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Development and Validation of the Revised Multicultural Ideology Scale (rMCI) in Germany and Luxembourg

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Abstract

A revised version of the Multicultural Ideology Scale (rMCI) is currently being developed to measure endorsement of multiculturalism in different cultural contexts. This study, which is part of a wider cross-cultural research project, presents the first assessment of the rMCI scale in the German language. The measure aims to cover several attitudinal dimensions of multiculturalism, relevant to the integration of different ethnocultural groups: Cultural Maintenance, Equity/Inclusion, Social interaction, Essentialistic Boundaries, Extent of Differences, and Consequences of Diversity. Two independent datasets were acquired from Germany ($N = 382$) and Luxembourg ($N = 148$) to estimate the factor structure of the rMCI using different confirmatory factor analysis techniques. The findings suggest that a 4-factor solution, including Cultural Maintenance, Equity/Inclusion, Social interaction, and Consequences of Diversity, was the best fit for the data. Most of these subscales demonstrated adequate psychometric properties (internal consistency, convergent, and discriminant validity). The 4-factor model of the rMCI was partially invariant across the two ethnic groups and full measurement invariance was established across gender.

Keywords: multicultural ideology, intercultural relations, cultural diversity, integration

'Diversity may be the hardest thing for a society to live with, and perhaps the most dangerous thing for a society to be without''

William Slaone Coffin Jr.

Introduction

An ongoing increase in migration rates has been observed in most places around the world, creating diverse communities with respect to culture, ethnicity, and religion. Different countries have varying degrees of openness to migration and the social integration of different ethnocultural groups, which are reflected in citizens' attitudes towards immigrants (Davidov & Semyonov, 2017). Hostile and xenophobic attitudes are still prominent in several countries while hate speech in social media is associated with a global increase in violence toward ethnic and religious minorities (Laub, 2019). Immigrants are perceived as a threat to the nation's societal security and cultural unity (Velasco-González et al., 2008). In this context, understanding attitudes to multiculturalism and immigration becomes particularly important in fostering positive intergroup relations and has been the focus of cross-cultural research for many years. Successful management of intercultural relations requires a deep understanding of the psychological processes that influence these phenomena in different sociopolitical contexts. To

this end, various studies investigate attitudes towards multiculturalism across different cultures and the consequences associated with these preferences for minority and majority group members.

The present study deals with the revision of the Multicultural Ideology Scale (MCI), a theoretically based self-report instrument that was originally developed in Canada to assess attitudes towards multiculturalism (Berry et al., 1977). We present background information on the development of the scale and introduce a German version of the revised scale, which aims to provide a broader assessment of multicultural attitudes and the antecedents of prejudice and discrimination. Lastly, we discuss different measures assessing relevant constructs and current developments in the field of multiculturalism research.

Acculturation is a process of social and individual changes that occur when different cultures come into contact. The development of the MCI was based on the bidimensional model of acculturation (Berry, 1974, 1980). According to the model, individuals and groups living in culturally plural societies face two central issues: the degree to which they prefer to maintain their ethnic distinctiveness in society and the degree to which they prefer to have contact with different cultural groups (Berry, 1980). Berry (1997) describes four acculturation strategies for immigrant and ethnocultural group members: assimilation, integration, separation, and marginalization. In assimilation, individuals distance themselves from their heritage culture, and engage in frequent contact with the other cultures. Integration describes the strategy of maintaining the heritage culture, while engaging in the daily life of the larger society. Separation refers to the desire for cultural maintenance and rejection of participation in the larger society. Last, marginalization describes individuals who lose all cultural affiliation, rejecting both their culture of origin and the dominant culture.

The model also explains how different ethnic groups and native citizens engage in their intercultural relations (Berry, 2017) as minority members' acculturation strategies are not independent of the majority society's views (Berry, 1980; Brown & Zagefka, 2011). From the perspective of dominant group members, the integration strategy implies a willingness to accept and include all ethnic minority groups in the society. On the contrary, assimilation and separation propose negative attitudes towards diversity, including the expectations that immigrant groups adopt the cultural practices of the larger society and the social exclusion of culturally different groups. Building on this approach, multicultural ideology was considered to be a bipolar construct with support for integration at one end and support for the three other strategies at the other end.

The notion of multiculturalism was first introduced as a policy by the Government of Canada in 1971 to deal with the consequences of increased cultural diversity due to immigration. It is also an ideology, reflecting an inclusive view of diversity, maintaining that a society consists of different ethnocultural groups, who have equal rights irrespective of their size or power (Berry, 1990). There are two important aspects for the success of multiculturalism: (a) demographic, which refers to the continuing presence over generations of ethnocultural diversity in the population and (b) equity, the right for equal societal participation of all cultural groups (Berry, 1984).The ideology aspect includes a complex set of attitudes towards the diversity and equity components of multiculturalism (Berry, 2020) and the joint value of cultural maintenance of minority heritage cultures and equitable participation of immigrant group members in the society of settlement (Berry & Ward, 2016). Particularly, multicultural ideology refers to public attitudes towards acceptance or rejection of diversity and inclusion, and support for policies that promote the integration of immigrants (Berry & Ward, 2016).

