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ARTIGO

## Escala de preconceito contra nordestinos: desenvolvimento e evidências de validade e confiabilidade

*Prejudice against Northeastern Brazilians scale: development and evidence of validity and reliability*

*Escala de prejuízo contra los brasileños del nordeste: desarrollo y evidencias de validez y confiabilidad*

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**Resumo:** Este estudo apresenta o desenvolvimento da Escala de Preconceito contra Nordestinos (EPN), uma ferramenta construída para mensurar estereótipos regionais específicos no Brasil, reunindo evidências de validade e confiabilidade. A EPN foi analisada por meio de dois estudos, que sustentaram uma estrutura de três fatores - Incompetência, Inferioridade e Sociabilidade - alinhada ao Modelo de Conteúdo de Estereótipos, ao mesmo tempo em que reflete nuances culturais regionais. O Estudo 1 (N = 308) forneceu evidências de validade fatorial e consistência interna, enquanto o Estudo 2 (N = 258) examinou a capacidade preditiva da escala ao medir intenções de contratação em um contexto que envolve a percepção de origem regional. Os resultados destacam a utilidade da EPN para avaliar preconceitos regionais, especialmente ao revelar estereótipos complexos e ambivalentes frequentemente associados aos nordestinos.

**Palavras-chave:** preconceito; nordestinos; construção de teste; validade do teste.

**Abstract:** This study presents the development of the Prejudice Against Northeastern Brazilians Scale (PANBS), a tool designed to capture specific regional stereotypes within Brazil, gathering evidence of validity and reliability. The PANBS was assessed through two studies, which demonstrated a reliable three-factor structure—Incompetence, Inferiority, and Sociability—aligned with the Stereotype Content Model (SCM) yet also reflecting regional cultural nuances. Study 1 (N = 308) provided factorial and internal consistency evidence, while Study 2 (N = 258) examined the scale's predictive capacity by measuring hiring intentions in a context involving perceived regional origin. The findings underscore the PANBS's utility in assessing regional prejudices, particularly as it reveals complex and ambivalent stereotypes often associated with northeastern Brazilians.

**Keywords:** prejudice; Northeastern Brazilians; test construction; test validity.

**Resumen:** Este estudio presenta el desarrollo de la Escala de Prejuicio contra los Brasileños del Nordeste (EPBN), una herramienta diseñada para capturar estereotipos regionales específicos dentro de Brasil, reuniendo evidencia de validez y precisión. La EPBN fue analizada en dos estudios, que respaldaron una estructura de tres factores - Incompetencia, Inferioridad y Sociabilidad - alineada con el Modelo de Contenido de los Estereotipos, pero también reflejando matices culturales regionales. El Estudio 1 (N = 308) proporcionó evidencia de validez fatorial y consistencia interna, mientras que el Estudio 2 (N = 258) examinó la capacidad predictiva de la escala al medir intenciones de contratación en un contexto de percepción de origen regional. Los hallazgos subrayan la utilidad de la EPN para evaluar prejuicios regionales, particularmente al revelar estereotipos complejos y ambivalentes comúnmente asociados con grupos marginados.

**Palabras clave:** prejuicio; brasileños del nordeste; construcción de pruebas; validez de la prueba.

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## Introduction

During Brazil's 2022 presidential elections, the Northeast region - composed of nine states and historically marked by socioeconomic disparities compared to the wealthier South and Southeast - played a pivotal role in securing a substantial vote share for the left-leaning candidate, ultimately contributing to his victory. This led to a spike in discrimination against northeastern Brazilians (Brazilians from the Northeast region, which is composed of multiple states and whose residents are commonly referred to as *nordestinos* in Portuguese), particularly on social media, where derogatory remarks depicted the region as "backward" and its residents as "burdens" to the country (Freitas, 2022). This was not an isolated incident, as similar expressions of discrimination against northeastern Brazilians were observed in previous elections, particularly those marked by strong political polarization, such as the 2014 and 2018 elections (Serrão, 2022). These events underscore the social relevance and enduring nature of this form of discrimination.

Regional disparities have historically shaped social relations and contributed to the formation of negative stereotypes and prejudices toward northeastern Brazilians. This prejudice is rooted in historical, economic, and social dynamics, including patterns of colonization and migration, which have fueled negative representations of northeasterners as economically dependent and less educated than residents of other regions (Rego, 2018; Xavier, 2020). Previous research has examined these dynamics, identifying common stereotypes that portray Northeasterners as lacking competence or intellectual ability while incorporating benevolent stereotypes that characterize them as resilient and sociable (Batista et al., 2014; Arruda et al., 2008).

