Data and Participants

The New Immigrant Survey Netherlands (NIS2NL; Lubbers, Gijsberts, Fleischmann & Maliepaard, 2018) was collected in 2013/14, 2015, and 2016 and targeted immigrants from Bulgaria, Poland, Spain, and Turkey within the first five to ten months after their registration in the Netherlands. The addresses of possible respondents were retrieved from the municipal registry, a record of all persons who are officially registered in the Netherlands. For the first wave, all Bulgarian, Spanish, and Turkish immigrants that registered between January 2013 and January 2014 as well as a random subsample of Polish immigrants that registered in that period were approached in two batches starting in November 2013 and March 2014, respectively. Participants who agreed to participate in subsequent waves and were still living in the Netherlands were approached from mid-2015 onwards for Wave 2. For Wave 3, respondents were approached starting in September 2016.

Participants completed written questionnaires either online or on paper. All correspondence took place in the official language of their origin country. The overall response rate for Wave 1 was 32 percent, resulting in a sample of 4,808 participants. Given the written survey mode and the difficulty to reach this target population, this response rate was quite acceptable (Stoop, 2005). In the second wave, 53 percent (*N*=2,551) and in Wave 3, another 41 percent (*N*=923) of the remaining participants dropped out. A large part of the dropout rates (about 29 percent between Wave 1 and 2 and 26 percent between Wave 2 and 3) could be explained by participants leaving the Netherlands.

The final sample used (*N*=1,028) included 25 ethnic Turks from Bulgaria. Given their cultural and religious distinctiveness from ethnic Bulgarians and their shared characteristics (i.e.,

religious affiliation) with immigrants from Turkey as well as the small number, we included these Bulgarian Turks in the group of immigrants from Turkey.

Analysis of panel attrition

Parameter estimates in the cross-lagged panel model could potentially be biased due to panel attrition. To investigate whether panel attrition was selective, logistic regression was performed to predict dropout based on the variables included in our analysis. Table S2 shows parameter estimates of the logistic regressions of dropout in Wave 2 and Wave 3, respectively. Participants who identified less with the Netherlands were more likely to drop out. Men were less likely to participate a second time as were lower educated compared to middle and higher educated respondents. Bulgarians were more likely to participate a second time compared to Spanish participants. Participants who were living for a longer period in the Netherlands were more likely to participate a third time compared to more recently arrived immigrants. Therefore, in terms of gender, level of education, country of origin and months since migration the sample became somewhat biased over time. As far as the main variables of interest are concerned, the results might be influenced by the selective attrition of those with lower scores on host-national identification.

Confirmatory Factor Analysis

A Confirmatory Factor Analysis (CFA) was performed to determine whether the latent constructs host-national, origin-national and religious identification were distinct and provide adequate measures that are comparable over time. In a first step, the CFA was conducted only using Wave 1 data. The model fit was not optimal ($\chi^2(6)=74.747$, $p<.001$, RMSEA=.106, CFI=.965, SRMR=.024). Based on modification indices, the covariance of the residuals of the items “how important is the following to your sense of who you are: the country where you

were born?" of the latent variable host-national identification and "How important is the following to your sense of who you are: current country of residence?" of the latent construct of origin-national identification was freed. Since both questions were phrased the same way, this modification can be justified by a common method factor (Kline, 2010). This resulted in a satisfactory model fit ($\chi^2(5)=1.551$, $p=.907$, RMSEA=.000, CFI=1.000, SRMR=.004).

Subsequently, the model was extended by including repeated measures from all three waves. The modification implemented for Wave 1 was also implemented for subsequent waves. Moreover, the Multi-Trait Multi-Method structure regarding longitudinal analysis was applied by using Correlated Uniqueness (Kline, 2010). Accordingly, items were allowed to correlate with themselves across different waves. All standardized items loaded significantly above .70 on their latent constructs. The final model fit was good ($\chi^2(78)=148.814$, $p<.001$, RMSEA=.030, CFI=.994, SRMR=.023).