Multicultural Ideology Scale (MCI)

The original MCI scale included ten items tapping into the following three acculturation dimensions: five positive items reflecting integration and five negatively worded items representing the acculturation strategies assimilation and separation. Items comprised statements regarding the inclusion of immigrant groups in the society and their rights for cultural maintenance (i.e. “Ethnic minorities should preserve their ethnic heritage”). For the development of the items, the authors conducted focus groups and took into account public pronouncements on views about multicultural ideology in Canada (Berry et al., 1977; Berry & Kalin, 1995). Responses were recorded on a 7-point Likert scale with higher scores indicating a more positive attitude towards multiculturalism. Factor analyses provided support for the unidimensional structure of the scale and the value of Cronbach’s alpha reliability coefficient ranged between .80 to .90. (Berry & Kalin, 1995; Van de Vijver et al., 2008; Verkuyten, 2005). The measure has been adapted and tested in several countries, demonstrating good psychometric properties (Arends-Tóth & Van de Vijver, 2003; Berry, 2017). A few studies report adaptions of the measure in the German language, supporting the same pattern of results and a high degree of internal consistency ($\alpha = .87$) (Murdock & Ferring, 2016; Murdock, 2016) but its psychometric qualities have not been thoroughly tested.

Multicultural Measures and Multicultural Ideology Scale Revision (rMCI)

Since most societies are growing increasingly diverse, multiculturalism research constitutes a fast developing field in psychological science. Several studies have employed adapted versions of the MCI scale and similar measures to investigate multicultural attitudes worldwide (Berry, 2017) and how these relate to psychological and sociocultural adaptation and positive intergroup relations (Berry et al., 2021). Most findings confirm that support for the

integration strategy is associated with beneficial outcomes for immigrants, including higher levels of perceived life-satisfaction, increased self-esteem, and better sociocultural adjustment (Berry et al., 2021; Nguyen & Benet-Martinez, 2013; Stogianni et al., 2021) while similar positive adjustment outcomes (i.e. higher life-satisfaction, less acculturative stress) have been observed for majority group members who live in culturally diverse societies (Lefringhausen & Marshall, 2016; Tatarko et al., 2021). Other studies highlight the importance of integration in fostering positive intergroup relations (Berry et al., 2006; Paluck et al., 2019) and the impact of multicultural ideologies in reducing prejudice towards outgroup members (Rios & Wynn, 2016).

In addition, over the years several other measures tapping into relevant constructs have been developed and adapted to different cultural contexts. Such measures have been also used to assess the various consequences of multiculturalism and the underlying psychological processes affecting individuals living in multicultural settings. Some examples include scales assessing individual difference variables, such as cross-cultural competence (Bartel-Radic & Giannelloni, 2017; Matsumoto & Hwang, 2013), multicultural personality (Van der Zee & Van Oudenhoven, 2000), or multicultural identity (Szabó et al., 2020; Yampolsky et al., 2016). Measures included in the first category are designed to evaluate intercultural effectiveness; skills, and personality traits associated with one's ability to adapt in cross-cultural environments (Chiu et al., 2013). Multicultural identity measures assess identification with different cultural groups and behavioral involvement in cultural activities associated with these groups (Yampolsky et al., 2016). Other scales investigate attitudinal preferences regarding the endorsement of multicultural ideologies and whether these ideologies are common and normative in different societies. A group of researchers from New Zealand recently introduced a questionnaire to assess individuals' normative perceptions of multiculturalism in terms of diversity, ideology, and policy (Stuart &

Ward, 2019; Ward et al., 2018). In a similar vein, Kauff and colleagues (2019) developed the Pro-Diversity Beliefs Scale (PDBS) in Germany to assess beliefs regarding the benefits and instrumental value of diversity for the society. This scale has been mostly tested in organizational settings (Kauff et al., 2020).

The present study is contributing to these efforts by developing a revised version of the MCI scale. The MCI is a brief questionnaire that covers a few domains relevant to the endorsement of multicultural ideology based on the acculturation framework. As noted above, it was initially developed to assess majority member's views towards incoming minority groups in a society that was experiencing a large influx of immigrants for the first time. Nowadays, global migration patterns have significantly changed. Most modern societies are characterized by superdiversity, hosting individuals with different migration statuses (i.e. economic migrants, refugees, sojourners, individuals of various multiracial backgrounds), religious affiliations, labor market experiences, age and gender profiles, linguistic and educational backgrounds (Meissner & Vertovec, 2015; Vertovec, 2019). Increased intercultural contact as a consequence of globalization and migration has brought many psychological changes to both minority and majority group members. The complex nature of contemporary, migration-driven diversity renders it necessary to look into these newer and different aspects that might influence multicultural attitudes and to test the applicability of existing measures in new migration contexts.

