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# A European perspective on intercultural competence and prejudice: a cross-cultural analysis

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**Introduction:** This study examines the relationship between intercultural competence and subtle and blatant prejudice toward refugees in Germany, the UK, Hungary, the Czech Republic, Ukraine, and Serbia.

**Method:** Using the Cultural Intelligence Scale and the Multicultural Personality Questionnaire, we analyze whether measures of intercultural competence are associated with lower levels of prejudice, with a particular focus on Eastern European contexts compared to established findings from Central Europe, North America, and East Asia.

**Results:** Results highlight cross-cultural differences in both the overall scales and their subdimensions in their associations with prejudice.

**Discussion:** These findings challenge the universal applicability of measures such as the Cultural Intelligence Scale and the Multicultural Personality Questionnaire, revealing that their effectiveness varies across cultural settings. The study underscores the necessity of culturally adapted interventions to address prejudice and foster social cohesion in regions experiencing increasing migration. By advancing a culturally nuanced perspective, this research contributes to refining intercultural competence methodologies and informing targeted integration policies that address region-specific challenges.

## KEYWORDS

intercultural competence, cross-cultural competence, prejudice, subtle prejudice, blatant prejudice, refugees, cross cultural, Eastern Europe

## 1 Introduction

In an increasingly globalized world, intercultural competence has emerged as a potential solution for fostering constructive interactions between individuals from diverse cultural backgrounds, particularly in the context of education and expatriated workers (expats). A broad definition describes intercultural competence as the ability to behave and communicate effectively and appropriately in intercultural situations (Deardorff, 2009; Thomas, 2002). One of the classic approaches of intercultural competence research in the context of globalized societies and labor markets is that intercultural competence is related

to lower levels of hostile inter-group attitudes (Genkova, 2019). This connection, however, remains underexamined across different regional and social groups, raising questions about how well existing measurement tools capture this relationship.

Two widely used instruments in this area are the Cultural Intelligence Scale (CQS) and the Multicultural Personality Questionnaire (MPQ). The CQS, developed by Ang and van Dyne (2008), assesses cultural intelligence (CQ) across metacognitive, cognitive, motivational, and behavioral dimensions and has been validated primarily in Western, Southeast Asian, and US-American contexts (Ang and van Dyne, 2008). The MPQ (van der Zee and van Oudenhoven, 2000) assesses personality traits such as open-mindedness, empathy, and flexibility, which are essential for successful intercultural interactions. This instrument has likewise been developed and tested in Western European and Southeast Asian contexts (Genkova et al., 2021).

Despite the extensive amount of studies on this topic, current research faces several challenges, particularly the large variety of approaches, terminologies, and definitions, the narrow perspectives on the foundational understanding of culture, psychometric difficulties related to construct and criterion validity, as well as comparability of measurements across different groups of people (Genkova, 2019; Guillén-Yparrea and Ramírez-Montoya, 2023; Leung et al., 2014; Wang et al., 2019). In particular, individuals with immigration background and those living in Eastern Europe are largely underrepresented in existing studies and it is unclear how existing models, measurements, and approaches can or should be applied. Moreover, there is a strong focus on performance-oriented criterion variables of intercultural competence, such as grades in semesters abroad, while criteria that focus more on societal diversity and inclusion are considered less (Zotzmann, 2014).

Refugees and asylum seekers often face prejudice, with attitudes frequently shaped by perceived economic, cultural, or symbolic threats (Stephan and Stephan, 2000). This is especially relevant given recent global displacement trends. The United Nations High Commissioner for Refugees (UNHCR) projected that Europe's displaced population will reach 24.9 million in 2024, marking a 2% increase (UNHCR, 2023). The influx of refugees has intensified debates on balancing secure borders with humanitarian obligations, as political and media narratives often shape public sentiment toward displaced individuals (Cowling et al., 2019). Research consistently highlights the broad presence of negative social attitudes toward refugees, which can influence public opinion, voting behavior, and ultimately government policies (Paluck et al., 2021; Verkuyten et al., 2022). Recent and ongoing crises, such as the war in Ukraine, contribute to these issues as they are related to both higher numbers of incoming refugees as well as stronger prevalence of safety concerns and feelings of threat. In this study, prejudice toward refugees is used as a socially relevant outcome to test the criterion validity of the CQS and MPQ.

Besides the criterion validity of the CQS and MPQ, the current study focuses on the applicability in different groups of people, one of the biggest challenges in current intercultural competence research (Genkova, 2019). In particular, there are critical gaps regarding their application in Eastern European contexts, where unique historical and socio-political factors may influence cultural attitudes. The distinct histories of Eastern European

nations—including legacies of post-communist transitions and unique immigration policies—suggest that Western-derived measurements may not fully capture intercultural competence in these regions, thus questioning the role of intercultural competence as a mitigator for prejudice (van de Vijver and Poortinga, 2002). Likewise, people with and without migration backgrounds may approach intercultural situations differently. For example, individuals with migration experience may show more empathy toward refugees (Genkova and Groesdonk, 2021), but may also perceive them as competitors for resources (Roth and Kim, 2013). Conversely, non-immigrant populations may hold stronger prejudices due to limited intercultural exposure (Pettigrew and Meertens, 1995).

The current study aims on addressing these challenges by analyzing prejudices toward refugees as a potential criterion of two measurement instruments for intercultural competence, the Cultural Intelligence Scale (CQS) and the Multicultural Personality Questionnaire (MPQ) among student participants from both Western/Central European countries (Germany, the UK) and Eastern European countries (Hungary, the Czech Republic, Ukraine, and Serbia). The research question of this study is thus, whether the criterion validity of the MPQ and CQS regarding attitudes toward refugees varies across immigrant and non-immigrant students in Western and Eastern Europe. This includes: (1) Can we assume comparability of measurement across the six samples? (2) Is intercultural competence related to prejudice toward refugees? Does the relationship of intercultural competence and prejudice toward refugees differ across participants with and without immigration backgrounds and across the national subsamples?

By analyzing these relationships in a broader cultural context, the study contributes to understand whether intercultural competence can indeed contribute to lower levels of prejudice against refugees in Eastern Europe and to the ongoing discussion about whether intercultural competence can or should be measured with the aim to operationalize a generalizable competence (Zotzmann, 2014; Ramstrand et al., 2024).

## 2 Theoretical background

### 2.1 Defining intercultural competence

Intercultural competence research broadly aims to facilitate efficient and appropriate interactions among individuals from different cultural backgrounds (Thomas and Simon, 2007). Since this study aims to contribute to the understanding of criterion validity of two widely established measurement instruments for intercultural competence, the following paragraphs outline the understanding of culture and intercultural competence in this article, describe current challenges for the field of research and how we address some of them in our study.

The origins of research on culture and interculturality can be traced to the humanities, particularly cultural studies, anthropology, ethnology, and philosophy. Traditionally studied in anthropology and sociology (Triandis et al., 1994; Trompenaars and Hampden-Turner, 1997), the most common and widely

accepted definition in psychological research describes culture as an orientation system shaping perception, values, and behaviors within a society, organization, or group (Genkova, 2019; Thomas, 1993; Thomas and Utler, 2013; Triandis et al., 1994). This system, transmitted through symbols and socialization, defines individuals' sense of belonging and structures their responses to environmental challenges (Helfrich, 2019). Post-positivist and constructivist perspectives, e.g., by Holliday and Macdonald (2020), emphasize in this context that research should see culture not as a bounded, static variable linked to national or group membership, but consider the fluid, negotiated, and intersubjective nature of cultural experience. Mainstream research still often reifies cultural categories in ways that obscure power dynamics and marginalize hybrid or intersectional identities (Zotzmann, 2014; Martin and Nakayama, 2015). They caution that intercultural competence frameworks that universalize or standardize culture risk reinforcing existing hierarchies and overlook how race, class, migration histories, and political context shape intercultural interactions. Thus, while positivist models provide structured approaches to intercultural behavior, they may fall short in capturing the lived, contested realities of cultural negotiation—particularly for individuals navigating complex or liminal cultural positions. From this standpoint, culture is not a set of fixed traits tied to nationality or ethnicity, but a situated process of meaning-making that emerges through interaction. Accordingly, Thomas (2002) emphasizes that learned cultural patterns are adaptable, evolving in response to changing contexts.

When individuals interact with members of different cultures, these cultural patterns may no longer function effectively, leading to stress or misunderstandings (Thomas and Utler, 2013). While modern research on intercultural competence considers the complex nature of culture as well as critical or post-positivist perspectives to an increasing degree, intercultural communication and intercultural competence research originally rose in the context of the cold war, fuelled by an interest in peaceful interaction between members of the two superpowers (Genkova, 2019). Later, intercultural competence research focused mostly on the occupational and the educational context, e.g., the cases of international students and expats. Some researchers also include the question of how immigrants can be successful in a new cultural environment, mostly with a clear focus on economic success and blending in to the host-country (Martin and Nakayama, 2015). The underlying questions of this research area can be summarized as: Which people are more successful in intercultural situations than others, and how can these two groups be differentiated? Furthermore, from the applied perspective, the question arises as to how people can be supported to be successful in intercultural situations. In contributing to these questions, researchers face severe challenges, some of which we are going to address in the current study.

One of the biggest challenges in intercultural competence research is that there is no single definition or terminology that scholars agree on. Some researchers see intercultural competence as a set of skills, while others define it as an attitude, personality trait, or social ability. As an example, Fantini (2009) compiled a list of terms used in scientific literature that were used synonymously with intercultural competence or without further conceptual

differentiation: multiculturalism, multicultural personality, cultural adaptation, intercultural sensitivity, cultural intelligence, international communication, transcultural citizenship, although further synonyms may have emerged in the 15 years since this publication.

Interculturally successful behavior is said to be reflected primarily in the mental and physical health of individuals exposed to other cultures over an extended period of time (interculturality is demanding, Thomas and Simon, 2007), socio-cultural adaptation, and job or academic success in one or more cultures other than their home culture (Ng et al., 2017). Since it has been shown that considering competencies contributes significantly more to predicting professional success than personality factors (albeit less than general cognitive performance, Schuler and Prochaska, 2000; Kanning, 2019), it seems plausible to assume that research into intercultural competence should be best suited to predicting success in other cultures. Critical scholars argue that the drive to define and measure intercultural competence is partly influenced by neoliberal educational policies that emphasize standardized performance indicators, but intercultural experiences are deeply personal and socially embedded, resisting such standardization (Zotzmann, 2014). While this holds true for parts of some national educational systems, we argue that this does not indicate a fundamental flaw in research on intercultural competence, but rather a lack of understanding and clear definition of competencies and its fields of application in applied sciences and practice.

Competence is understood as an ability that enables behavior that contributes to the achievement of goals (e.g., working together on a task) or the fulfillment of motives (e.g., affiliation; Kanning, 2019). Schnabel et al. (2015) further emphasize, following Erpenbeck (2012), that competencies should essentially be viewed as learnable, context-specific behavioral potential that can only be observed through concrete behavior. Furthermore, various authors emphasize that intercultural competence should be viewed as a generic skill that individuals from any culture use when interacting with any other culture (Rathje, 2007; Schnabel et al., 2015). A definition that satisfies all these requirements for intercultural competence and the understanding of culture underlying this definition is that of Rathje (2007, p. 264):

“Given that culture is understood as existing within human groups, characterized by cohesion that is due to familiarity with inherent differences between them, intercultural competence can be defined as a culture-generic skill, which is required in interactions between individuals from different human groups who are experiencing foreignness as a consequence of their mutual ignorance of the spectrum of differences between them, with a view to producing culture by creating familiarity and thus cohesion amongst the individuals involved, allowing them to pursue their interactional goals.”