Measurement invariance

In a first model, loadings, intercepts and residual variances of the items were allowed to vary across waves. In a second model, they were constrained to be equal across waves (fully constrained or scalar invariant model), resulting in a reasonably good model fit ($\chi^2(90)=158.786$, $p<.001$, RMSEA=.027, CFI=.994, SRMR=.026). The Satorra-Bentler scaled Chi-square difference test was used because of the MLR estimator (Satorra & Bentler, 2010). This difference test showed that the constrained model was an equally good fit to the data ($\Delta\chi^2(12)=17.762$, $p=.123$), and we therefore proceeded with this parsimonious scalar invariant model.

Assumption of stationarity in cross-lagged panel analysis

To test the structural assumption of stationarity, an unconstrained model in which all path coefficients and residual (co)variances were allowed to differ between waves was compared to a constrained model. The fit indices for both models were quite good (unconstrained model: $\chi^2(240)=553.778$, $p<.001$, RMSEA=.036, CFI=.979, SRMR=.022; constrained model: $\chi^2(277)=1506.657$, $p<.001$, RMSEA=.066, CFI=.911, SRMR=.090). The Satorra-Bentler scaled Chi-square difference test showed that the constrained model fit the data significantly worse than the unconstrained one ($\Delta\chi^2(37)=1173.074$, $p<.001$). However, since the model fit of the constrained model was still good, and since the paths differed across the waves only regarding two control variables (i.e., higher education and age), stationarity was assumed to keep the overall model parsimonious (Little, Preacher, Selig & Card, 2007).

Robustness checks

With the aim of examining the robustness of the results, the cross-lagged panel model as described above was fitted again with three different specifications. In the first check, non-religious participants who by design did not respond to statements regarding their religious identification were treated as missing instead of being recoded to the lowest possible value. Regression coefficients of this alternative model can be found in Table S3 (left panel) and confirm most of our previous findings. A noticeable difference was, however, that there was, additionally, a significant positive lagged effect of religious on host-national identification. This suggested that at a low level of perceived identity incompatibility religious and host-national identification seem to be quite compatible but as soon as there is a high level of perceived identity incompatibility both identifications become more conflicting for participants.

As a second robustness check, the crossed-lagged panel model including interactions was tested using only variables measured at Wave 1 and 2. This was to investigate whether

losing another 41 percent of participants by including Wave 3 might have influenced the results. Regression coefficients across the two waves including main and control variables as displayed in Table S3 (right-hand panel) confirm our previous findings. As in the first robustness check, this higher-powered test also revealed a significant positive lagged effect of religious on host-national identification.

The third robustness test addressed the issue of group differences. The original model with the three latent constructs for host-national, origin-national and religious identification across three waves was too complex for the small sample sizes in each immigrant group. Thus, instead of the latent constructs, our three identification factors were measured as observed variables based on the mean score of the respective items. Table S4 shows the cross-lagged panel model predicting changes in host-national, origin-national and religious identification for immigrants from Bulgaria and Poland, and Table S5 shows the results for immigrants from Spain and Turkey.

The failure to take measurement error into account lowers the power to detect significant associations, as does the significantly reduced sample size. Differences in significance levels between these robustness checks and the main analysis should therefore be interpreted with caution. Across all groups, we find similarly strong auto-regressive paths, limiting our ability to detect cross-lagged effects. The main effects and interactions of perceived incompatibility fail to reach significance in all groups, but the magnitude and direction of the parameter estimates is similar to the findings in the main analysis. We therefore consider the findings regarding the role of perceived incompatibility for identity development to be robust across groups, even though they do not replicate exactly, because the difference in significance levels can be explained by lowered statistical power of the different modelling approach.