Previous studies report variations in views about multiculturalism in different life domains and cultural contexts (Ward & Masgoret, 2008). A review of the literature reveals that the value of cultural maintenance and social inclusion constitute core features of multicultural ideology but other aspects could also play a role in shaping multicultural attitudes. Perceived

cultural differences between different ethnic groups and essentialistic beliefs regarding ethnic group membership (e.g. the notion that one's ethnicity is an inherent, biological trait) can influence acculturation preferences and attitudes towards migration (Moftizadeh et al., 2020). Drawing on these findings, an extended, revised version of the MCI has been developed by the second and the third author, including additional attitude domains from the literature on interethnic ideologies and other scales designed to assess relevant constructs (Breugelmans & Van de Vijver, 2004; Guimond, et al., 2014; Rosenthal, & Levy, 2012; Stuart & Ward, 2019). A deductive approach has been implemented for the generation of the items (Hinkin, 1995; Zarouali et al., 2021). The aim was to capture several attitude dimensions that have been considered relevant for the endorsement of multicultural ideology in previous studies. A thorough literature review was performed to identify all the subdimensions of the theoretical construct and create conceptual definitions for them. Items representing the different dimensions of multicultural ideology were selected to generally show face validity based on the meaning of the construct definitions (Zarouali et al., 2021). All items were developed in English. The entire procedure resulted in a final pool of 24 items to be tested in different samples.

Specifically, the rMCI includes six subscales covering three conceptual attitude dimensions: one old (the integration of immigrant groups) and two new, which refer to the consequences of cultural diversity and dealing with cross-cultural differences between groups. The three subscales Cultural Maintenance, Inclusion Equity/Inclusion, and Social Interaction reflect the integration strategy (i.e. the right of ethnic minority groups to maintain their cultural heritage, social participation of all cultural groups in the society, social interactions among majority and minority group members in different contexts). Three new scales are added: Essentialistic Boundaries, Extent of Differences, and Consequences of Diversity. The first two

include items that assess beliefs regarding cultural distance between groups. The last one deals with conflictual relations that might be the outcome of these cultural differences.

As previously mentioned, multicultural attitudes have been widely researched in different contexts; hence it is important to establish cross-cultural equivalence of scales assessing the endorsement of multicultural ideology and develop adapted versions that can be used with various populations. Such measures would enable us examine how the multiple meanings of multiculturalism vary around the world, make comparisons across different countries, and predictions concerning the success of multicultural policies. The present study is part of an international research project that aims to develop and test the psychometric properties of the rMCI in different language versions and cultural contexts. The rMCI is currently available in English, Russian, German, and French and will be tested in various countries. In this paper, we report on the factor structure and psychometric properties of the German version of the scale, which had not been validated and published before. The rMCI was adapted in the German language and tested in two representative community samples in Germany and Luxembourg, two countries that differ in their demographic composition and the implementation of immigrant integration policies. Luxembourg is a multilingual country with a high foreign population percentage (47,5% of the total population; Statec, 2019) while Germany lacks a long tradition as an immigration country (Trines, 2019). Adaption of the measure in two countries with distinct migration policies is important to investigate issues of conceptual equivalence.

We performed analyses within the CFA framework to investigate the factor structure of the rMCI and its measurement invariance across gender and the two countries. Initially, we were interested to investigate whether the six hypothesized dimensions (Cultural Maintenance, Equity/Inclusion, Social Interaction, Essentialistic Boundaries, Extent of Differences, and

Consequences of Diversity) could fit the latent construct of multicultural ideology and select the most representative items for each dimension based on the findings. In addition, we explored intercorrelations between the different dimensions of the rMCI and estimated several indicators of reliability and validity. Our study contributed to the preliminary testing and adaption of several items, some of which will be retained for constructing the final version of the rMCI. We considered rMCI as a reflective rather than a formative model because all items share a common theme and variations in item measures do not change the conceptual domain of the latent construct (Coltman et al., 2008).

Method

Participants

A total of 530 participants from Germany and Luxembourg participated in an online survey assessing attitudes towards diversity. We applied the following selection criteria for participation in the study: living in Germany or Luxembourg for at least 5 years and having a good command of the German language.

The German sample consisted of 382 participants (M_{age} = 36.18, *SD* = 16.15, *range* = 19-90). The majority of respondents were female (70.8%), had German nationality (91.6%), and were native speakers of the German language (90.3%). Some participants reported having dual citizenship (3.9%) and speaking another language as native speakers in addition to German (9.2%). The remaining stated a different nationality (3.4%). Most participants indicated Germany as their country of birth (97.1%). Participants were recruited from different cities and areas in Germany, varying in immigrant density. The majority (40.1%) describe their place of residence as a rural residential area or village. The rest of participants reported living in a big city (16.2%),

a medium-sized city (15.4%), or in a small town (28.3%). In addition, 42.4% of respondents mentioned that almost all people in their neighborhood belong to the same cultural group.

The Luxembourgish sample consisted of 148 participants (female = 66.9%, M_{age} = 34.61, *SD* = 14.11, *range* = 19-77). All of them had been living in Luxembourg for more than 5 years. Around 96.6 % had the Luxembourgish citizenship and 89.2% were born in Luxembourg. Participants were proficient users of the German language, as this is one of the official languages in Luxembourg, alongside Luxembourgish and French. German is the language of instruction at school that citizens learn since the age of 6.