How this competence is comprised as well as its operationalization remain highly controversial, as different theoretical approaches offer both strengths and weaknesses. Taxonomies of different intercultural competence models (Bartel-Radic and Giannelloni, 2017; Spitzberg and Changnon, 2009) distinguish between trait-based and development-oriented

models when defining success-oriented concepts. Trait-based models list clearly defined and operationalized characteristics to differentiate between intercultural competent and incompetent individuals. These models can take different forms: Checklist models (e.g., [Bolten, 2007](#)) present a collection of key traits. Structural models (e.g., [van Dyne et al., 2009](#)) organize these traits into a structured framework. Causal-path models (e.g., [Deardorff, 2009](#)) describe theoretical relationships between traits, explaining how they contribute to intercultural competence. In contrast, development-oriented models focus on identifying progressive stages of intercultural competence development over time (e.g., [Bennett, 1986](#); [Deardorff and Arasaratnam-Smith, 2017](#); [Hammer, 2012](#)). While the multitude of approaches and models is perceived as challenging by researchers ([Borghetti, 2017](#); [Kealey, 2015](#)) different approaches have been developed different aims and in the context of different research traditions. In particular, development-oriented models are more suitable to inform actions in an educational context. Conversely, more static models are easier to translate into measurement tools for a short-term oriented or one-time assessment ([Genkova, 2019](#)).

Nevertheless, only a minority of the existing models has been empirically tested or validated, yet. Extensive reviews by [Gabrenya et al. \(2013\)](#) and [Matsumoto and Hwang \(2013\)](#) combined, found usable information on validity for a total of 14 of the 34 analyzed instruments. According to [Matsumoto and Hwang \(2013\)](#), [Gabrenya et al. \(2013\)](#), [Wolff and Borzиковsky \(2018\)](#), and [Genkova and Schreiber \(2024\)](#), only four existing instruments meet key psychometric criteria: The Cultural Intelligence Scale (CQS), the Multicultural Personality Questionnaire (MPQ), the Intercultural Development Inventory (IDI), and the Test zur Messung Interkultureller Kompetenz (TMIK).

Notably, the TMIK is primarily used in German-speaking contexts, with limited data available for cultural settings beyond Germany and Brazil ([Schnabel et al., 2015](#)). The IDI as a development-oriented procedure is not directly comparable to the outcomes of more static questionnaires. Notably, the CQS and MPQ don't refer to the term competence but to intelligence and personality-based constructs that are per definition more static and less context dependent than competence. However, the existing results that support construct and criterion validity as well as reliability in some cultural contexts justify to further examine their relationship with prejudices among immigrant and non-immigrant student populations in six countries as a means of criterion validity. Thereby, we treat them as distinct independent variables, since their relationship has been analyzed in previous validation studies ([Ang and van Dyne, 2008](#)) and the different research traditions (personality vs. intelligence research) make it difficult to theorize about a potential causal relationship between cultural intelligence and multicultural personality.

## 2.2 CQS and MPQ as measurement tools for intercultural competence

### 2.2.1 Cultural intelligence scale

Based on [Gardner's \(1985\)](#) theory of multiple intelligences, the concept of Cultural Intelligence (CQ) was developed by

[Earley and Ang \(2003\)](#) as an independent sub-dimension of general intelligence, designed to predict effective intercultural behavior. [Earley and Ang \(2003\)](#) proposed that successful and rapid adaptation to new cultural contexts results from individual abilities ([Kong et al., 2020](#)). Consequently, cultural intelligence is conceptualized as a multidimensional construct that intersects with social and emotional intelligence ([Earley and Ang, 2003](#)).

In their original model, Earley and Ang identified three distinct sub-dimensions of CQ. However, [van Dyne et al. \(2009\)](#) expanded this model to include four core sub-dimensions: cognitive, metacognitive, motivational, and behavioral. The cognitive dimension reflects knowledge of cultural norms and practices within a new culture. The metacognitive dimension pertains to thinking and reflection processes; individuals with high metacognitive CQ are more aware of potential misunderstandings in intercultural situations, as they observe and attempt to interpret these nuances, enabling them to respond appropriately. The motivational dimension captures the drive to understand and adapt to new cultures, contributing to successful intercultural interactions. Finally, behavioral CQ refers to the ability to adjust one's behavior to effectively engage with individuals from different cultural backgrounds ([Ang and van Dyne, 2008](#)).

Alongside this theoretical model, [Ang and van Dyne \(2008\)](#) introduced the Cultural Intelligence Scale (CQS). Although the scale has been translated into various languages, it continues to be widely used in its original form, comprising 20 items rated on five-point Likert scales ([Rockstuhl and van Dyne, 2018](#)). The Cultural Intelligence Scale (CQS) is one of the most widely used tools for measuring CQ. Initially validated with Singaporean and US samples, including expatriates ([Ang and van Dyne, 2008](#)), it has since been applied in various cultural settings, such as among Filipino expatriates in Taiwan ([Chen et al., 2011](#)), expatriates in Taiwanese companies ([Lee and Sukoco, 2010](#)), Korean students ([Moon, 2010](#)), and students at a Swiss military academy ([Rockstuhl et al., 2011](#)). These studies illustrate the CQS's broad applicability in both Western and Far Eastern contexts, making it a reliable instrument for assessing intercultural competence across cultures. A study by [Greischel et al. \(2021\)](#) validated the German version of the CQS, further demonstrating its applicability in culturally diverse settings, including both expatriates and local professionals. However, the applicability in European countries, especially in eastern and south-eastern Europe remains unclear.

### 2.2.2 Multicultural personality questionnaire

The cultural intelligence (CQ) model focuses on cognitive, affective, and behavioral aspects in intercultural situations. However, other approaches investigate more distal correlates of intercultural competence, particularly personality traits. [Tett and Guterman \(2000\)](#) defined personality as the sum of intra-individually stable and inter-individually unique latent behavioral tendencies, contingent on specific situational contexts. Thus, it seemed plausible that effective behavior in intercultural situations could be predicted by personality traits uniquely relevant to these contexts. In analogy to the Big Five personality factors, [van der Zee and van Oudenhoven \(2000\)](#) identified five specific traits that contribute to intercultural competence.

These traits include cultural empathy (the ability to understand the thoughts, feelings, and behaviors of culturally diverse individuals), open-mindedness (an unbiased attitude toward cultural differences and new experiences), social initiative (the proactive approach to engaging with social situations), emotional stability (the ability to remain calm under new and stressful conditions), and flexibility (the tendency to view novel situations as positive challenges and adapt accordingly; [van der Zee and van Oudenhoven, 2013](#)). In a theoretical discussion, [van der Zee and van Oudenhoven \(2013\)](#) proposed that emotionally stable and flexible individuals are better able to manage stress caused by new cultural norms and ambiguous situations. Individuals high in social initiative and open-mindedness, in turn, are expected to approach challenging situations with less negative affect. Additionally, those with high cultural empathy are more likely to recognize different cultural norms and respond appropriately, experiencing less stress and fostering more positive intercultural interactions overall.

To assess these traits, the Multicultural Personality Questionnaire (MPQ) was developed, targeting these five dimensions of multicultural personality. The original version of the MPQ contains 90 items on a five-point Likert scale ([van der Zee and van Oudenhoven, 2000](#)), with a revised short version comprising 40 items ([van der Zee and van Oudenhoven, 2013](#)). Studies have demonstrated the MPQ's theorized five-factor structure, as well as its internal consistency, test-retest reliability, convergent and discriminant validity, and partial scalar and metric invariance across various cultural samples ([Genkova et al., 2021](#); [van der Zee and van Oudenhoven, 2013](#); [Wöhrle et al., 2015](#)). While personality is understood as a relatively stable individual disposition, research shows that the expression of personality traits generally may differ across cultural contexts due to social norms, interpretive frameworks, and context-specific expectations ([McCrae and Terracciano, 2005](#)). Nevertheless, the MPQ has been widely applied and validated across various cultural contexts. It was originally developed and validated in the Netherlands ([van der Zee and van Oudenhoven, 2000](#)) and has since been used in multiple countries, including Spain ([Bobowik et al., 2011](#)), Belgium ([van der Zee and van Oudenhoven, 2013](#)), and the United States ([Houtz et al., 2010](#)). Applications of the MPQ also extend to employees of Dutch multinationals ([Korzilius et al., 2011](#)), Western expatriates in Taiwan ([Van Oudenhoven et al., 2003](#)), and Canadian expatriates ([Simkhovych, 2009](#)). The scale has consistently demonstrated that personality traits like cultural empathy, flexibility, and emotional stability are crucial for successful intercultural adaptation. Despite its widespread use, the MPQ has predominantly been tested in Western or Far Eastern contexts, with limited data available for other regions such as Eastern Europe.

## 2.3 Prejudices

In this study, we examine the relationship between intercultural competence and prejudice toward refugees. Prejudices are defined as a preconceived, usually negative attitude toward members of a particular group ([Allport et al., 1954](#); [Dovidio et al., 2017](#)). Prejudice can manifest in both blatant and subtle forms, as outlined by [Pettigrew and Meertens \(1995\)](#). Blatant prejudice involves

open hostility, derogatory beliefs, and direct discrimination against outgroup members, reflecting a more overt and aggressive form of bias. In contrast, subtle prejudice is less overt, often masked by socially acceptable rhetoric and cultural critiques. This form of prejudice may be expressed through paternalistic attitudes, superficial tolerance, or by attributing negative characteristics to cultural differences rather than personal failings ([Pettigrew and Meertens, 1995](#)).

Research on prejudices has largely focused on identifying the various antecedents of negative intergroup attitudes ([Crocetti et al., 2021](#)). Prejudices are often seen as rooted in perceptions of cultural, economic, or symbolic threat ([Stephan and Stephan, 2000](#); [Crocetti et al., 2021](#); [Esses, 2021](#)). We chose to analyze prejudice toward refugees as a criterion of the MPQ and CQS, as opposed to a particular ethnicity or national group, since we assumed that the perception of concrete groups would be largely in-equivalent across samples. For instance, countries located at the so-called “Balkan-route” may have explicit prejudice toward Syrian immigrants while other participants wouldn't have as salient opinions on this group. While of course refugees are a highly heterogeneous group, we assume that the perception of refugees as a social category is somewhat more comparably in line with previous work by [Cowling et al. \(2019\)](#).

In the current study we refer to the term refugee as an individual who has been forced to flee their country due to persecution, war, or violence and has been recognized under international law as having the right to protection in another country. This is technically distinct from an asylum seeker, who is someone who has fled their home country and applied for refugee status but is still awaiting a legal decision on whether they will be granted protection. This is exemplary for how the individuals that fall in the social category of refugees are quite heterogeneous. Other examples include the different reception of Afghan and Ukrainian refugees in Western Europe ([de Coninck, 2023](#)). However, since the different experiences of those two groups are normally not salient for the majority society, we only addressed prejudices toward refugees as an ecologically valid use of these social category labels ([Cowling et al., 2019](#)).