Other differences with the main model are as follows: Among Bulgarians, perceived incompatibility positively moderated the auto-regression of religious identification. Thus, the more incompatibility Bulgarians perceived, the more stable was their identification with their religion. Among Poles, there was a negative lagged effect of host-national identification on origin-national identification. This suggests that a stronger identification with the Netherlands weakened identification with Poland over time. Among Spaniards, a significant positive effect of religious identification on origin-national identification was found, implying that the stronger immigrants identified with their religion the stronger they identified with Spain over time. Among Turkish migrants, there was a significant positive direct effect of religious identification on host-national identification. This suggests that, at low levels of perceived incompatibility, the stronger Turks identified with their religion the more they identified with the Netherlands over time.

Results control variables

Regarding the control variables, Bulgarians and older participants identified more with the Netherlands. Bulgarians, Poles and Turks identified less with their country of origin compared to Spanish participants. Moreover, affiliates of other religions identified less with their origin country compared to non-religious participants. As far as religious identification was concerned, highly educated and younger participants identified less with their religion. Moreover, Polish and Turkish (compared to Spanish) participants identified stronger with their religion, and Christians and Muslims identified stronger with their religion compared to non-religious participants. However, compared to non-religious respondents, affiliates of other religions were less strongly identified with their religion.

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Appendix

Table S1. Descriptive statistics of the control variables included in the analyses at Wave 1.

Control variables at Wave 1	Range[a]	Mean (SD)	N
Female	0/1	.61	1028
Age	19-64	31.27 (7.95)	1028
Education (ref. low educated)			
Middle educated	0/1	.28	1028
High educated	0/1	.27	1028
Country of origin (ref. Spain)			
Bulgaria	0/1	.15	1028
Poland	0/1	.35	1028
Turkey	0/1	.22	1028
Religion (ref. No Religion)			
Christian	0/1	.60	1007
Muslim	0/1	.20	1007
Other	0/1	.01	1007
Months since migration	0-60	16.58 (12.36)	1028

Notes. [a] The range refers to the range of available values in the dataset.

Table S2. Logistic regression predicting dropout between Wave 1 and 2 (*N*=3482) and Wave 2 and 3 (*N*=1777).

	DV: dropout between Wave 1 & 2		DV: dropout between Wave 2 & 3	
	b	*S.E.*	*b*	*S.E.*
Host-national identification (t-1)	-.05*	.02	-.08**	.03
Origin-national identification (t-1)	.03	.02	.04	.02
Religious identification (t-1)	.04	.03	-.01	.04
Perceived identity incompatibility (t-1)	-.01	.02	-.06	.03
Control variables				
Female	-.12**	.04	-.12	.06
Age	.00	.00	.00	.00
Education (ref. Low educated)				
Middle educated	-.25***	.06	-.17*	.08
High educated	-.39***	.06	-.09	.09
Country of origin (ref. Spain)				
Bulgaria	-.16*	.08	.09	.11
Poland	-.13	.07	.07	.10
Turkey	-.14	.13	.04	.18
Religion (ref. No Religion)				
Christian	-.03	.07	-.11	.09
Muslim	.02	.14	-.39	.20
Other	-.02	.19	.13	.26
Months since migration	.00	.00	-.01*	.00
Fit statistics				
χ^2 (df)	296.621*** (45)		142.113*** (45)	
CFI	.947		.953	
RMSEA [90% CI]	.040 [.036 - .044]		.035 [.028 - .041]	
WRMR	1.031		.702	
Explained variance	3.5 %		4.5 %	

Note. *p(two-sided) < .05. **p(two-sided) < .01. ***p(two-sided) < .001.

Table S3. Testing the robustness of the main cross-lagged panel model predicting changes in host-national, origin-national and religious identification.