Materials

The revised Multicultural Ideology Scale (rMCI; Berry, 2020) includes 24 items (8 negatively worded) and is divided into 6 subscales: *Cultural Maintenance* (CM; e.g., "It would be good to see all ethnic groups in Germany/Luxembourg retain their cultures"), *Social Interaction* (SI; e.g., "I think that immigrants and people in Germany/Luxembourg should seek more contact with one another"), *Equity/Inclusion* (EQ; e.g., "I think that immigrants in Germany/Luxembourg should have equal rights as people already living here"), *Extent of Differences* (DI; e.g., "All cultures should have their own distinct traditions and perspectives"), *Consequences of Diversity*(CD; e.g., *"*Having a lot of different cultural groups in Germany/Luxembourg makes it difficult to solve problems in our society"), *Essentialistic Boundaries* (EB; e.g., "Racial and ethnic group memberships do not matter very much to who we really are"). Responses are recorded on a 5-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*). Higher scores reflect more positive attitudes towards diversity.

A multistage process was applied to translate the scale into German. First, the scale was translated from English to German and adapted to the German and Luxembourg context by

several native German speakers. The German language versions were discussed in a group of native speakers. Differences were discussed and advice was sought by the scale developers to clarify meaning. The final agreed German version was back-translated into English by bilingual psychology students. This back-translation was then compared with the original scale.

Procedure

The survey was administered online with the SoSci survey software from January to June 2020. Participants were recruited through social media and personal networks. We also distributed flyers and posted announcements at the university campus. After giving their consent to take part in this anonymous online study, participants completed the self-report scales and a demographics questionnaire. The procedure lasted about 15 minutes. Participation in the study was voluntary. By completing the entire survey, participants were given the opportunity to be entered into a lottery and win one of four 15€ Amazon vouchers. All procedures were done according to the ethical standards of the ethics review board at the University of Luxembourg.

Results

Statistical Analyses

Confirmatory factor analyses were carried out to examine the factor structure of the rMCI in both samples and the measurement invariance of the construct across gender, German and Luxembourgish respondents. We decided not to perform exploratory and confirmatory factor analysis on the same dataset. Simulation studies have shown that an approach combining both analyses methods leads to over fitting, yielding inflated estimates of model fit, parameter estimates, and test statistics (Fokkema & Greiff, 2017). In addition, exploratory factor analyses are more appropriate when there are no specific expectations regarding the factors that constitute the latent construct and the allocation of the items to certain factors. We were mostly interested

in testing certain hypotheses regarding the factor structure of the rMCI scale. The measure was designed based on theoretical frameworks and other scales assessing relevant constructs in order to capture specific dimensions of multicultural ideology.

Additional analyses were performed to examine the psychometric properties of the rMCI. Cronbach's alpha and omega coefficients were calculated to measure internal consistency. Convergent and discriminant validity were estimated with the following indicators: average variance extracted (AVE) and Heterotrait-Monotrait Ratio of Correlations (HTMT) values. We also calculated correlations between the six rMCI subscales and item total correlations.

1.1 Confirmatory Factor Analysis

Confirmatory factor analyses were performed in R package lavaan (Rosseel, 2012) and estimated with the robust maximum likelihood estimator (MLR). Several competing CFA models were tested, including first-order, second-order, and bifactor CFA models. First, the factorial structure of the rMCI was tested for the German and the Luxembourg sample separately to examine which factor models adequately fitted across both groups. This was done in order to evaluate more restrictive measurement invariance models in the next steps. For the evaluation of the models, we used multiple fit indices because in combination they provide a more reliable assessment of model fit. The following fit indices were taken into account: the root mean square error of approximation (RMSEA), the comparative fit index (CFI), and the standardized root-mean-square residual (SRMR) (Kline, 2011; van de Schoot et al., 2012). The RMSEA estimates the discrepancy between the error of the model and a model that fits the data well. Values below .08 indicate an acceptable fit to the data and values below .06 a good fit. A value higher than .95 is considered acceptable. For RMSEA the 90% confidence interval (CI) was reported. The CFI compares the measurement model to an independent model, showing whether the

proposed model fits the data better. Values higher than .90 indicate a good fit. The SRMR is an absolute measure of fit in the model with values below .80 showing an acceptable fit.

Specifically, we tested the following CFA models: a) a 1-factor model (unidimensional) with all MCI items loading on a single factor, b) a 6-factor model with correlated factors, and c) a 4-factor model, after removing two subscales for uncorrelated factors. The goodness-of-fit indices for each model are displayed in Table 1.

----Insert Table 1 about here----

Given that most studies using the MCI provided evidence for its unidimensional structure, initially, we tested a 1-factor solution, with all items loading on the latent construct. According to the findings, the 1-factor model indicated poor fit to the data in both samples and was not considered for further analyses. Fit indices were not acceptable and around 8 items showed factor loadings lower than .30.

In the next step, we tested a 6-factor model, including all subscales from the old and the new MCI: CM, EQ, SI, EB, CD, and DI. The 6-factor structure of the rMCI was not supported in either of the two samples. In both models, all fit indices were below or above the recommended cut-off values. It was also observed that the factors EB and DI had no significant correlations with the other four MCI factors. The factor loadings for the 6-factor CFA model are presented in Table 2. In general, most components had relatively high factor loadings ranging from .40 to .80 with the exception of certain items in the factors EB (item 21) and DI (items 19 and 20), which showed the lowest loadings (below .40).