Prejudice toward refugees may vary significantly between individuals with and without an immigration background. For people without an immigration background, prejudice toward refugees may be driven by a lack of direct experience or interaction with diverse cultural groups. Meta-analytic results from 11 countries (among them seven European studies, one US-American study) support that being male, being religiously affiliated, having less education, being politically conservative, being highly nationally identified, being high in RWA and SDO, and perceiving refugees as being symbolic and realistic threats correlated with prejudice toward refugees ([Cowling et al., 2019](#)).

In contrast, individuals with an immigration background may exhibit a more complex relationship with prejudice toward refugees. On one hand, shared experiences of migration or acculturation could foster empathy and understanding, resulting in lower levels of prejudice. People who have navigated their own challenges in adapting to a new culture may be more likely to identify with refugees and show solidarity ([Genkova and Groesdonk, 2021](#)). However, this is not always the case. For some,

the experience of discrimination or marginalization during their own immigration journey can lead to heightened competition for resources or social recognition, causing them to view refugees as rivals, rather than allies (Roth and Kim, 2013). This could result in higher levels of prejudice in some subgroups of individuals with a migration background, particularly if they feel economically or socially insecure.

## 2.4 Intercultural competence and prejudices

While some studies suggest that intercultural competence increases outgroup attitudes by supporting positive and meaningful interactions (e.g., Genkova et al., 2021), we assume that an individual that has learned to interact appropriately and effectively with members of other cultures should already hold lower levels of prejudices against refugees. Some models, like the IDI (Hammer, 2015) consider a lack of prejudices or even positive attitudes toward outgroups a component of intercultural competence. However, based on our previous definition of competence as the ability to reach one's goals in a given situation, low prejudice toward cultural outgroups should be considered a criterion and not a component of intercultural competence.

The five dimensions of the MPQ suggest indeed a relationship with positive attitudes toward outgroups. Open-mindedness is explicitly defined as an unprejudiced openness to different groups and cultural values (van der Zee and van Oudenhoven, 2000). Cultural empathy, while not directly addressing prejudice, involves an interest in others and the ability to understand and reflect on the perspectives of cultural outgroup members (van der Zee and van Oudenhoven, 2000; Nesdale et al., 2012). This ability closely parallels the concept of perspective-taking, which is empirically linked to reduced prejudice (Pettigrew and Tropp, 2008). Flexibility, which refers to adapting behaviors in unfamiliar settings (van der Zee and van Oudenhoven, 2000; Nesdale et al., 2012), may not inherently reduce prejudice, but its association with adapting to new cultural environments implies that individuals with higher flexibility are likely to display more positive attitudes toward outgroups. Empirical results support these theoretical links. Studies have shown that the MPQ is negatively correlated with ethnic prejudice (Nesdale et al., 2012; Hofhuis et al., 2020; Summerfield et al., 2021), suggesting that higher scores on these dimensions are associated with more favorable outgroup attitudes.

Cultural intelligence (CQ), like the MPQ, is conceptually linked to positive attitudes toward outgroups, including reduced prejudice. The four dimensions, metacognitive, cognitive, motivational, and behavioral (Ang and van Dyne, 2008), are key to understanding how individuals interact with and perceive people from other cultures. Previous studies show that higher scores in these CQ dimensions are associated with lower levels of prejudice. For example, a study by Genkova and Groesdonk (2021) found that students with higher CQ, particularly in the motivational and behavioral dimensions, demonstrated significantly lower levels of both subtle and blatant prejudices toward refugees. The authors argue that individuals with a strong motivation

to engage with other cultures are more likely to form positive attitudes toward outgroup members. Similarly, those who can adapt their behavior in culturally diverse contexts tend to show less overt prejudice. Moreover, the metacognitive dimension helps individuals critically reflect on and challenge their preconceived notions, fostering more open and inclusive attitudes. Cognitive CQ, while not directly related to prejudice reduction, may contribute by equipping individuals with the knowledge necessary to understand cultural differences and avoid making biased judgments based on ignorance or stereotypes (Genkova and Groesdonk, 2021).

Critical scholars emphasize the need to consider context specific variations in the expression and connotation of intercultural competence (e.g., Borghetti, 2017). This aligns with psychometric procedures to test equivalence or measurement and for standardizing psychological tests in order to account for systematic differences in the expression of constructs across target groups. This is no new concern, but since there is no validated and standardized test for intercultural competence, yet, the issue is still valid. While there are some applications of the MPQ and CQS in different cultures, as shown earlier (Rockstuhl and van Dyne, 2018; Lee and Sukoco, 2010; Greischel et al., 2021; Bobowik et al., 2011; Houtz et al., 2010; van der Zee and van Oudenhoven, 2013), the analyses usually don't extent to the question whether the MPQ and CQS are related to criterion variables, such as prejudice, similarly across groups. Despite the extensive research on both scales, there is a notable lack of studies examining whether the relationship between the MPQ and the CQS with prejudice can be generalized across countries. This gap poses a psychometric challenge, as without cross-cultural validation, it remains unclear whether the application of these constructs is consistent across different cultural contexts or whether it is influenced by cultural norms, social desirability biases, or measurement non-invariance. Applying MPQ and CQS findings uncritically is likely to lead to ecological fallacies and misinterpretations. From a psychometric standpoint, testing for equivalence of criterion validity is essential to ensure that these scales are consistently related to lower prejudice in diverse cultural settings, rather than reflecting context-specific effects that limit their generalizability.

## 2.5 The current study

This study aims to explore the relationships between measures of intercultural competence (CQS and MPQ) and prejudice against refugees across six national cultures and among students with and without an immigration background. Previous research has predominantly employed these instruments in Western and Far Eastern contexts. However, current research on intercultural competence is challenged by psychometric difficulties related to construct and criterion validity, as well as comparability of measurements across different groups of people. By addressing this gap, the current study contributes a culturally relativistic perspective to the analysis of intercultural competence and criterion validity in relation to prejudice toward refugees. Moreover, we address the question, in how far classic approaches of intercultural competence research may be transferable to the context of the selected Eastern European countries.

Our study samples include participants from both Western/Central European countries (Germany, the UK) and Eastern European countries (Hungary, the Czech Republic, Ukraine, and Serbia). These countries reflect diverse cultural and historical backgrounds, especially in terms of immigration policies and attitudes toward cultural diversity. Eastern European countries, shaped by unique post-communist histories and varying immigration policies, may approach cultural diversity and integration differently from their Western counterparts. Such differences underscore the need to examine whether traditional measures of intercultural competence, developed largely in Western contexts, are equally valid and applicable in Eastern Europe. The MPQ, for instance, was developed within a European context—specifically in the Netherlands (van der Zee and van Oudenhoven, 2000)—and may be more culturally aligned with the European settings in this study. In particular, it may resonate in contexts like the UK, where the legacy of colonialism plays a more open role in shaping societal attitudes and immigration policies. Conversely, the CQS, developed in the United States (Ang and van Dyne, 2008), may not fully capture the nuances of the European experience, particularly within Eastern European settings. Here, “equivalence” refers to the similarity in psychological meaning and relevance of the measures across different cultural contexts (van de Vijver and Poortinga, 2002; Genkova, 2019).

In order to contribute to the understanding of the equivalence of the two scales, we followed a procedure introduced by van de Vijver and Poortinga (2002) and Berry et al. (2002, see also Genkova, 2019; Triandis and Brislin, 1990). Given the novel context to apply the MPQ and CQS and the complexity of the constructs involved, we decided against rather inflexible applications of confirmatory factor analysis, which is a powerful tool for demonstrating invariance, but not necessarily for pointing out the differences between samples (van de Vijver and Poortinga, 2002; Genkova, 2019). Following an analysis of the factor structures, loadings, and correlational-matrices as means of structural equivalence, we addressed group mean differences (Berry et al., 2002).

Furthermore, we examined how these scales relate to prejudice toward refugees as a matter of criterion validity. To ensure a comprehensive evaluation of prejudice, we utilized both blatant and subtle measures of prejudice, as defined by Pettigrew and Meertens (1995), to capture overt as well as more covert expressions of prejudice. It was hypothesized that intercultural competence, as measured by the CQS and MPQ, would be negatively associated with prejudice toward refugees. This expectation aligns with previous findings that highlight the predictive capacities of the MPQ scales (van der Zee and van Oudenhoven, 2000; Nesdale et al., 2012; Summerfield et al., 2021; Hofhuis et al., 2020) as well as CQ (Genkova and Groesdonk, 2021).

We further tested whether the relationships between MPQ and CQS with blatant and subtle prejudices differ or stay the same across participants with and without immigration background and across the national samples. Since Serbian data for the prejudice variables are missing, we tested this only for Germany, UK, Czech Republic, Ukraine, and Hungary. Since there is no previous research on the regions involved, we didn't theorize about the direction of differences, but applied an explorative approach to

point out potential differences for informing future research and raise awareness.

By including both Western/Central European and Eastern European samples, this study tests the robustness of these intercultural competence measures in novel contexts as well as how intercultural competence could contribute to reduced prejudices in the context of different historical and cultural conditions for immigration. These distinct immigration traditions could lead to different patterns of prejudice, potentially mitigating the effectiveness of established approaches toward reducing prejudice. Thus, the current study contributes to the broader understanding of how intercultural competence impacts prejudice across diverse cultural settings, offering valuable insights into the cultural variability of these relationships.

## 2.6 Hypotheses

Hypothesis 1: The average scores on the MPQ and CQ scales differ across cultures.

Hypothesis 2: The relationship between the MPQ score and the expression of prejudices toward refugees is different for people with migration background compared to people without migration background.

Hypothesis 3: The relationship between the CQ score and the expression of prejudices toward refugees is different for people with migration background compared to people without migration background.

Hypothesis 4: The relationship between the MPQ score and the expression of prejudices toward refugees varies across the national sup-samples.

Hypothesis 5: The relationship between the CQ score and the expression of prejudices toward refugees varies across the national sup-samples.

## 3 Methodology

The study employed nationwide convenience sampling across several European Universities in collaboration with local research partners. Data collection involved both online and paper-pencil versions of the questionnaire, depending on accessibility and participant preference. Prior to participation, respondents were informed of the study's voluntary nature and assured of their anonymity. They were advised that data would be used strictly for scientific purposes and that they could withdraw from the study at any time without consequence. Participants provided informed consent before beginning the survey.

The survey included sociodemographic questions (e.g., age, gender, education) along with scales relevant to the study variables. All measurement instruments were translated into the primary language of each respective country using both an expert committee and back-translation approach. Following Triandis and Brislin (1990), native speakers initially translated the items from English into the target languages. These translations were then back-translated by native English speakers, after which a committee reviewed and adjusted the translations to ensure cultural and linguistic accuracy.

TABLE 1 Demographic information.

Gender	N	M	Median	SD	Minimum	Maximum
Female	1,100					
Male	476					
Migration background						
Yes	158					
No	976					
Age		29.11	24.00	43.81	15	71

There are no cases for the variable Migration Background for one German sample and Serbia.

TABLE 2 Field of study.