However, existing research on prejudice toward northeastern Brazilians has lacked a dedicated measurement scale. Instead, studies on this topic identified in the literature have relied on the adaptation of measures originally developed to assess other forms of prejudice, such as racial stereotypes (Batista et al., 2014) and the

modern racism scale (Gouveia et al., 2021), or on the transcultural adaptation or development of stereotype measures without providing evidence of validity and reliability (Almeida, 2014; Lordelo & Barros, 2005). This lack of methodological rigor limits the ability to fully grasp the multifaceted nature of prejudice against northeastern Brazilians. To address this gap, we propose the Prejudice Against Northeastern Brazilians Scale (PANBS), designed to measure the distinctive manifestations of prejudice toward Northeasterners within the Brazilian context.

## Prejudice Towards Northeastern Brazilians

Northeastern Brazilians have long faced prejudice and discrimination rooted in historical, economic, and social dynamics, positioning them as a minority group subject to prejudice from other regions, particularly the South and Southeast (Acunha, 2012; Xavier, 2020). The colonial exploitation of the Northeast, marked by the enslavement of Indigenous and Black populations, established patterns of inequality and regional exclusion that persist to this day (Klein & Luna, 2010). As a result, the region today has a predominantly Black and mixed-race population. This demographic characteristic intersects with racial hierarchies and racism in Brazil, reinforcing perceptions of the Northeast as less modern and less developed, a contrast often drawn in relation to the South and Southeast (Lima & Vala, 2004; Rego, 2018), where European immigration was more prominent due to state-led whitening policies aimed at "whitening" the population and diminishing the presence of non-European racial groups (Hofbauer, 2006). These racialized and regionalized perceptions have contributed to the stereotype of Northeasterners as "inferior" and "backward," sustaining their marginalized status in Brazilian society (Batista et al., 2014).

Additionally, migration from the Northeast to the industrialized Southeast in search of better opportunities has played a critical role in shaping and intensifying prejudice against Northeasterners. Since the mid-20th century, large waves of

migrants left the Northeast, driven by economic hardship, prolonged droughts, and the region's historical exclusion from Brazil's industrial development policies (Vale et al., 2007). This migration intensified between the 1950s and 1970s, when Northeastern workers, seeking employment in urban centers like São Paulo and Rio de Janeiro, were often relegated to precarious, low-wage labor and informal jobs, reinforcing a perception of them as an economic burden rather than contributors to national development (Moura, 1999). These conditions fueled stereotypes that portrayed the Northeast as backward and stagnant, leading to systematic discrimination against Northeastern migrants, who often faced prejudice related to their origin, accent, and cultural identity (Rego, 2018; Xavier, 2020).

This prejudice has permeated various forms of media and cultural narratives, with depictions of the Northeast in literature, cinema, and social media often focusing on poverty, drought, and a lack of economic development (Dáu, 2009; Pelinson et al., 2014; Silva, 2016). Such portrayals have contributed to a collective stereotype of Northeasterners as uneducated and dependent on government assistance, further entrenching their marginalization in Brazilian society (Alves, 2018; Silva, 2016). These historical and structural dynamics have led to a persistent perception of the Northeast as an "internal other" within Brazil, reinforcing regional inequalities and prejudices that persist to this day (Albuquerque Júnior, 2011).

Research supports this perspective, showing that northeastern Brazilians are frequently stereotyped as "poor," "lazy," or "unintelligent," in contrast to southern and southeastern Brazilians, who are perceived as "rich," "civilized," and "modern" (Arruda et al., 2008; Batista et al., 2014). Some studies have also identified the presence of ambivalent stereotypes, where Northeasterners are labeled as "resilient" or "hardworking", which, while seemingly positive, reinforce their distinction as a subordinate group (Batista et al., 2014). Also, research suggests that people from the South and Southeast regions perceive Northeasterners not only as subordinate but

also as a social threat (Gouveia et al., 2021). This dual perception fuels discrimination against this group, as they are simultaneously portrayed as dependent on government welfare while exerting significant influence over national elections due to the region's large population and electoral weight (Braga & Zolnerkevic, 2020). These tensions become particularly evident during election cycles, with social media hate speech against Northeasterners escalating in politically polarized moments. Following the presidential elections of 2014 and 2018, northeastern Brazilians were targeted with offensive remarks due to the region's voting patterns. Comments such as "the Northeast is a cancer" and calls to "drown Northeasterners" exemplify the deeply ingrained nature of this prejudice, which persists despite legal and social norms against hate speech (Freitas, 2022; Souza, 2020).