	Religious identification coded differently (N=1028)						**Only including Wave 1 & 2 (N=3505)**					
	DV: HI (t)		**DV: OI (t)**		**DV: RI (t)**		**DV: HI (t)**		**DV: OI (t)**		**DV: RI (t)**	
	b	S.E.	b	S.E.	b	S.E.	b	S.E.	b	S.E.	b	S.E.
HI (t-1)	.56***	.05	-.18**	.07	.04	.05	.75***	.08	-.02	.09	-.02	.04
OI (t-1)	-.02	.05	.78***	.05	.00	.05	-.01	.05	.75***	.06	.04	.03
RI (t-1)	.10*	.04	.04	.06	.78***	.04	.11*	.05	.08	.05	.81***	.03
Incomp (t-1)	-.06**	.02	-.02	.03	.01	.02	.00	.03	-06*	.03	.01	.02
HI*Incomp	.10***	.03	-.02	.03	-.03	.02	.07*	.03	-.06	.04	-.02	.02
OI*Incomp	.01	.03	-.02	.03	.02	.02	.00	.03	.04	.03	-.02	.02
RI*Incomp	-.06*	.02	.02	.03	.02	.02	-.07**	.02	.01	.03	.00	.01
Control variables												
Female	.06	.04	-.01	.05	.04	.04	-.02	.05	.00	.05	.00	.04
Age	.01**	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00
Edu (ref. low edu)												
Middle edu	.03	.05	.00	.05	-.10*	.05	.03	.06	-.04	.07	-.07	.05
High edu	-.03	.05	-.09	.06	-.15**	.05	.08	.07	.00	.07	-.07	.05
CO (ref. Spain)												
Bulgaria	.16*	.07	-.14	.08	.07	.07	.23**	.09	-.40***	.10	.08	.07
Poland	.04	.07	-.12	.07	.22***	.05	-.02	.07	-.28**	.08	.16**	.06
Turkey	-.01	.13	-.26	.16	.19	.15	-.13	.17	-.30	.20	.09	.08
Rel (ref. No rel.)												
Christian	.00	.06	.21**	.07	.50***	.07	-.05	.08	.02	.09	.09	.05
Muslim	.17	.13	.19	.15	.55**	.16	.20	.17	-.06	.21	.26***	.10
Other	.10	.24	-.46*	.23	.04	.44	-04	.22	-.14	.28	-.36*	.17
Months migration	.00	.00	.00	.00	.00	.00	.00	.00	.01**	.00	.00	.00
Fit statistics												
Loglikelyhood (df)			-33328.980 (259)						-102281.103 (293)			
AIC			67175.960						205148.206			
Explained Variance[1]	16.0 %		50.6 %		33.2 %		38.7 %		21.1 %		43.6 %	

Note. Unstandardized results. Coefficients and residual (co)variances were constrained to be equal over time.

HI=host-national identification; OI=Origin-national identification; RI=religious identification; Incomp=Perceived identity incompatibility; edu=education; CO=country of origin; Rel=religion.

[1] based on the proportional reduction in error.

*p(two-sided) < .05. **p(two-sided) < .01. ***p(two-sided) < .001

Table S4. Cross-lagged panel model predicting changes in host-national, origin-national and religious identification for Bulgarians and Poles.

	Bulgarians (N=151)						Poles (N=358)					
	DV: HI (t)		DV: OI (t)		DV: RI (t)		DV: HI (t)		DV: OI (t)		DV: RI (t)	
	b	S.E.	b	S.E.	b	S.E.	b	S.E.	b	S.E.	b	S.E.
HI (t-1)	.53***	.07	.05	.07	-.02	.07	.53***	.07	-.19**	.07	-.02	.05
OI (t-1)	-.06	.06	.69***	.07	-.01	.06	-.02	.06	.58***	.06	.07	.04
RI (t-1)	.13	.09	.08	.11	.50***	.11	.10	.07	.09	.08	.78***	.04
Incomp (t-1)	.01	.24	.08	.24	-.28	.17	-.17	.20	-.36	.18	.06	.12
HI*Incomp	.01	.03	-.03	.04	.01	.04	.02	.04	.06	.03	.01	.02
OI*Incomp	.03	.03	-.05	.04	.00	.02	.02	.03	.04	.03	-.03	.02
RI*Incomp	-.08	.04	.04	.06	.11**	.04	-.02	.05	-.04	.04	.01	.02
Control variables												
Female	-.11	.13	.07	.14	.23	.13	.13	.09	-.14	.09	-.02	.05
Age	.01*	.01	.01	.01	.01*	.01	.01**	.01	.01	.01	.00	.00
Edu (ref. low edu)												
Middle edu	.08	.12	.09	.12	-.07	.09	-.10	.12	-.08	.10	-.11	.08
High edu	-.03	.19	.38	.26	-.33	.28	.08	.09	-.15	.09	-.07	.06
Months migration	.00	.01	.00	.01	-.01	.00	.00	.00	.00	.00	.00	.00
Fit statistics												
χ^2 (df)			475.873 (82)						957.907 (82)			
CFI			.546						.548			
RMSEA [90% CI]			.178 [.163 - .194]						.173 [.163 - .183]			
SRMR			.110						.107			
Explained Variance	31.4 %		43.3 %		39.7 %		31.6 %		37.6 %		52.9 %	