Field of study	n	Field of study	n	Field of study	n
Agriculture	23	Military	2	Dental Education	2
Archaeology	2	Music, Dance, Art	14	Economics	185
Architecture	3	Neuroscience	5	Engineering	42
Aviation	1	Pedagogics	48	Environmental Science	22
Biochemistry	1	Police	1	Humanities	7
Biology	8	Politics	64	Journalism	8
Business	135	Psychology	355	Languages	22
Chemistry	4	Sailor	3	Law	19
Childcare	4	Social Science	83	Literature	2
Communication	10	Sport	4	Mathematics	4
Computer Science	65	Theology	3	Media Science	13
		Liberal Arts	45	Medicine	35

### 3.1 Sample

The study included data from seven national samples across Germany (two samples), Serbia, the Czech Republic, the United Kingdom, Ukraine, and Hungary, totaling 1,593 students. Over all samples, 70% ( $n = 1,100$ ) were female vs. 30% ( $n = 476$ ) male adults. Age was in the range 15–71 years ( $M = 29.11$ ,  $SD = 43.81$ ) and 13.9% of participants ( $n = 158$ ) had a migration background. Table 1 summarizes the demographic information across all samples, Table 2 presents an overview of the study majors of participants.

In Germany Sample 1 ( $N = 207$ ), participants were primarily young adults ( $M = 26.3$ ,  $SD = 5.9$ ), with 70% female and 100% identifying as German nationals. Educational backgrounds were varied, with a mix of high school (58%) and university degrees (42%). Most were either unemployed (46%) or working part-time (32%). Religious affiliations included Catholic (33%), Protestant (26%), and 31% non-religious.

Germany Sample 2 ( $N = 251$ ) had similar demographics, with participants averaging 30.2 years ( $SD = 12.1$ ) and 75% female. The majority held a high school or university degree, with a small percentage holding a PhD (1%). Participants' religious affiliations were similar to Sample 1, though 25% identified as non-religious.

The Serbian Sample ( $N = 209$ ) consisted of primarily female (70%) participants, aged 18–47 ( $M = 21.7$ ,  $SD = 3.14$ ), with 100% identifying as Serbian nationals. Educational attainment was high, with 56% holding university degrees and 13% holding PhDs. Nearly all participants (97%) identified as Orthodox Christian.

In the Czech Republic Sample ( $N = 235$ ), participants were younger ( $M = 21.4$ ,  $SD = 1.99$ ), 64% female, and predominantly Czech (79%). Educational backgrounds were mainly high school (87%) and university (13%) and most identified as Christian (72%).

The UK Sample ( $N = 260$ ) was diverse in nationality (79% British) and ethnicity, with participants aged 18–65 ( $M = 30.6$ ,  $SD = 9.7$ ). The majority held university degrees (65%), and 60% identified as non-religious. This sample had a balanced gender distribution (45% male, 55% female).

Ukraine's Sample ( $N = 237$ ) was primarily female (77%), aged 15–65 ( $M = 29.8$ ,  $SD = 9.9$ ), with 77% Ukrainian nationals. Most participants had Bachelor's (54%) or Master's degrees (25.3%), with a religious distribution that included Orthodox Christian (25.7%) and Christian (32.5%).

Finally, the Hungarian Sample ( $N = 194$ ) was composed mostly of women (84%), aged 20–53 ( $M = 30.5$ ,  $SD = 7.9$ ). The sample was predominantly Hungarian (82%) and Catholic (45%), with high levels of university education (90%).

### 3.2 Measures

This study utilized established scales to assess intercultural competence and prejudice across different samples. Reliability (Cronbach's  $\alpha$ ) for each measure and sample is provided.

Multicultural Personality Questionnaire (MPQ): The MPQ (van der Zee and van Oudenhoven, 2013) assessed intercultural competence across five subscales, with responses on a five-point Likert scale (1 = "Totally not applicable" to 5 = "Completely applicable"). Reliability for each subscale across samples was as follows:

- *Cultural Empathy*: Ukraine  $\alpha = 0.88$ , Germany Sample 1  $\alpha = 0.87$ , Germany Sample 2  $\alpha = 0.83$ , Serbia  $\alpha = 0.82$ , Czech Republic  $\alpha = 0.82$ , UK  $\alpha = 0.85$ , Hungary  $\alpha = 0.91$
- *Open-mindedness*: Ukraine  $\alpha = 0.80$ , Germany Sample 1  $\alpha = 0.69$ , Germany Sample 2  $\alpha = 0.67$ , Serbia  $\alpha = 0.80$ , Czech Republic  $\alpha = 0.79$ , UK  $\alpha = 0.81$ , Hungary  $\alpha = 0.88$
- *Emotional Stability*: Ukraine  $\alpha = 0.70$ , Germany Sample 1  $\alpha = 0.81$ , Germany Sample 2  $\alpha = 0.83$ , Serbia  $\alpha = 0.84$ , Czech Republic  $\alpha = 0.68$ , UK  $\alpha = 0.88$ , Hungary  $\alpha = 0.82$
- *Social Initiative*: Ukraine  $\alpha = 0.77$ , Germany Sample 1  $\alpha = 0.81$ , Germany Sample 2  $\alpha = 0.85$ , Serbia  $\alpha = 0.83$ , Czech Republic  $\alpha = 0.73$ , UK  $\alpha = 0.82$ , Hungary  $\alpha = 0.85$
- *Flexibility*: Ukraine  $\alpha = 0.70$ , Germany Sample 1  $\alpha = 0.85$ , Germany Sample 2  $\alpha = 0.82$ , Serbia  $\alpha = 0.89$ , Czech Republic  $\alpha = 0.75$ , UK  $\alpha = 0.88$ , Hungary  $\alpha = 0.88$

Cultural Intelligence Scale (CQS): The CQS (Ang and van Dyne, 2008) used 20 items on a seven-point scale (1 = "Strongly



disagree” to 7 = “Strongly agree”) to measure four dimensions of cultural intelligence. Reliability values across samples were:

- *Metacognitive CQ*: Ukraine  $\alpha = 0.88$ , Germany Sample 1  $\alpha = 0.82$ , Germany Sample 2  $\alpha = 0.84$ , Serbia  $\alpha = 0.88$ , Czech Republic  $\alpha = 0.83$ , UK  $\alpha = 0.86$ , Hungary  $\alpha = 0.93$
- *Cognitive CQ*: Ukraine  $\alpha = 0.86$ , Germany Sample 1  $\alpha = 0.82$ , Germany Sample 2  $\alpha = 0.85$ , Serbia  $\alpha = 0.87$ , Czech Republic  $\alpha = 0.80$ , UK  $\alpha = 0.89$ , Hungary  $\alpha = 0.91$
- *Motivational CQ*: Ukraine  $\alpha = 0.83$ , Germany Sample 1  $\alpha = 0.88$ , Germany Sample 2  $\alpha = 0.89$ , Serbia  $\alpha = 0.87$ , Czech Republic  $\alpha = 0.86$ , UK  $\alpha = 0.89$ , Hungary  $\alpha = 0.91$
- *Behavioral CQ*: Ukraine  $\alpha = 0.89$ , Germany Sample 1  $\alpha = 0.86$ , Germany Sample 2  $\alpha = 0.84$ , Serbia  $\alpha = 0.92$ , Czech Republic  $\alpha = 0.86$ , UK  $\alpha = 0.88$ , Hungary  $\alpha = 0.93$

Blatant and Subtle Prejudice Scale: The scale by [Pettigrew and Meertens \(1995\)](#) used 20 items on a six-point scale, covering five dimensions. Reliability was as follows:

- *Threat*: Ukraine  $\alpha = 0.55$ , Germany Sample 1  $\alpha = 0.89$ , Germany Sample 2  $\alpha = 0.86$ , Serbia (data not provided), Czech Republic  $\alpha = 0.75$ , UK  $\alpha = 0.82$ , Hungary  $\alpha = 0.61$
- *Intimacy*: Ukraine  $\alpha = 0.73$ , Germany Sample 1  $\alpha = 0.78$ , Germany Sample 2  $\alpha = 0.72$ , Serbia (data not provided), Czech Republic  $\alpha = 0.76$ , UK  $\alpha = 0.81$ , Hungary  $\alpha = 0.73$
- *Traditional Values*: Ukraine  $\alpha = 0.56$ , Germany Sample 1  $\alpha = 0.81$ , Germany Sample 2  $\alpha = 0.79$ , Serbia (data not provided), Czech Republic  $\alpha = 0.73$ , UK  $\alpha = 0.82$ , Hungary  $\alpha = 0.77$
- *Cultural Differences*: Ukraine  $\alpha = 0.76$ , Germany Sample 1  $\alpha = 0.76$ , Germany Sample 2  $\alpha = 0.65$ , Serbia (data not provided), Czech Republic  $\alpha = 0.71$ , UK  $\alpha = 0.78$ , Hungary  $\alpha = 0.80$
- *Positive Emotions*: Ukraine  $\alpha = 0.64$ , Germany Sample 1  $\alpha = 0.80$ , Germany Sample 2  $\alpha = 0.69$ , Serbia (data not provided), Czech Republic  $\alpha = 0.72$ , UK  $\alpha = 0.84$ , Hungary  $\alpha = 0.75$ .

### 3.3 Comparability of measurement

To analyze structural equivalence across the six national groups in this study, we conducted exploratory factor analyses and comparison of correlational matrices following [van de Vijver and Poortinga \(2002\)](#); [Berry et al., 2002](#); [Genkova, 2019](#); [Triandis and Brislin, 1990](#)).

#### 3.3.1 Exploratory factor analysis (EFA)

Each scale underwent an EFA for each cultural group, suppressing factor loadings below 0.4 ([Stevens, 2002](#)). Factor analyses were performed across all samples. Kaiser-Meyer-Olkin measures indicated adequate sampling adequacy, and Bartlett’s tests of sphericity were significant across groups, supporting the appropriateness of factor analysis. Factors corresponded to prior theoretical models and explained between 50% and 77% of total variance, depending on the sample and scale. Congruence in factor

loadings between the five cultures as indicated by Tuckers Phi was acceptable, ranging between  $\Phi = 0.90$ – $0.98$ .

#### 3.3.2 MPQ

Consistent with previous research on the MPQ ([van der Zee and van Oudenhoven, 2013](#)), five factors were extracted: cultural empathy, open-mindedness, emotional stability, orientation to action, and flexibility. The Kaiser-Meyer-Olkin (KMO) measures of sampling adequacy and Bartlett’s tests of sphericity indicated good model fit across all samples (KMO ranging from 0.75 to 0.88; Bartlett’s test  $p < 0.001$ ). Each country’s analysis yielded eigenvalues and factor loadings that were largely in line with theoretical expectations. For instance, in Germany Sample 1, the five extracted factors had eigenvalues ranging from 5.14 to 2.93, explaining 50.32% of the variance. Similarly, in other samples, eigenvalues ranged from approximately 6.44 in Ukraine to 3.89 in the Czech Republic, with explained variance percentages between 42.20% and 59.45%. Factor loadings for the items in each factor generally ranged from 0.40 to 0.85, reinforcing the consistency of the MPQ structure across different cultural contexts.

#### 3.3.3 Prejudice

In line with the model outlined by [Pettigrew and Meertens \(1995\)](#) each analysis specified five factors—threat, intimacy, tradition, cultural differences, and positive emotions—reflecting established theoretical constructs. The Kaiser-Meyer-Olkin (KMO) measure and Bartlett’s test of sphericity yielded satisfactory results (KMO values ranged from 0.75 to 0.9, with Bartlett’s  $\chi^2$  values significant at  $p < 0.001$ ). The extracted factors explained between 56.64% and 70.55% of the total variance across countries, with factor loadings consistently above 0.4, confirming a coherent factor structure in most samples. Specifically, the factors explained 70.55% of the variance in Germany Sample 1 and 64.65% in Germany Sample 2. The Czech Republic sample showed 59.12% variance explained, while the UK sample accounted for 66.15%, Ukraine for 56.64%, and Hungary for 59.62%. Notably, due to substantial missing data, results from the Serbian sample were excluded.