The Stereotype Content Model (SCM; Fiske et al., 2002) offers a theoretical framework for understanding how individuals perceive social groups based on two fundamental dimensions: warmth and competence. Warmth refers to perceived intent, whether a group is seen as friendly, trustworthy, and cooperative, while competence reflects perceived ability, whether a group is seen as capable, intelligent, and effective (Fiske, 2018). These dimensions are shaped by the perceived social structure: groups seen as cooperative and non-competitive are viewed as warm, while those perceived as having high status are seen as competent. In turn, these perceptions predict distinct emotional responses (e.g., pity, envy, contempt) and patterns of discrimination (Fiske, 2018; Cuddy et al., 2009). For example, groups perceived as high in warmth but low in competence often elicit paternalistic prejudice and are treated with passive help and active harm, while those seen as low on both dimensions tend to be targets of exclusion and dehumanization. The SCM thus provides a comprehensive framework for examining the content and consequences of stereotypes, including those directed at regional groups such as northeastern Brazilians.

Although the SCM has been widely applied

across cultures (Cuddy et al., 2009; Fiske, 2018), the content of stereotypes reflects the historical and cultural dynamics of intergroup relations (Durante et al., 2017; Janssens et al., 2015). For example, in collectivist societies, respondents tended not to identify clear high-competence/high-warmth reference groups and showed no consistent in-group favoritism yet still derogated out-groups on competence or warmth (Cuddy et al., 2009). Similarly, Durante et al. (2017) found consistent support for the SCM's dimensions across diverse cultural contexts but observed that ambivalent stereotypes—those attributing high competence but low warmth, or vice versa—were more prevalent in societies with greater income inequality and moderate levels of peace and conflict. These findings suggest that broader societal conditions, such as inequality and national cohesion, influence how stereotype content is distributed and expressed.

Beyond the dimensions of warmth and competence, regional stereotypes often reflect context-specific biases—such as accent and perceived cultural “backwardness”—that are particularly salient in the Brazilian context (Rego, 2018; Fiske, 2018). The SCM further acknowledges that stereotypes, especially those related to race and ethnicity, frequently exhibit ambivalence, combining positive and negative elements shaped by historical inequalities and socio-political dynamics (Durante et al., 2017; Fiske, 2018; Lima & Leite, 2021). This framework aligns with patterns of stereotyping observed toward northeastern Brazilians, who are commonly portrayed as warm and sociable, yet lacking in competence, education, and economic autonomy (Almeida, 2014; Arruda et al., 2008; Batista et al., 2014).

Both Almeida (2014) and Batista et al. (2014) found that positive attributes ascribed to Northeasterners predominantly reflect the warmth dimension, with frequent references to traits such as “cheerful” and “generous.” While Batista et al. (2014) identified occasional positive competence-related descriptors (e.g., “hardworking,” “resilient”), negative stereotypes centered overwhelmingly on intellectual and professional in-

dequacy (e.g., “lazy,” “clumsy,” “ignorant”). Almeida (2014) reported an even sharper asymmetry between warmth and competence, with positive traits strongly associated with sociability and “dumb” emerging as the most salient negative stereotype, reinforcing the perception of Northeasterners as intellectually inferior. Similarly, Arruda et al. (2008) highlighted the association of Northeastern identity with poverty, cultural backwardness, and physical devaluation, especially when contrasted with Southern Brazilians, who were more often linked to wealth, modernity, and competence. These findings are consistent with the SCM prediction that low-status groups, like Northeastern, tend to be stereotyped as warm but lacking in competence (Fiske et al., 2002), while also reflecting specific historical and socio-economic representations of group inferiority and prejudice in the Brazilian context (Lima & Leite, 2021).

Aligned with this framework, the Prejudice Against Northeastern Brazilians Scale (PANBS) incorporates both the warmth and competence dimensions of the SCM and regional-specific stereotypes that shape prejudice against northeastern Brazilians. These stereotypes often portray Northeasterners as lacking competence, economically dependent, and having limited education, while also emphasizing their distinct accent and cultural traits as markers of regional exclusion (Rego, 2018; Batista et al., 2014). The PANBS aims to capture these nuanced and culturally embedded forms of prejudice.

### Overview of the studies

The PANBS was developed through two studies. In Study 1, we developed the scale and gathered evidence of its factorial validity and reliability. Study 2 aimed to further evaluate the psychometric properties of the PANBS by replicating its factorial structure in a new sample and testing its predictive validity. Using experimental design, Study 2 assessed the PANBS's ability to predict discriminatory behavior in a hiring scenario.