----Insert Table 2 about here----

Subsequently, a 4-factor model was tested, excluding the items of these last two subscales. The 4-factor model provided an excellent fit to the data in both samples and most items loaded highly

on their respective factors (loadings higher than .50). In addition, we proceeded on testing a second-order CFA model in order to explain the relationships between first order factors (the four subscales) and the higher order factor (multicultural ideology). The model fit was satisfactory, showing acceptable fit indices. Factor loadings ranged between .82 and .9 with an average of .87 in the German sample. Reliability coefficients were relatively high ($\omega L1$= .87, $\omega L2$= . 93, $\omega_{partial}$ $L1$ = .93). In the second sample, the model had factor loadings ranging from .641 and .985 with an average of .84 and high reliability coefficients ($\omega L1$= .84, $\omega L2$ = .94, $\omega_{partial} L1$ = .91). However, the difference in chi-square between the first and the second order CFA model was not significant and therefore, we opted for the simpler model. Last, we also tested a bifactor CFA model with all items loading on the general factor (Multicultural Ideology) and four grouping factors corresponding to the recommended subscales (CM, EQ, CD, SI).This model was tested to examine simultaneously the unidimensional vs. multidimensional structure of the scale in a single analysis but the estimation did not converge.

1.3 Correlations

The rMCI subscales intercorrelations are presented in Table 3. Factor scores were extracted and used for the calculation of Pearson correlation coefficients. The findings provided further support for the selected 4-factor solution. In both samples, high positive relationships were observed between the subscales CM, EQ, SI, and CD. EB and DI were not related to most of the other subscales. The subscale DI correlated positively only with CM in the Luxembourg sample. The subscale EB correlated positively with EQ in the German sample but the coefficient was very low.

----Insert Table 3 about here---

1.4 Reliability Analyses and Descriptive Statistics

Cronbach's alpha reliability coefficients for the six subscales and descriptive statistics are presented in Table 2. We also calculated omega reliability coefficients, which reported findings consistent with the alpha reliability. High reliability coefficients were observed in the German and the Luxembourgish sample for most of the scales included in the 4-factor model of the rMCI: CM (ω_{de} = .82, ω_{lu} = .84), EQ(ω_{de} = .86, ω_{lu}= .76), and CD (ω_{de} = .81, ω_{lu}= .81). The reliability coefficient for the SI subscale was acceptable in the German sample (ω_{de} = .78) but somewhat lower in the Luxembourgish sample (ω_{lu}= .71). The subscales EB and DI demonstrated low internal consistency and were not included in subsequent analyses. Item-total correlations for the 4-factor model are displayed in Table 4.

----Insert Table 4 about here---

The subscales EQ and SI had the highest mean scores across both groups of respondents, indicating positive views regarding the societal participation of immigrant groups. Conversely, the subscale CD had the lowest mean score. Average scores were higher in the Luxembourg sample, showing greater support for multiculturalism compared to the German respondents.

1.5 Convergent and Discriminant Validity

Convergent and discriminant validity coefficients were estimated for the different subscales as indicators of construct validity. Convergent validity refers to the degree a new scale is related to other variables that measure the same construct. Estimations of convergent validity were based on the average variance extracted (AVE) criterion, with values higher than .50 providing support for convergent validity (Cheung & Wang, 2017; Grigoryev et al., 2020; Hair et al., 2010). The AVE refers to the average amount of variance explained by a construct in its indicator variables relative to the overall variance of its indicators in order to estimate convergent

validity (Henseler et al., 2015). Values lower than .50 indicate that the variance due to measurement error is larger than the variance captured by the construct. In such case, there is insufficient evidence for the validity of the individual indicators and the latent construct (Fornell & Larckell, 1981).

A different pattern of results was observed in the two samples based on AVEs. Among the final four subscales, the three demonstrated sufficient convergent validity in the German sample: CM (AVE = .54), EQ (AVE = .61), CD (AVE = .52), SI (AVE = .48). In the Luxembourg sample,support for convergent validity was found for CM (AVE = .58) and CD(AVE = .51) while the rest showed lower values, which were close to the cutoff at .50: EQ (AVE = .46), SI (AVE = .42).

The Heterotrait-Monotrait Ratio of Correlations (HTMT) was calculated as an indicator of discriminant validity to determine whether the scales represent distinct components of multicultural ideology. The HTMT is the average of the heterotrait-heteromethod correlations (i.e., the correlations of indicators across constructs measuring different phenomena), relative to the average of the monotrait-heteromethod correlations (the correlations of indicators within the same construct) (Henseler et al., 2015). This method is commonly used for variance-based structural equation modeling. It was implemented because it has been proven to achieve higher specificity rates for detecting discriminant validity problems compared to other relevant methods such as the cross-loadings criterion and the Fornell-Lacker criterion (Henseler et al., 2015). Lower HTMT values than the predefined threshold of .85 indicate support for discriminant validity. A closer inspection of HTMT values in the German sample revealed support for discriminant validity between the four subscales CM, EQ, SI, and CD (see Table 6). In the

Luxembourg sample, lack of discriminant validity was observed between SI and some other components of multicultural ideology (CM and CD).