#### 3.3.4 CQS

The analysis followed the structure proposed by [Ang and van Dyne \(2008\)](#), specifying four factors—metacognitive CQ, cognitive CQ, motivational CQ, and behavioral CQ—as core components of cultural intelligence. Each sample exhibited strong factor structure validity, as confirmed by satisfactory Kaiser-Meyer-Olkin (KMO) measures (ranging from 0.83 to 0.9) and significant Bartlett’s tests of sphericity ( $\chi^2$  values significant at  $p < 0.001$ ). Across samples, the four extracted factors accounted for a substantial proportion of the total variance, ranging from 63.26% in the Czech Republic to 76.41% in Hungary, with individual factor loadings consistently above 0.4. Specifically, Germany Sample 1 explained 64.11% of the variance, Germany Sample 2 explained 65.31%, Serbia 70.30%, the Czech Republic 63.26%, the UK 68.54%, Ukraine 66.52%, and Hungary 76.41%.

Inter-Item Correlations: We examined the direction and consistency of item correlations within each scale across the

cultural groups. Items in all scales, showed consistent correlation patterns across groups, indicating cross-cultural stability in item associations. Together, these analyses indicate that the MPQ, CQ, and Prejudice scales indicated structural cross-cultural comparability and comparability in factor loadings (weak invariance), justifying their use in subsequent analyses across the national groups. As we addressed the expression of the scales subsequently, we didn't compare intercepts or residuals.

## 4 Results

### 4.1 Hypothesis 1 overall MPQ, MPQ subscales, overall CQ and CQ dimensions across cultures

A MANOVA analysis confirmed that the overall scores and dimensions of the Multicultural Personality Questionnaire (MPQ) and the Cultural Intelligence Scale (CQ) significantly differed across the six cultural groups in line with Hypothesis 1 [Wilk's Lambda = 0.61,  $F_{(45,7,066)} = 18.13$ ,  $p < 0.001$ , partial  $\eta^2 = 0.09$ ]. *Post-hoc* Scheffé comparisons further specified these variations, revealing notable differences in both the aggregate intercultural competence scores and their respective subdimensions. **Table 3** displays mean values and standard deviations across all groups and variables.

For the overall MPQ score, significant differences emerged among multiple cultural groups. Specifically, Serbia ( $M = 3.37$ ,  $SD = 0.43$ ) had a significantly higher MPQ score than both the UK ( $M = 3.20$ ,  $SD = 0.42$ ) and the Czech Republic ( $M = 3.22$ ,  $SD = 0.35$ ), indicating that the Serbian participants exhibited stronger multicultural personality traits on average. Ukraine ( $M = 3.38$ ,  $SD = 0.38$ ) also demonstrated higher overall MPQ scores than both the UK and the Czech Republic, while Hungary's mean MPQ score ( $M = 3.34$ ,  $SD = 0.41$ ) exceeded that of the UK. In the MPQ subscales, cultural empathy and open-mindedness showed substantial cross-cultural variation. For instance, empathy scores for Hungary ( $M = 4.31$ ,  $SD = 0.62$ ) were significantly higher than those for both the Czech Republic ( $M = 3.92$ ,  $SD = 0.57$ ) and Ukraine ( $M = 4.11$ ,  $SD = 0.75$ ). In open-mindedness, Serbia ( $M = 3.78$ ,  $SD = 0.63$ ) scored significantly higher than Germany ( $M = 3.47$ ,  $SD = 0.43$ ), the Czech Republic ( $M = 3.17$ ,  $SD = 0.67$ ), and Hungary ( $M = 3.73$ ,  $SD = 0.70$ ), indicating a wider acceptance of cultural diversity.

The emotional stability subscale also displayed distinct cultural differences, where Ukraine ( $M = 3.16$ ,  $SD = 0.65$ ) scored significantly higher than Serbia ( $M = 2.91$ ,  $SD = 0.87$ ) and the UK ( $M = 2.89$ ,  $SD = 0.88$ ), suggesting that participants from Ukraine may feel more emotionally resilient in intercultural settings. Additionally, social initiative was higher among German participants ( $M = 3.41$ ,  $SD = 0.55$ ) compared to the Czech Republic ( $M = 3.16$ ,  $SD = 0.63$ ), and both Germany and Hungary displayed stronger orientation to action than other cultures, pointing to a potential regional pattern of proactive engagement in intercultural situations.

In the CQ scale, significant differences were also evident across cultures, both in overall CQ and in the individual subdimensions. Overall CQ was particularly high in Ukraine ( $M = 4.69$ ,  $SD = 1.09$ ) and Serbia ( $M = 4.72$ ,  $SD = 1.13$ ), which were significantly higher

than scores in the Czech Republic ( $M = 4.02$ ,  $SD = 0.94$ ), indicating that Ukrainian and Serbian participants tend to score higher on CQ overall. Germany ( $M = 4.58$ ,  $SD = 0.82$ ) and the UK ( $M = 4.59$ ,  $SD = 0.87$ ) also demonstrated significantly higher overall CQ scores than the Czech Republic.

The CQ subscales revealed nuanced differences among the cultural groups. In metacognitive CQ, Ukraine ( $M = 5.10$ ,  $SD = 1.51$ ), Hungary ( $M = 5.07$ ,  $SD = 1.47$ ), and the UK ( $M = 5.08$ ,  $SD = 1.04$ ) scored significantly higher than the Czech Republic ( $M = 4.16$ ,  $SD = 1.24$ ), indicating a higher level of reflective awareness about cultural contexts in these groups. For cognitive CQ, Serbia's score ( $M = 4.39$ ,  $SD = 1.43$ ) was notably higher than both the UK ( $M = 3.66$ ,  $SD = 1.22$ ) and Hungary ( $M = 3.71$ ,  $SD = 1.25$ ), suggesting that Serbian participants reported greater cultural knowledge compared to these groups. Motivational CQ scores were particularly high in Serbia ( $M = 5.47$ ,  $SD = 1.36$ ), surpassing scores in Germany ( $M = 5.03$ ,  $SD = 1.10$ ), the Czech Republic ( $M = 4.20$ ,  $SD = 1.34$ ), and Hungary ( $M = 4.51$ ,  $SD = 1.41$ ), indicating a pronounced willingness to engage in intercultural contexts in the Serbian sample.

Behavioral CQ, which assesses the ability to adapt verbal and non-verbal behaviors across cultural contexts, also varied across samples. German participants ( $M = 4.80$ ,  $SD = 1.15$ ) showed significantly higher scores than both the Czech Republic ( $M = 3.75$ ,  $SD = 1.33$ ) and Hungary ( $M = 3.98$ ,  $SD = 1.57$ ). Ukraine ( $M = 4.80$ ,  $SD = 1.45$ ) and the UK ( $M = 4.50$ ,  $SD = 1.20$ ) similarly scored higher than several other groups, suggesting that participants from these countries may feel more capable of adjusting behaviors in intercultural interactions.

Overall, these results indicate meaningful cross-cultural differences in MPQ and CQ scores and highlight specific cultural dimensions where participants from certain countries, such as Serbia and Ukraine, exhibit higher average scores for intercultural competence.

### 4.2 Hypothesis 2: migration background as a moderator of MPQ and prejudice

To assess whether migration background moderates the relationship between multicultural personality (MPQ) and prejudice, we conducted moderated regression analyses using IBM SPSS 28. We tested prejudice subscales (blatant and subtle), with migration background coded as a binary variable (0 = no migration background, 1 = migration background), testing an overall effect of an MPQ mean variable first (Hypothesis 2a) and separate effects for the subscales subsequently (Hypothesis 2b).

The assumptions of normality of residuals and homoscedasticity were examined and met sufficiently for all analyses. The histograms showed no severe deviations from normality. The Shapiro-Wilk tests were non-significant, confirming that the residuals followed an approximately normal distribution. The scatterplots showed no clear pattern, indicating that the residuals were evenly spread across different levels of predicted values. All VIF values ranged between 1.06 and 2.52, well below the threshold of 10. Tolerance values were

TABLE 3 Means and Standard Deviations in MPQ subscales, CQ subscales, CQ, and MPQ.

Country	Germany		Serbia		Czech Republic		UK		Ukraine		Hungary	
Measure	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Metacognitive CQ	4.68	1.10	5.05	1.51	4.16	1.24	5.08	1.04	5.10	1.51	5.07	1.47
Cognitive CQ	3.83	1.00	4.40	1.43	4.00	1.05	3.66	1.22	3.97	1.24	3.71	1.25
Motivational CQ	5.03	1.10	5.47	1.35	4.20	1.34	5.12	1.15	4.88	1.31	4.51	1.41
Behavioral CQ	4.80	1.15	3.97	1.84	4.20	1.34	5.12	1.15	4.88	1.31	4.51	1.41
Cultural empathy	4.18	0.48	4.26	0.56	3.92	0.57	4.12	0.57	4.11	0.75	4.31	0.62
Openmindedness	3.47	0.43	3.78	0.63	3.17	0.67	3.57	0.63	3.51	0.70	3.73	0.70
Emotional stability	3.00	0.64	2.91	0.87	3.09	0.61	2.89	0.88	3.16	0.65	2.95	0.78
Orientation to action	3.41	0.55	3.36	0.76	3.16	0.62	3.17	0.73	3.48	0.71	3.43	0.76
Flexibility	2.52	0.57	2.54	0.87	2.78	0.66	2.23	0.71	2.67	0.62	2.27	0.74
CQ mean	4.58	0.82	4.72	1.13	4.02	0.94	4.59	0.87	4.69	1.09	4.32	1.14
MPQ mean	3.32	0.30	3.37	0.43	3.22	0.35	3.20	0.42	3.38	0.38	3.34	0.42

TABLE 4 Bivariate correlations between dependent and independent variables across all sub-samples.

Nr	Variable	1	2	3	4
1	Subtle prejudice		0.611**	0.278**	0.073**
2	Blatant prejudice	<0.001		0.285**	0.140**
3	CQS	<0.001	<0.001		0.414**
4	MPQ	0.007	<0.001	<0.001	

*N* = 1,593; \*\*the correlation is significant on the *p* < 0.001 level; fields over the diagonal represent the correlation-coefficient *r*, fields under the diagonal contain the corresponding level of significance *p*.

above 0.40, and no bivariate correlation between predictors exceeded 0.70. Table 4 displays bivariate correlations between the dependent and independent variables across all sub-samples. All variables were standardized (*M* = 0, *SD* = 1) to minimize multicollinearity.

Results indicated that migration background moderated the link between MPQ and subtle prejudice but not for overall or blatant prejudice. Specifically, the interaction effect between MPQ and migration background was significant for subtle prejudice [*R*<sup>2</sup> = 0.02, *F*(3,1,575) = 4.35, *p* < 0.01, *b* = -0.18, *β* = -0.06, *SE* = 0.08, *p* < 0.05], with a weaker relationship between MPQ and subtle prejudice for individuals with a migration background. The migration background did not moderate the effect of MPQ for blatant prejudice [*R*<sup>2</sup> = 0.02, *F*(3,1,575) = 10.49, *p* < 0.001]. This partially supports Hypothesis 2a, suggesting that subtle forms of prejudice may be related less strong with multicultural personality traits for those with a migration background.

