imply that there is no stability and that depending on the situation people constantly re-define and change their group identities. Individuals are motivated to maintain meaningful group memberships with the associated internalized group identities. For example, research has shown that there is considerable trait-like stability in ethnic identity (see Meeus, 2011; Quintana, 2007) and group identifications tend to be more enduring because the broader societal context in which they are located are relatively stable (Reynolds et al., 2010).

Fourth, we examined psychological adjustment and not the equally important domain of sociocultural adjustment. The processes of adjustment in both domains might differ and the adjustments in one domain (e.g., lower feelings of social loneliness) might also influence adjustments in the other domain (e.g., lack of behavioral problems). Thus, future research could examine identity profiles in relation to both psychological and sociocultural adaptation.

#### 5. Conclusion

Using large national samples of two immigrant-origin groups in the Netherlands, we examined identity profiles in terms of ethnic identification and national identification. The findings indicate that four profiles exist: ethnic identity, national identity, equal-medium dual identity, and high dual identity. Compared to the three other profiles, high dual identifiers had, at the same time point and over time, higher life satisfaction, lower depression and less social and emotional loneliness. The three other profiles did not differ much in psychological adjustment. This pattern of results supports the usefulness of differentiating between two forms of dual identity which helps to reconcile the somewhat inconsistent findings about the role of dual identity for psychological adjustment. The findings further support the social identity claim that social identifications can have benefits for psychological well-being and that identification with a greater number of meaningful groups is associated with higher well-being.

#### Note

Contributions of the three authors: Shiyu Zhang conducted the analysis and wrote the methods and results sections. Maykel Verkuyten wrote the Introduction and Discussion sections. Jeroen Weesie supervised and performed some of the statistical analyses. The study was not pre-registered.

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