## Study 1 – Development of the Prejudice Against Northeastern Brazilians Scale and Preliminary Psychometrics Evidence

Brazil is marked by regional disparities that have long shaped social relations and fostered stereotypes and prejudices against northeastern Brazilians due to economic and cultural differences across regions (Klein & Luna, 2010; Serrão, 2022). These dynamics underscore the need for a reliable instrument to measure prejudice specifically directed toward northeastern Brazilians, capturing both overt and subtle forms of bias reflecting this unique social context. In this sense, this study aimed to describe the Prejudice Against Northeastern Brazilians Scale (PANBS) development process and to gather preliminary evidence regarding its psychometric properties, specifically focusing on factorial validity and internal consistency.

### Method

**Participants.** Initially, a criterion of 15 participants per inventory item was set (Tabachnick & Fidell, 2007), resulting in a target sample size of 255 participants. Inclusion criteria required participants to be 18 years or older, residing in Brazil, and with internet access. A total of 331 individuals from the general population of Brazil participated in the study, with ages ranging from 18 to 66 years ( $M = 28.24$ ,  $SD = 9.97$ ). Of these, 23 participants were excluded due to failing an attention-check item, resulting in a final sample of 308 participants. The mean age of this sample was 28.2 years ( $SD = 9.88$ ), with the majority identifying as female (72.4%), heterosexual (75%), White (62.9%), middle-class (52.9%), and having incomplete higher education (40.3%).

**Scale development.** The Prejudice Against Northeastern Brazilians Scale (PANBS) was developed following established guidelines for scale construction (AERA, APA, NCME, 2014; Kalkbrenner, 2024), ensuring content validity and theoretical grounding. Initially, 17 items were created to represent distinct forms of prejudice against northeastern Brazilians, based on a

review of prior literature documenting regional stereotypes and discriminatory behaviors (see F. Batista, 2023; Batista et al., 2014; Oliveira, 2011; Serrão, 2022). The PANBS measures four dimensions identified in this literature: Accent (4 items), Poverty (4 items), Education/Work (5 items), and Sociability (4 items). Items were designed to reflect prejudiced beliefs specific to each dimension, aiming to enhance the comprehensiveness and representativeness of the construct.

An expert panel of eight external judges, each holding a Ph.D. in Psychology and with research experience in social psychology and instrument development, evaluated the scale. Judges were asked to assess the linguistic clarity of each item and to classify them according to the four proposed dimensions. Based on their feedback, grammatical and semantic adjustments were made to improve precision and readability. One item ("The Northeast is a region that suffers greatly from droughts and hunger") was removed due to concerns about construct alignment, and a new item ("Northeastern people have strong faith and remain resilient in the face of difficulties") was added to better reflect the **Sociability** dimension.

Following expert review, semantic validation was conducted with four undergraduate psychology students in their early semesters to ensure clarity and understanding of the items. Responses were recorded on a five-point Likert scale, ranging from 1 ("strongly disagree") to 5 ("strongly agree").

**Procedure.** Data was collected online via an electronic form created using SurveyMonkey. The survey link was distributed through social media platforms (Twitter and Instagram) and a messaging app (WhatsApp). Upon accessing the questionnaire, participants were presented with an informed consent form detailing the study's objectives, voluntary participation, and assurances of anonymity and confidentiality regarding personal information. Participants were directed to the pages containing the research instruments only after consent. The study was approved by an ethics committee and adhered to all ethical

guidelines outlined in Resolutions 466/12 and 510/16 of the Brazilian National Health Council.

**Data Analysis.** Data was analyzed using Factor software (version 12.04.04; Lorenzo-Seva & Ferrando, 2017). To assess the assumption of multivariate normality, Mardia's test (1970) was performed. Given the ordinal nature of the response scale and the non-normal distribution typically associated with Likert-type data, we employed exploratory factor analysis (EFA) using the diagonally weighted least squares (DWLS) estimator, which is appropriate for non-normally distributed ordinal data (DiStefano & Morgan, 2014; Kline, 2015). The factor structure was examined based on a polychoric correlation matrix, which better captures the relationships among ordinal variables compared to Pearson correlations. The number of factors to extract was determined through parallel analysis, also based on the polychoric correlation matrix, as this method has demonstrated superior accuracy in identifying the correct number of factors in such contexts (Timmerman & Lorenzo-Seva, 2011). A weighted Varimax rotation was applied to improve the interpretability of the factor solution while preserving the orthogonality of the factors. Finally, Cronbach's  $\alpha$  and McDonald's  $\omega$  coefficients were calculated to assess the internal consistency of each factor.