When examining the five MPQ subscales (empathy, open-mindedness, emotional stability, orientation to action, and flexibility) individually, no moderation effects were found. Thus, Hypothesis 2b was not supported, indicating that migration background does not significantly alter the relationship between MPQ subdimensions and either subtle or blatant prejudice.

### 4.3 Hypothesis 3: migration background as a moderator of CQ and prejudice

Hypothesis 3 aimed to explore whether migration background moderates the relationship between cultural intelligence (CQ) and prejudice. Again, we tested an overall effect of a CQ mean variable first (Hypothesis 3a) and separate effects for the subscales subsequently (Hypothesis 3b). Results from moderated regression analyses revealed significant moderation effects for subtle prejudice [*R*<sup>2</sup> = 0.07, *F*(3,1,575) = 37.73, *p* < 0.001, *b* = -0.19, *β* = -0.06, *SE* = 0.08, *p* < 0.05], but not blatant prejudice. The association between CQ and subtle prejudice was weaker for participants with a migration background, providing partial support for Hypothesis 3a.

When examining CQ subdimensions (cognitive, metacognitive, motivational, and behavioral), only behavioral CQ showed a significant moderation effect of migration background for both blatant and subtle prejudice [*R*<sup>2</sup> ≤ 0.17, *F*(9,1,569) ≤ 36.20, *p* < 0.001, *b* ≤ -0.27, *β* ≤ -0.01, *SE* ≤ 0.11, *p* < 0.01]. This finding suggests that the effect of behavioral CQ on prejudice, especially subtle prejudice, is diminished for individuals with a migration background, partially supporting Hypothesis 3b.

### 4.4 Hypothesis 4 culture as moderator of MPQ and prejudice

Hypothesis 4a proposed that the relationship between the Multicultural Personality Questionnaire (MPQ) and prejudice may vary across different cultural contexts. To test this hypothesis, we conducted both separate multiple regression analyses for each country and moderated regression analyses with culture as a moderator.

In the initial separate regression analyses by country, a significant relationship emerged between MPQ scores and blatant prejudice in Germany, the Czech Republic, and Ukraine, where higher MPQ scores were associated with lower levels of blatant

prejudice [ $R^2 = 0.08$ ,  $F_{(1,456)} = 21.01$ ,  $p < 0.05$ ,  $b \leq 0.27$ ,  $\beta \leq 0.29$ ,  $SE \leq 0.06$ ]. Moreover, in both Germany and the Czech Republic, higher MPQ scores were also linked to lower levels of subtle prejudice [ $R^2 = 0.05$ ,  $F_{(1,456)} = 21.34$ ,  $p < 0.01$ ,  $b \leq 0.26$ ,  $\beta \leq 0.21$ ,  $SE \leq 0.06$ ]. This finding suggests that in these contexts, individuals scoring higher on multicultural personality traits exhibit lower prejudice levels, supporting a link between intercultural competence and reduced prejudice.

In the moderated regression analyses, we included dummy variables representing different countries to test whether culture moderated the association between MPQ and prejudice. Germany served as the reference group (coded 0 for all dummy variables), while other countries were represented as follows: Dummy1 for the Czech Republic, Dummy2 for the UK, Dummy3 for Ukraine, and Dummy4 for Hungary. Each country's dummy variable was coded as 1 for that country and 0 for all others. We tested the interaction terms between each dummy variable and MPQ to examine the moderation effects.

The moderated regression analysis revealed that culture indeed moderated the relationship between MPQ and prejudice. Specifically, compared to Germany, the association between MPQ and both overall and subtle prejudice was weaker in the UK, Ukraine, and Hungary [ $R^2 = 0.29$ ,  $F_{(9,1,374)} = 62.45$ ,  $p < 0.001$ ,  $b = -0.16$ ,  $\beta = -0.07$ ,  $SE = 0.08$ ,  $p < 0.05$ ]. This finding indicates that while higher MPQ scores generally correlate with lower prejudice in Germany, this relationship is less pronounced in the UK, Ukraine, and Hungary. The cultural context appears to play a role in the strength of the relationship between MPQ and prejudice, with variations likely reflecting differences in societal norms, intercultural experiences, or tolerance levels within each country.

Hypothesis 4b posited that cultural context moderates the relationship between specific MPQ subscales and prejudice. Separate regressions on the relationships between MPQ subscales and blatant [ $R^2 \leq 0.12$ ,  $F_{(5,452)} \leq 10.65$ ,  $p < 0.05$ ] and subtle prejudice [ $R^2 \leq 0.11$ ,  $F_{(5,452)} \leq 11.21$ ,  $p < 0.01$ ] revealed cultural differences. In Hungary, the model for blatant prejudice was not significant, so these results are not included here. Cultural empathy was significantly positively related to blatant prejudice in Germany, the UK, and Ukraine ( $b \leq 0.27$ ,  $\beta \leq 0.37$ ,  $SE \leq 0.08$ ,  $p < 0.05$ ), as well as to subtle prejudice in Ukraine and Germany ( $b \leq 0.23$ ,  $\beta \leq 0.35$ ,  $SE \leq 0.06$ ,  $p < 0.001$ ). Open-mindedness was positively related to blatant prejudice in the Czech Republic ( $b = 0.24$ ,  $\beta = 0.29$ ,  $SE = 0.06$ ,  $p < 0.001$ ) and to subtle prejudice in both the Czech Republic and Germany ( $b \leq 0.27$ ,  $\beta \leq 0.19$ ,  $SE \leq 0.07$ ,  $p < 0.05$ ), but negatively related to subtle prejudice in Ukraine ( $b = -0.14$ ,  $\beta = -0.18$ ,  $SE = 0.06$ ,  $p < 0.05$ ). Emotional stability was not related to blatant prejudice in any country, but was negatively related to subtle prejudice in the UK ( $b = -0.16$ ,  $\beta = -0.18$ ,  $SE = 0.06$ ,  $p < 0.01$ ). Orientation to action was not associated with blatant prejudice in any context but was negatively related to subtle prejudice in Hungary ( $b = -0.23$ ,  $\beta = -0.26$ ,  $SE = 0.07$ ,  $p < 0.01$ ). Finally, flexibility was positively related to blatant prejudice in both the UK and Germany ( $b \leq 0.23$ ,  $\beta \leq 0.21$ ,  $SE \leq 0.06$ ,  $p < 0.05$ ) and to subtle prejudice in the Czech Republic, Hungary, and Germany ( $b \leq 0.18$ ,  $\beta \leq 0.21$ ,  $SE \leq 0.07$ ,  $p < 0.05$ ).

To further analyze the moderating role of culture, structural equation modeling was performed using AMOS 28, which tested

the effect of cultural context on the relationships between MPQ subscales and prejudice. We conducted two moderation analyses for the dependent variables blatant prejudice and subtle prejudice. We regressed blatant prejudice and subtle prejudice on the five MPQ subscales (empathy, openmindedness, emotional stability, flexibility, and orientation to action), the four dummy variables for culture, the product of each dummy variable for culture and each of the MPQ subdimensions. The dummy variables are the same as the ones described above. The product terms tested the moderation effects of culture.

The results of the model fit for blatant prejudice were the following: CMIN = 0.38,  $p = 0.54$ , CMIN/df = 0.38, CFI = 1.00, TLI = 1.02, RMSEA = 0.00. The relationship of empathy with blatant prejudice was weaker for the Czech Republic and Hungary in comparison to Germany ( $b \leq -0.19$ ,  $SE \leq 0.08$ ,  $p < 0.05$ ).

The results of the model fit for subtle prejudice were the following: CMIN = 1.63,  $p = 0.20$ , CMIN/df = 1.63, CFI = 1.00, TLI = 0.99, RMSEA = 0.02. The relationship of empathy with subtle prejudice was weaker for the Czech Republic in comparison to Germany ( $b = -0.23$ ,  $SE = 0.08$ ,  $p < 0.01$ ). The relationship of openmindedness with subtle prejudice was weaker in Ukraine in comparison to Germany ( $b = -0.36$ ,  $SE = 0.09$ ,  $p < 0.01$ ). Emotional stability had a weaker relationship with subtle prejudice in the UK in comparison to Germany ( $b = -0.15$ ,  $SE = 0.05$ ,  $p < 0.01$ ). Orientation to action had a weaker relationship with subtle prejudice in Hungary in comparison to Germany ( $b = -0.16$ ,  $SE = 0.08$ ,  $p < 0.05$ ).

In summary, these findings support Hypotheses 4a and 4b, demonstrating that cultural context moderates the effects of MPQ and its subscales on different types of prejudice. While some MPQ subscales, such as cultural empathy, were consistently related to lower levels of prejudice in several countries, other dimensions, such as open-mindedness and flexibility, exhibited variable relationships with prejudice depending on the cultural context.

## 4.5 Hypothesis 5 culture as moderator of overall CQ and prejudice

To examine Hypothesis 5a, which posits that cultural context moderates the effect of overall Cultural Intelligence (CQ) on prejudice, we conducted multiple regression analyses in each country. In Germany, the Czech Republic, the UK, and Ukraine, higher CQ was significantly associated with lower levels of prejudice, both blatant and subtle [ $R^2 \leq 0.13$ ,  $F_{(1,456)} \leq 66.26$ ,  $p < 0.05$ ,  $\beta \leq 0.36$ ,  $p < 0.05$ ]. This suggests that in these countries, individuals with higher CQ scores tended to hold less prejudiced views.

When analyzed across all samples, cultural context moderated the relationship between CQ and prejudice, with the effect of CQ on prejudice (including both blatant and subtle forms) being weaker in Ukraine and Hungary compared to Germany [ $R^2 \leq 0.33$ ,  $F_{(9,1,374)} \leq 73.82$ ,  $p < 0.001$ ,  $\beta \leq -0.07$ ,  $p < 0.05$ ]. This was observed more prominently in the case of subtle prejudice, where the association between CQ and prejudice was weaker in Ukraine, Hungary, and

the Czech Republic ( $\beta \leq -0.08$ ,  $p < 0.05$ ). These results partially support Hypothesis 5a.

In Hypothesis 5b, we proposed that culture would moderate the effects of specific CQ dimensions—metacognitive, cognitive, motivational, and behavioral CQ—on prejudice. Separate regression analyses for each country revealed that, in the case of blatant prejudice, cognitive CQ showed a negative association across Germany, the UK, and Ukraine ( $b \leq -0.12$ ,  $\beta \leq -0.11$ ,  $SE \leq 0.07$ ,  $p < 0.05$ ), suggesting that individuals with more extensive cultural knowledge held fewer openly prejudiced views in these contexts. Motivational CQ, demonstrated a negative association with blatant prejudice across all countries ( $b \leq -0.60$ ,  $\beta \leq -0.57$ ,  $SE \leq 0.09$ ,  $p < 0.05$ ) and with subtle prejudice specifically in the Czech Republic and Germany ( $b \leq -0.54$ ,  $\beta \leq -0.46$ ,  $SE \leq 0.06$ ,  $p < 0.001$ ). Additionally, behavioral CQ was inversely associated with blatant prejudice in the Czech Republic ( $b = -0.20$ ,  $\beta = -0.21$ ,  $SE = 0.06$ ,  $p < 0.01$ ).