Note. Unstandardized results. Coefficients and residual (co)variances were constrained to be equal over time.
HI=host-national identification; OI=Origin-national identification; RI=religious identification; Incomp=Perceived identity incompatibility; edu=education; CO=country of origin; Rel=religion.
*p(two-sided) < .05. **p(two-sided) < .01. ***p(two-sided) < .001.

Table S5. Cross-lagged panel model predicting changes in host-national, origin-national and religious identification for Spaniards and Turks.

	Spaniards (N=298)						Turks (N=221)					
	DV: HI (t)		DV: OI (t)		DV: RI (t)		DV: HI (t)		DV: OI (t)		DV: RI (t)	
	b	S.E.	b	S.E.	b	S.E.	b	S.E.	b	S.E.	b	S.E.
HI (t-1)	.50***	.06	-.06	.06	.02	.02	.51***	.09	-.10	.10	.03	.05
OI (t-1)	.03	.06	.59***	.06	.03	.03	.01	.08	.70***	.10	.08	.05
RI (t-1)	.08	.08	.16*	.07	.78***	.04	.20*	.09	.13	.11	.89***	.05
Incomp (t-1)	-.07	.19	.06	.19	.01	.06	.39	.22	.10	.24	.14	.13
HI*Incomp	.04	.04	-.02	.04	-.02	.01	-.01	.04	-.01	.04	-.01	.02
OI*Incomp	-.01	.03	-.01	.04	.01	.01	-.06	.04	-.05	.04	-.01	.02
RI*Incomp	-.07	.05	-.01	.04	.03	.03	-.07	.04	.05	.05	-.01	.03
Control variables												
Female	.07	.10	.24*	.10	.08	.04	.05	.11	.01	.11	.09	.06
Age	.01	.01	-.01	.01	.00	.00	.00	.01	-.01	.01	.00	.00
Edu (ref. low edu)												
Middle edu	.06	.13	.10	.14	-.08	.07	-.02	.13	-.06	.12	.03	.07
High edu	-.05	.11	.05	.13	-.15*	.06	-.29	.18	-.14	.20	-.08	.12
Months migration	.01	.01	.01	.01	.00	.00	.01*	.01	-.01	.01	.00	.00
Fit statistics												
χ^2 (df)	729.464 (82)						761.339 (82)					
CFI	.616						.566					
RMSEA [90% CI]	.163 [.152 - .174]						.194 [.181 - .206]					
SRMR	.097						.141					
Explained Variance	28.4 %		35.5 %		53.9 %		32.8 %		48.2 %		61.5 %	

Note. Unstandardized results. Coefficients and residual (co)variances were constrained to be equal over time.
HI=host-national identification; OI=Origin-national identification; RI=religious identification; Incomp=Perceived identity incompatibility; edu=education; CO=country of origin; Rel=religion.
*p(two-sided) < .05. **p(two-sided) < .01. ***p(two-sided) < .001.