----Insert Table 5 about here---

1.6 Measurement Invariance

After establishing a baseline model for the two samples based on the 4-factor solution and the reliability and validity indicators, we performed multigroup CFA to test for measurement invariance across the different ethnic groups. Different levels of model constraints were applied: the configural model, which tests the invariance of the overall factor structure, the metric model for the invariance of factor loadings, and the scalar model for the invariance of item intercepts across groups. Comparisons between the different models were mainly based on the change of CFI and RMSEA values in the nested models. Changes of .01 in ΔCFI and ΔRMSEA from a less to a more restrictive model indicate support for invariance, leading to the acceptance of a more restrictive model. Other indicators such as the Akaike information criterion (AIC) and the sample-size adjusted Bayesian information criterion (sBIC) were also taken into account, with lower values indicating better model fit.

The findings did not reveal support for full measurement invariance across German and Luxembourgish respondents (see Table 2). Configural invariance was established confirming that the factor structure was equivalent across the two German-speaking samples. Factor loadings and factor variances were statistically significant. Fit indices for the metric model suggested good fit on all indices but CFI. AIC and BIC had lower values in the metric model and changes in ΔRMSEA between the configural and the metric model were within the acceptable range (-.009) but a change of .024 was observed in ΔCFI. Then, we examined the hypothesis for scalar invariance. The scalar invariance test reported a deterioration in fit with a change of -.024

in ΔCFI and higher AIC and BIC values comparing to the metric invariance model. Changes in ΔRMSEA between the metric and the scalar model were within the acceptable range (.009).

In another model, we evaluated whether the factor structure of the rMCI was invariant between men and women. We found support for configural gender invariance in the German sample ($\chi_2(220) = 360.257$, CFI = .941, RMSEA = .058 [.047–.068], SRMR = .055). The findings also revealed support for metric invariance ($\chi_2(208) = 355.120$, CFI = .938, RMSEA = .061 [.050–.071], SRMR = .054) and scalar invariance ($\chi_2(220) = 360.257$, CFI = .941, RMSEA = .058 [.047–.068], SRMR = .055) with changes less than .01 in ΔCFI and ΔRMSEA. Therefore, we can conclude that the factor structure, factor loadings, and item intercepts were equivalent across male and female respondents. Gender invariance analyses were not performed on the Luxembourg sample due to its small sample size.

Discussion

The present study contributes to cross-cultural research in intergroup relations by providing an alternative measure to evaluate intergroup attitudes and support for multicultural ideology. We examined the factorial structure of the German-language version of the rMCI, which was developed to assess views on different aspects of multiculturalism. A large pool of items was tested, covering different domains of multicultural ideology. Factor analysis supported a 4-factor solution, comprising the dimensions Cultural Maintenance, Equity/Inclusion, Social Interaction, and Consequences of Diversity, while the subscales Essentialistic Boundaries and Extent of Differences did not fit the core meaning of the rMCI and demonstrated poor psychometric properties. It seems that the items included in the subscales Essentialistic Boundaries and Extent of Differences need to be revised in order to better capture the

conceptual definitions of these constructs or these dimensions might be more relevant to other diversity ideologies, such as colorblindness.

Overall, the findings are in line with fundamental dimensions of multicultural ideology, which refer to the acceptance of cultural diversity and the benefits of social contacts between different ethnic groups. The four-factor solution stands in contrast with the single factor found with the original scale (Berry et al., 1997; Berry & Kalin, 1995) and in some later studies with this is original scale (Breugelmans & Van de Vijver, 2004; Van de Vijver, et.al. 2008). However, with the addition of some newer current meanings of multiculturalism, the more complex structure is to be expected in the revised scale.

The results also provide initial evidence for the reliability and validity of the 4-factor model. All subscales demonstrated high internal consistency and included items with high factor loadings. Preliminary investigations of convergent and discriminant validity indicators supported that the four subscales measure distinct but interrelated dimensions of multicultural ideology. In the Luxembourg sample, some issues with discriminant validity were observed when comparing the subscale Social Interaction with Cultural Maintenance and Conflictual Relations, suggesting that some of the items might require modifications. Future studies should investigate further assumptions of convergent and discriminant validity using different approaches and comparing the scale to other measures that assess relevant and theoretically distinct constructs (e.g. pro-diversity ideologies, prejudice toward outgroup members, immigrant-related threat perceptions, ethnocentrism). There are also several additional methods to investigate various indicators of validity that can be employed in follow-up studies looking into the psychometric properties of the measure. Concurrent validity can be established by estimating correlations with well-established measures assessing multicultural ideology and predictive validity by investigating the

relationship with other psychological constructs and behaviors the measure is expected to predict, including life-satisfaction, immigrants' sociocultural adaption, participation in multiethnic social networks, and political preferences. Some other examples can refer to methods for assessing construct validity, such as the multitrait-multimethod matrix (Campbel & Fiske, 1959) or testing the measure in multiple samples from the same population to provide further evidence for its application and factor structure (Hinkin, 1995).

Invariance tests were conducted to evaluate similarities and differences of the best-fitting model between different groups of respondents. Findings from the German sample indicate that men and women conceptualized the different dimensions of multiculturalism in the same way. However, multiple group invariance model comparisons did not provide empirical support for metric and scalar invariance across German and Luxembourgish respondents. These findings suggest that interpretations of multiculturalism might be influenced by cultural differences and the sociopolitical context in which they live. Country immigration policies affect perceived integration norms and attitudes towards immigrants' rights (Green et al., 2020). According to the Immigrant Integration Policy Index (2020), immigrant integration policies implemented by different countries have been classified as restrictive or integrative, depending on the status-attainment opportunities that are provided for immigrants in the destination society. Luxembourg is a country characterized by cultural diversity and migration policies that support the integration of different ethnocultural groups. Germany has a lower score in immigrant integration policies and these mostly focus on the temporary integration of immigrants (Migrant Integration Policy Index, 2020). Even though meaningful group comparisons between the two ethnic groups cannot be made due to the lack of invariance, it is evident that participants from the Luxembourg sample had a higher mean score in all subscales reflecting positive attitudes towards diversity.