To further examine cultural moderation of these relationships, we conducted moderated regression analyses across all countries [ $R^2 \leq 0.39$ ,  $F_{(24,1,359)} \leq 35.94$ ,  $p < 0.001$ ]. Findings revealed that the relationship between metacognitive CQ and both general and subtle prejudice was stronger in the UK than in Germany ( $\beta \leq 0.07$ ,  $p < 0.05$ ), indicating a stronger effect of awareness in intercultural interactions in the UK. The relationship between motivational CQ and prejudice (including subtle and blatant forms) was weaker in the Czech Republic, UK, Ukraine, and Hungary compared to Germany ( $b \leq -0.20$ ,  $\beta \leq -0.08$ ,  $SE = 0.09$ ,  $p < 0.01$ ). Lastly, the link between behavioral CQ and prejudice was weaker in the Czech Republic compared to Germany ( $b \leq -0.16$ ,  $\beta \leq -0.07$ ,  $SE = 0.08$ ,  $p < 0.05$ ).

We conducted also a Confirmatory Factor Analyses with AMOS 28 to test the moderation model of culture on the link between CQ subscales and prejudice. The Chi-square test for model fit was significant so we do not report these findings.

Overall, these results lend partial support to Hypothesis 5b, illustrating that cultural context influences the strength of associations between CQ dimensions and prejudice. Specifically, while certain CQ dimensions, such as motivational CQ, are consistently related to prejudice reduction across cultures, the strength and direction of these relationships vary, particularly for behavioral and cognitive CQ. This underscores the complex and context-dependent nature of CQ's impact on prejudice.

## 5 Discussion

In this study, established instruments for assessing intercultural competence and prejudice—originally developed and validated primarily in Western contexts—were applied across several central and Eastern European samples. This approach provided a cross-cultural examination of the instruments' robustness and consistency as well as their relationships with prejudice. The inclusion of Eastern European cultures, which have distinct historical backgrounds shaped by factors such as communism and the aftermath of the USSR breakdown, enabled the study to analyze established perspectives and adds to the discussion on if and how to measure intercultural competence.

The MPQ and CQS showed sufficient structural equivalence, indicating that both scales measure the same construct in all samples (Berry et al., 2002; Genkova, 2019). However, the significant mean differences in MPQ and CQS scores across the samples in this study raise important considerations regarding measurement equivalence across cultures. Ideally, if these instruments measured the same constructs equivalently across cultural contexts, mean differences would reflect actual variations in traits like intercultural competence and cultural intelligence rather than inconsistencies in interpretation or response style. However, these results suggest potential limitations in construct validity, as individuals across cultures may interpret or value the constructs differently. Additionally, response bias may play a role; for example, cultural norms around modesty or self-promotion could affect self-assessment, leading to inflated or deflated scores in different groups. These discrepancies also suggest challenges to metric, and scalar invariance—key aspects of measurement equivalence that enable meaningful cross-cultural comparisons. Without these forms of invariance, interpreting mean differences becomes complex, as it is unclear if they represent genuine trait differences or are artifacts of cultural interpretation. Therefore, while these instruments provide useful insights, further adaptation or validation work may be necessary to ensure they measure intercultural competencies robustly across diverse cultural contexts.

The main focus of the current manuscript was exploring whether the criterion validity of the MPQ and CQS is comparable across the samples. Ideally, one might expect that these constructs would relate similarly to prejudice toward refugees across diverse contexts—an assumption that underpins many claims about the universality and generalizability of intercultural competence as a key to fostering more harmonious intergroup relations. However, the results demonstrate notable variations in how intercultural competence relates to prejudice, calling into question the idea of intercultural competence as a universally effective “cure-all” for improving inter-group interactions. While these variations might partly reflect culturally specific notions of “refugees” and context-dependent social representations, they also highlight a deeper issue: that existing instruments may exhibit internal psychometric validity within individual contexts but still fail to capture critical dimensions of interculturality—particularly those shaped by power, positionality, and lived experience.

The concrete differences include that the MPQ scores were associated with reduced blatant prejudice in Germany, the Czech Republic, and Ukraine, and with reduced subtle prejudice in Germany and the Czech Republic. Conversely, there wasn't a significant relationship between the MPQ and prejudice at all in the UK and Hungary. Thus, results from Germany, Czech Republic, and partially Ukraine were in line with previous results, while results from UK and Hungary were contrary to the classic approaches in intercultural competence research (Genkova, 2019; Summerfield et al., 2021).

Germany has a long history of immigrant integration policies and public discourse around diversity, especially since the mid-twentieth century (Thradhardt, 2020). Programs promoting intercultural understanding have been prominent, which may reinforce the positive impact of multicultural personality on

reducing prejudice. The Czech Republic, while having a less extensive history of immigration, has been influenced by recent European Union efforts promoting cultural inclusivity, particularly as it integrates more into Western European frameworks (Duszczak et al., 2020; Tabosa, 2020). Individuals with multicultural personality traits may align with these emerging norms, making them more likely to adopt inclusive attitudes. Ukraine, in the context of recent conflict and displacement, has seen significant movement of people within its borders and outward to other countries (Vasylytsiv et al., 2019). The openness associated with multicultural personality traits may align with a cultural sensitivity toward displacement and support for marginalized groups, leading to lower prejudice among individuals with high MPQ scores. In the contrast, the UK has historically had a diverse population due to its colonial legacy, and while it has developed multicultural policies, attitudes toward immigration and diversity can be polarized (Fernández-Reino and Cinzia, 2022). The longstanding, often contentious debates around immigration may create a complex environment in which multicultural personality traits do not directly translate into lower prejudice.

In terms of CQ, the study shows that in Germany, the Czech Republic, the UK, and Ukraine, cultural intelligence is generally related to lower prejudice toward refugees, results being in line with previous results (Genkova and Groesdonk, 2021). However, the connection between CQ and reduced prejudice was weaker in Ukraine, concerning subtle prejudice. Cognitive CQ was negatively associated with blatant prejudice across Germany, the UK, and Ukraine, suggesting that knowledge of cultural norms and values may help individuals hold less overtly prejudiced views. In societies with significant immigrant populations or a history of diverse cultural exchange, cognitive CQ could directly counteract blatant prejudice by providing a foundation of understanding and reducing stereotypical views.

Behavioral CQ's inverse association with blatant prejudice in the Czech Republic suggests that flexible and adaptive intercultural behaviors may help reduce overt prejudiced expressions. In environments where overt prejudice is less socially acceptable, such as the Czech Republic, individuals with strong behavioral CQ may be more adept at navigating social situations in ways that avoid openly prejudiced behavior.

The negative association between motivational CQ and both blatant and subtle prejudice in the Czech Republic and Germany indicates that individuals who are intrinsically motivated to interact with other cultures are less likely to hold prejudiced views. This effect may be more pronounced in these contexts because they either have supportive multicultural policies (Germany) or are increasingly influenced by the EU's inclusivity agenda (Czech Republic).

The absence of a relationship between both the Multicultural Personality Questionnaire (MPQ) and Cultural Intelligence (CQ) with prejudice in Hungary likely reflects the country's unique socio-political and cultural context, which may influence the expression and impact of intercultural competencies. Hungary has seen a prominent rise in nationalistic and anti-immigration rhetoric, driven in part by government policies and media narratives that often emphasize protecting Hungarian cultural identity against

perceived external threats (Melegh et al., 2021). Such a socio-political climate may lead individuals to hold stable attitudes toward cultural diversity and immigration that are less influenced by their personal intercultural competencies (Paskuj and Orosz, 2022). Compared to many Western European countries, Hungary has a relatively homogeneous population with fewer immigrants and refugees (Melegh et al., 2021). The limited cultural diversity within everyday Hungarian society might mean that individuals have fewer opportunities to interact with different cultures, reducing the situational relevance of intercultural competencies like CQ and MPQ. Moreover, Hungary's cultural emphasis on in-group identity, fostered by historical and political factors, may lead individuals to prioritize loyalty to Hungarian cultural values over openness to external influences. This strong in-group identity could dampen the effects of CQ and MPQ, particularly dimensions like open-mindedness and empathy, as attitudes toward out-groups may be deeply rooted in a sense of national identity rather than in individual personality traits. In such cases, high CQ or MPQ might not translate into reduced prejudice, as attitudes are anchored more in collective identity than personal intercultural competence. Accordingly, the constructs measured by MPQ and CQ may not resonate in the same way within the Hungarian context as they do in other European countries.

The results show that the meaning of intercultural competence and prejudice toward refugees is not the same for all participants. In some cases, these ideas may not be connected at all. While our data do not clearly show where these differences come from, they suggest that people's views on culture, identity, and social position can shape how they understand and express intercultural competence. This supports critical scholarship arguing that intercultural competence, as traditionally conceptualized, may be an inadequate or insufficient framework for facilitating equitable intercultural engagement—particularly in pluralistic spaces such as higher education, migration contexts, or global workplaces.

Indeed, many foundational models of intercultural competence emerged within applied settings that prioritized functionalist goals—such as conflict avoidance, assimilation, or productivity—often in a corporate context. As such, these models were not designed to address the more complex, situated, and power-laden aspects of cultural interaction. Although the MPQ and CQS frameworks recognize that culture shapes cognition, perception, and behavior (van der Zee and van Oudenhoven, 2000; van Dyne et al., 2009), they still tend to frame competence as a decontextualized set of traits or capacities located within the individual. This framing risks obscuring the systemic and institutional dynamics that mediate intercultural interactions—such as racialization, coloniality, language hierarchies, or unequal access to mobility.

Our results also add to the broader debate about how to model intercultural competence. Scholars have noted that static models miss key factors like context, power, and identity (Martin, 2015; Ramstrand et al., 2024; Zotzmann, 2014). Developmental models try to improve this by showing how people grow over time (Deardorff and Arasaratnam-Smith, 2022). But even in these models, the meaning of competence can shift across stages—and across settings—making consistent measurement difficult. We agree that competence is dynamic. But we also recognize that any

model, even one tailored to a specific context, still involves some generalization. Context-specific models may better reflect lived realities, but they can also risk essentializing “a context” if not handled with care.

Rather than choosing between fixed global models and static national ones, we argue for more adaptable measurement tools. These should include core elements that apply across settings—like openness or empathy—as well as flexible parts that can capture what’s unique in a given cultural or social environment. This allows for both comparison and cultural sensitivity. It also helps avoid treating culture as a stable or national trait. We do not see this as a complete solution, but as a step toward more honest and reflective models that recognize both the shared and the situated aspects of intercultural competence.

In our study, we tried to follow this approach by examining how the MPQ and CQS perform across six countries with different migration histories and social climates. We looked at whether the tools showed similar structures and whether they were linked to prejudice in the same way. The results showed both overlap and divergence. For example, motivational CQ was linked to lower prejudice in some contexts, while other traits varied widely in meaning and effect. This suggests that while some aspects of intercultural competence may be broadly relevant, others need to be understood in local terms. Our findings support the need for flexible, layered models that take both shared patterns and contextual differences seriously—without assuming that any model can fully capture the complexity of intercultural life.

## 5.1 Limitations

While this study provides valuable insights into the relationships between intercultural competence and prejudice across multiple European cultural contexts, several limitations should be acknowledged. The study employed a convenience sampling method, which may limit the generalizability of findings. Convenience sampling, though practical for exploratory research across multiple countries, can lead to sample biases as participants were not randomly selected. The generalizability of the results in this study is limited by the fact that Serbian university students do not necessarily represent the broader young population of the country (Harring, 2022; World Population Review, 2022). In Serbia, tertiary education enrollment is relatively low compared to the other included samples. This means that students in the sample likely come from more privileged backgrounds, such as urban areas or families with higher socio-economic status. As a result, their attitudes, experiences, and levels of intercultural competence may differ from their peers who do not pursue higher education. These differences make it difficult to extend the study’s findings to the wider youth population in Serbia, as the sample reflects a select and possibly more globally oriented subgroup. Moreover, the level of internationalization in education systems can lead to skewed results when measuring intercultural competence. Education systems that are highly internationalized—offering exchange programs, foreign-language instruction, or diverse student bodies—can lead to higher average competence scores.

Since we didn’t control for the variety of contextual factors, our results are limited regarding the average scores on the MPQ and CQS scales, though not for the relationships with prejudices.

This study utilized self-report measures, which are susceptible to response biases. Given the sensitive nature of prejudice, social desirability bias may have affected participants’ responses, with individuals potentially downplaying negative attitudes. Although anonymity was emphasized, some participants may still have been reluctant to report prejudice accurately or low answers for intercultural competence. Given the goal to assess a competence, as a potential for action, multiple sources advocate for utilizing multiple methods (Kealey, 2015; Schnabel et al., 2015), even though this has not yet been implemented in a measurement tool successfully.

Despite efforts to ensure the cultural relevance and comparability of the measurement instruments, limitations in measurement equivalence across cultures are evident. The observed differences in mean scores for both the MPQ and CQS across cultural groups suggest potential challenges with construct validity, as some groups may interpret or respond to items differently. Without strong evidence of metric and scalar invariance, the interpretation of mean differences across groups remains uncertain. Additionally, the translation and adaptation process, although rigorous, may not have fully captured subtle cultural nuances in each item’s meaning across languages and contexts. While a back-translation method was employed, translating complex constructs like intercultural competence and prejudice can be challenging, especially when applied to culturally distinct populations. Another limitation concerns the cross-sectional design of this study, which does not allow for causal inferences. The observed relationships between intercultural competence and prejudice are correlational, meaning it is unclear whether increased intercultural competence leads to reduced prejudice or if individuals with lower prejudice naturally develop greater intercultural competence.

While we have reflected on the historical and socio-political background of Eastern European countries in interpreting our results, it is equally important to consider the current discursive and political climate in Western countries, such as Germany. Recent political developments—including the growing influence of populist right-wing parties and public debates over asylum policy—have intensified polarization around refugee issues (Beller, 2023; Genkova and Grimmelsmann, 2022). These dynamics may shape not only public attitudes, but also the social acceptability of expressing prejudice, potentially influencing how participants respond in surveys. In this context, lower average prejudice scores in the German sample should not be interpreted uncritically; they may reflect, for instance, greater exposure to diversity and intercultural training within higher education, but could also be shaped by normative pressures or discursive framing unique to the German socio-political context. These factors underscore the need for context-sensitive interpretation and caution against overgeneralizing country-level differences without considering the underlying social narratives that shape them.

In this study, “refugees” were used as a socially salient outgroup to assess prejudicial attitudes, rather than as a demographically or culturally homogeneous category. We acknowledge that the refugee

population is highly heterogeneous, encompassing individuals from a wide range of ethnic, national, religious, and social backgrounds (Kosyakova and Kogan, 2022). However, the purpose of our operationalization was not to capture attitudes toward any one specific refugee group, but rather to analyze prejudice as a socially constructed attitude toward a symbolically loaded category, as it is often represented in media and political discourse. The use of “refugees” as a target group is thus consistent with earlier work that treats such categories as meaningful within public opinion and intercultural relations (e.g., Stephan and Stephan, 2000; Cowling et al., 2019). Nevertheless, we recognize that the salience and interpretation of the term “refugee” may vary across national contexts, and our findings should be understood within the framework of social attitudes toward generalized representations, not specific refugee communities.

While the study includes a diverse range of European samples, the focus on Eastern and Central European contexts may limit the study’s applicability to non-European cultural contexts. The unique socio-historical experiences of Eastern European countries, including the impact of post-communist transitions, shape their distinct perspectives on immigration and cultural diversity. Applying these findings to culturally different regions, such as Asia or Latin America, may yield different results. Expanding future research to include non-European cultures would enable a broader understanding of how intercultural competence relates to prejudice globally.

While this study uses national affiliation as a grouping variable for cross-cultural comparison, we do not treat nationality as synonymous with a singular or homogeneous culture. Rather, national context serves here as a proxy for shared structural, historical, and institutional conditions that may shape the expression of intercultural competence and attitudes toward refugees. Comparing national samples in a cross-cultural study risks reinforcing stereotypes and essentialist views by implying that cultural differences are solely determined by nationality, overlooking within-country diversity and the influence of globalization, socioeconomic factors, and individual experiences. Additionally, such comparisons may lead to ecological fallacies, where national-level findings are incorrectly applied to individuals, ignoring the complexity of cultural identity and the dynamic nature of intercultural interactions (Holliday and Macdonald, 2020). However, even with a modern understanding of culture that moves beyond the traditional notion of national cultures as fixed entities, comparing members of different nationalities remains a valuable and justifiable approach in research.

Nationality continues to shape individuals’ lived experiences through laws, policies, education systems, and institutional structures, making it a relevant—though not exhaustive—factor in understanding variations in social behavior and intercultural interactions (Fox and Miller-Idriss, 2008; Wimmer and Glick Schiller, 2002). Countries also offer useful structural comparisons that allow researchers to examine contextual influences, such as labor market conditions, educational norms, and migration policies, while acknowledging that culture is not homogeneous within national borders (Brubaker, 2004). National affiliation may also influence individuals’ self-perception, social categorization, and access to international mobility (Andreouli and Dashtipour,

2014; Malkki, 2003), which can shape intercultural interactions in both personal and professional contexts. From a methodological perspective, nationality provides a practical and reproducible unit of comparison for large-scale studies (Taras et al., 2012), particularly when aligned with broader structural, historical, or policy-based variables.

At the same time, we fully acknowledge the limits of this approach. From interpretive and critical perspectives, nationality alone cannot predict individual behavior in intercultural contexts, where meaning is co-constructed and highly sensitive to local, situational, and interpersonal dynamics (Dervin, 2011; Holliday, 2011). Modern workplace norms, for example, are often shaped through negotiation, profession-specific practices, and team dynamics rather than national affiliation. Our aim is not to essentialize cultural identity through national categories but to use them as one layer of analysis—while remaining critically aware of their limitations and complementing them with contextual interpretations wherever possible.

It is also important to emphasize that intercultural competence development does not imply the need to change an individual’s personality. From an ethical standpoint, framing competence in ways that suggest certain personalities are inherently more “adequate” than others risks marginalizing individuals based on stable traits. Intercultural competence should not be viewed as a demand to conform to a specific psychological profile, but rather as a set of reflective, behavioral, and motivational strategies that individuals can draw on in diverse cultural contexts.

The MPQ includes personality dimensions (such as open-mindedness or emotional stability) that may support effective intercultural interaction, but these traits are not in themselves the goal of competence training. Instead, educational or professional development efforts should focus on enhancing intercultural awareness, building perspective-taking skills, and encouraging critical self-reflection—areas that can be developed without altering core personality traits.

In sum, while this study contributes to understanding the role of intercultural competence in shaping prejudice across diverse European contexts, these limitations should be addressed in future research. Addressing these concerns could enhance the reliability, validity, and applicability of findings, further strengthening the evidence on intercultural competence as a potential pathway for reducing prejudice.

## 5.2 Conclusion

This study examined the relationship between intercultural competence and prejudice toward refugees across student populations in Germany, the UK, Hungary, the Czech Republic, Ukraine, and Serbia, using the Multicultural Personality Questionnaire (MPQ) and the Cultural Intelligence Scale (CQS). The urgent context of current refugee crises, particularly the influx of Ukrainian refugees, underscores the importance of understanding whether intercultural competence can foster social cohesion and reduce intergroup tensions. Both instruments demonstrated structural comparability across national



contexts, but the strength of their associations with prejudice varied significantly by country. Intercultural competence was more strongly linked to lower prejudice in some countries (e.g., Germany, Czech Republic), but this relationship was weaker or absent in others (e.g., Hungary, Serbia). Migration background moderated these associations in some cases, though the effect differed by type of prejudice and by sub-dimension of the scales.

These findings are significant in two ways. First, they challenge the widespread but often implicit assumption that intercultural competence, as measured by tools like the MPQ and CQS, is universally predictive of lower prejudice. While the developers of these scales acknowledge the influence of culture, in practice the instruments are frequently treated as if they measure stable, transferable traits that function similarly across national contexts. This assumption of functional equivalence underpins much of their use in applied research and policy, especially in domains such as international education, human resource management, and diversity training. The current findings suggest that such interpretations may overlook critical contextual factors that shape both how intercultural competence is expressed and how it relates to social attitudes like prejudice.

Second, from a psychometric perspective, the observed cross-country differences raise important concerns about the criterion validity of these instruments. If a scale predicts a given outcome—such as prejudice—well in one context but poorly in another, the issue may lie not only in measurement error, but also in how the constructs interact with local social norms, power structures, and histories of intergroup relations. For example, in societies where intercultural competence is institutionally valued and socially rewarded, individuals with high intercultural competence may genuinely internalize more inclusive attitudes. In contrast, in contexts where cultural diversity is contested or politically sensitive, high scores may reflect adaptive self-presentation or cognitive flexibility without a corresponding reduction in bias. These findings do not imply that each national group holds a fully distinct or incompatible understanding of intercultural competence. Rather, they illustrate that the meaning and salience of competence-related traits—such as adaptability, empathy, or motivation—are shaped by context-specific histories and institutional conditions. While certain dimensions may have broad relevance, their measurement and interpretation require adaptation to local meaning systems. Our challenges the assumption of full construct equivalence and calls for more reflexive, layered models of intercultural competence that attend to both general patterns and situated variation. These findings therefore call for greater attention to measurement invariance, socio-political context, and cultural meaning when applying and interpreting these tools.

Taken together, these findings do not imply that the MPQ and CQS are invalid or useless. Rather, they point to the need for more context-sensitive applications and interpretations of intercultural competence measures. Researchers and practitioners should avoid assuming that high intercultural competence scores always translate into low prejudice or that a single model of competence is sufficient for guiding interventions across

diverse settings. Instead, future work should focus on identifying contextual moderators, developing local norms, and integrating qualitative or mixed-method approaches to better understand the lived meanings of intercultural competence. For example, in Eastern Europe, where demographic and social shifts due to migration are more recent, our findings suggest that intercultural competence training programs might benefit from focusing on cultural empathy and knowledge, which have shown stronger associations with prejudice reduction in these regions. Importantly, researchers should also explore whether existing scales can be refined to distinguish between culture-general traits and culture-specific competencies, thereby improving their cross-cultural applicability.

## Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## Ethics statement

Ethical approval was not required for the studies involving humans because study was conducted as part of (however not funded by) a public research project, which equals ethical approval. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

## Author contributions

PG: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – review & editing. HS: Writing – original draft, Writing – review & editing, Resources. PB: Data curation, Formal analysis, Visualization, Writing – review & editing. KL: Data curation, Resources, Writing – review & editing. LS: Data curation, Resources, Writing – review & editing. MR: Data curation, Resources, Writing – review & editing. JP: Data curation, Resources, Writing – review & editing. KV: Data curation, Resources, Writing – review & editing. CS: Data curation, Resources, Writing – review & editing. AV: Data curation, Resources, Writing – review & editing. JB: Data curation, Resources, Writing – review & editing.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships

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