Conclusions

Taken these findings together, we can conclude that the 4-factor rMCI constitutes a promising measure of multicultural attitudes. The German version demonstrated acceptable psychometric properties and a factor structure reflecting the core dimensions of the theoretical framework. Additional testing of the psychometric properties in other German-speaking countries is recommended and test-retest reliability estimates from repeated assessments with the same samples should be provided. The suggested multidimensional conceptualization of multicultural ideology fitted the data well; however, the factor structure of the scale should be explored in different samples and language versions, and issues of cross-cultural comparability should be addressed. Another recommendation for future studies would be to look into cultural differences in response styles (He & Van de Vijver, 2016). Findings from different countries will enable us develop a universal measure of multicultural attitudes that can be applied in multiple groups and contexts.

The present study contributes to the literature by establishing the psychometric qualities of the German rMCI for the first time and provides empirical evidence regarding the different factors that shape multicultural attitudes. We hope that our findings can provide valuable recommendations to guide future adaptions of the rMCI. Developing such measures is particularly important in understanding the challenges modern multicultural societies face in order to recommend solutions that could improve the quality of intergroup relations.

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Table 1

Summary of Fit Indices for the CFA Models across Both Samples

Model		Model fit				Model comparison	
		Robust χ2(df)	CFI	RMSEA [95% *CI*]	SRMR	AIC	sBIC
Single factor CFA model	Germany (*N* = 382)	1293.567***(252)	.672	.104 [.099, .109]	.091	24093.828	24149.454
	Luxembourg (*N* = 148)	664.853***(252)	.638	.105 [.096, .115]	.101	9112.018	9099.963
Six factor CFA model	Germany	601.645***(237)	.885	.063 [.058, .069]	.089	23315.249	23382.464
	Luxembourg	404.095***(237)	.854	.069 [.058, .080]	.093	8848.042	8833.477
Single factor CFA model with the dropped items	Germany	508.575***(104)	.828	.101 [.093, .109]	.061	15506.886	15696.266
	Luxembourg	241.135***(104)	.826	.094 [.080, .109]	.072	5721.803	5713.767
Four factor CFA model with the dropped items	Germany	**240.504*****(98)**	.939	.062 [.053, .071]	.044	**15183.047**	15224.767
	Luxembourg	**153.557*****(98)**	.929	.062 [.043, .079]	**.059**	5631.358	5622.317
Second order factor CFA model with the dropped items	Germany	243.642***(100)	.939	**.061 [.052, .070]**	.044	15183.214	**15223.388**
	Luxembourg	155.789***(100)	.929	**.061 [.043, .079]**	.061	**5630.178**	**5621.472**
Bifactor CFA model with the dropped items	Germany	did not converge properly					
	Luxembourg						
Four factor MG-CFA model with the dropped items	Configural (*N* = 530)	504.717***(220)	.911	.070 [.062, .077]	.073	20892.291	20984.573
	Metric	416.340***(208)	.935	.061 [.053, .069]	.059	20816.184	20921.649
	Scalar	504.717***(220)	.911	.070 [.062, .077]	.073	20892.291	20984.573

Note. *df* = Degrees of freedom; *CFI* = Comparative fit index; *RMSEA* = Root-mean-square error of approximation; *SRMR* = Standardized root mean square residual; *AIC* = Akaike information criterion; *BIC* = Bayesian information criterion; ***p<.001; **p<.01; *p<.05.

Table 2

Descriptive Statistics, Reliability Coefficients and Factor Loadings for the Six-Factor CFA Model

	Items	Germany (N = 382)			Luxembourg (N = 148)		
		M (*SD*)	α	Loadings	*M* (*SD*)	α	Loadings
Cultural Maintenance (CM)		3.50 (0.81)	.82		3.53 (0.78)	.84	
1	It would be good to see all ethnic groups in Germany/Luxembourg retain their cultures	3.64 (0.97)		.76	3.47 (0.90)		.75
2	It is best for Germany/Luxembourg if all ethnic groups forgot their cultural backgrounds as soon as possible	4.06 (0.98)		.78	4.19 (0.95)		.75
3	People who come to Germany/Luxembourg should change their behavior to be more similar to the local population	2.81 (1.06)		.61	2.99 (1.02)		.74
4	We should help ethnic and racial minorities preserve their cultural heritages in Germany/Luxembourg	3.49 (0.99)		.79	3.47 (0.89)		.81
Equity/Inclusion (EQ)		4.03 (0.88)	.86		4.18 (0.65)	.78	
5	I think that immigrants in Germany /Luxembourg should have equal rights as people already living here	3.78 (1.11)		.80	3.77 (1.02)		.60
6	I think that immigrants in Germany /Luxembourg should have fewer rights than those who were born here	4.05 (1.03)		.79	3.95 (0.97)		.81
7	I think that immigrants in Germany /Luxembourg should enjoy the same freedoms as those who were born here.	4.03 (1.03)		.82	4.24 (0.77)		.69
8	I think that immigrants in Germany /Luxembourg should not have the same freedoms as those already living here	4.25 (1.03)		.72	4.54 (0.77)		.54
Social Interaction (SI)		3.75 (0.83)	.77		3.78 (0.71)	.67	
9	If members of ethnic groups want to keep their own culture, they should keep it to themselves and not bother other people in this country	3.21 (1.24)		.69	3.06 (1.21)		.64
10	We should do more to learn about the customs and heritage of different ethnic and cultural groups in this country	3.63 (1.11)		.80	3.51 (1.11)		.78
11	I do not like being on a bus or a train in which there are many people of other cultures	4.04 (1.07)		.62	4.47 (0.81)		.40
12	I think that immigrants and people in	4.12 (0.87)		.60	4.07 (0.80)		.57

	Germany/Luxembourg should seek more contact with one another						
Consequences of Diversity (CD)		2.93 (0.87)	.81		3.14 (0.79)	.80	
13	Having a lot of different cultural groups in Germany/Luxembourg makes it difficult to solve problems in our society	2.62 (1.14)		.74	3.07 (1.00)		.80
14	The unity of this country is weakened by ethnic groups sticking to their old ways	3.03 (1.20)		.69	3.21 (1.03)		.75
15	A society which has a variety of ethnic groups is more able to tackle new problems as they occur	3.06 (1.00)		.63	3.07 (0.94)		.63
16	I feel at ease when I am in a city with many immigrants	3.01 (1.02)		.81	3.20 (1.03)		.67
Extent of Differences (DI)		3.07 (0.62)	.67		3.07 (0.68)	.72	
17	All cultures should have their own distinct traditions and perspectives	3.76 (0.78)		.63	3.78 (0.89)		.78
18	Each racial and ethnic group should have their own distinguishing characteristics	3.37 (0.91)		.90	3.36 (0.97)		.90
19	All groups in Germany/Luxembourg should clearly show their own distinctive cultural features	2.75 (0.93)		.44	2.82 (0.92)		.42
20	It is important for all groups in Germany /Luxembourg to keep themselves distinct from other groups	2.39 (0.89)		.37	2.32 (0.91)		.43
Essentialistic Boundaries (EB)		3.10 (0.82)	.69		3.14 (0.79)	.64	
21	Ethnic and cultural group categories are not very important, and so should not be used for understanding about other people	2.36 (1.03)		.28	2.45 (1.00)		.24
22	Racial and ethnic group memberships do not matter very much to who we really are	3.40 (1.12)		.57	3.26 (1.19)		.42
23	All human beings are individuals, and therefore race and ethnicity are not important	3.41 (1.15)		.84	3.53 (1.12)		.88
24	At our core, all human beings are really all the same, so racial and ethnic categories do not matter	3.23 (1.26)		.70	3.30 (1.22)		.63

Table 3

Correlations between the MCI Subscales for the German (N = 382) *and the Luxembourg Sample (*N = 148)

	1	2	3	4	5
1. Cultural Maintenance	-				
2. Equity/Inclusion	.75***/ .63***	-			
3. Social Interaction	.80***/ .87***	.76***/ .56***	-		
4. Consequences of Diversity	.73***/ .77***	.68***/ .57***	.82***/ .86***	-	
5. Extent of Differences	.11 / .30**	-.01 / .14	.03 / .12	-.02 / .07	-
6. Essentialistic Boundaries	.08 / .11	.15*/ .08	.08 / .11	.10 / .10	.03 /.06

Note. Coefficients for the German sample are first/then for the Luxembourg sample.
*p < .05,**p < .01, ***p < .001

Table 4

Corrected Item-total Correlations for the 4-factor Model in both Samples

Items	German sample (N = 382)	Luxembourg sample (N = 148)
Cultural Maintenance		
1 CM_P_01	.69	.67
2 CM_P_02	.69	.64
3 CM_P_03	.51	.66
4 CM_P_04	.67	.74
Equity/Inclusion		
5 EQ_P_01	.71	.47
6 EQ_P_02	.74	.65
7 EQ_P_03	.74	.60
8 EQ_P_04	.66	.54
Social Interaction		
9 SI_P_01	.58	.48
10 SI_P_02	.64	.58
11 SI_P_03	.50	.26
12 SI_P_04	.57	.54
Consequences of Diversity		
13 CD_P_01	.68	.69
14 CD_P_02	.61	.66
15 CD_P_03	.55	.55
16 CD_P_04	.67	.54

Table 5

Discriminant Validity HTMT Coefficients between the MCI Subscales for the German (N = 382) *and the Luxembourg Sample (*N = 148)

	1	2	3	4
1. Cultural Maintenance	-			
2. Equity/Inclusion	.76 / .67	-		
3. Social Interaction	.81 / **.87**	.76 / .63	-	
4. Consequences of Diversity	.77 / .79	.68 / .63	.81 / **.95**	-

Note. Coefficients for the German sample are first/then for the Luxembourg sample. The HTMT values more than .85 are bold.