**Results.** Initially, Mardia's multivariate kurtosis coefficient indicated a lack of multivariate normality in the data ( $z = 97.29; p < .001$ ), confirming the appropriateness of the DWLS estimator. The fit indices for the polychoric correlation matrix were satisfactory, KMO = 0.73, Bartlett's test of sphericity = 3471.1 (df = 136;  $p < .001$ ), indicating that the data were suitable for factor analysis. Parallel analysis suggested the extraction of two factors. Factor 1 had an eigenvalue of 7.57, explaining 44.5% of the variance, and retained 13 items (items 1, 2, 3, 4, 6, 7, 8, 9, 10, 12, 13, 14, and 15), each with a factor loading above .30. The retained items corresponded to the theoretically proposed dimensions of accent, poverty, and education/work, though they merged items with distinct theoretical content. Factor 2 had an

eigenvalue of 2.42, accounting for 13.3% of the variance, and retained 3 items (5, 16, and 17) related to sociability. Item 11 was excluded as it did not reach a factor loading of .30 on either factor.

Given the mismatch between the initial factor structure and the theoretical model—particularly the uneven distribution of items across factors and the conceptual ambiguity of the first factor—a second exploratory factor analysis was conducted. The data were reanalyzed using the Robust Maximum Likelihood (RML) estimator based on a Pearson correlation matrix, a method appropriate when the assumption of multivariate normality is violated and sample sizes are relatively small (Li, 2016). Parallel analysis was again employed to determine the number of factors to retain, and a Weighted Varimax rotation was applied to facilitate interpretation while preserving orthogonality among factors. Indicators of factorability supported the appropriateness of the analysis: Kaiser-Meyer-Olkin (KMO) measure = 0.84 and Bartlett's test of sphericity was significant,  $\chi^2(136) = 1550.9, p < .001$ , indicating sufficient sampling adequacy and factorability of the correlation matrix. Two items that did not load above .30 on any factor were excluded, resulting in a final solution with 15 items distributed across three factors.

Factor 1 had an eigenvalue of 4.78, explaining 28.2% of the variance, and retained six items (1, 4, 6, 7, 13, 14), with factor loadings ranging from .512 (item 6) to .704 (item 7). This factor was labeled Inferiority, as it includes items reflecting stereotypes portraying northeastern Brazilians as linguistically inferior due to their accent and economically dependent on government aid. This factor captures dual prejudice, combining cultural inferiority with a perception of socioeconomic dependency.

Factor 2 had an eigenvalue of 2.26, explaining 13.3% of the variance, and retained six items (2, 3, 8, 9, 10, 12), with factor loadings ranging from .304 (item 2) to .935 (item 12). This factor was labeled Incompetence, as it groups items suggesting that northeastern Brazilians are perceived as less capable, lacking competence, intellectual ability, and sufficient effort. This factor indicates

a pervasive view that northeastern Brazilians cannot achieve success due to intrinsic deficits, portraying them as uneducated, unskilled, and unwilling to work hard.

Factor 3 had an eigenvalue of 1.30, explaining 7.6% of the variance, and retained three items (5, 16, 17), with factor loadings ranging from .716 (item 17) to 0.919 (item 16). This factor was labeled Sociability, as it encompasses items that emphasize

a positive perception of northeastern Brazilians as friendly and cheerful, highlighting their warmth and openness in social interactions. Additionally, it includes a stereotype of resilience, portraying northeastern Brazilians as spiritually strong and able to endure hardships with optimism. All three factors demonstrate satisfactory internal consistency, with both Cronbach's  $\alpha$  and McDonald's  $\omega$  coefficients equal to or exceeding .75.

**Table 1** - Factor Loadings for the PANBS

	Factor 1	Factor 2	Factor 3
Item 1	<b>.519</b>	.004	-.118
Item 2	.244	<b>.304</b>	.048
Item 3	.277	<b>.475</b>	-.092
Item 4	<b>.719</b>	-.098	.039
Item 5	-.015	-.027	<b>.734</b>
Item 6	<b>.512</b>	.035	.095
Item 7	<b>.704</b>	.029	-.096
Item 8	.073	<b>.564</b>	.048
Item 9	.038	<b>.626</b>	.041
Item 10	.136	<b>.344</b>	.016
Item 11	.260	-.040	.197
Item 12	-.111	<b>.935</b>	-.003
Item 13	<b>.527</b>	.166	-.093
Item 14	<b>.556</b>	-.084	.084
Item 15	.225	.039	.271
Item 16	-.127	.051	<b>.919</b>
Item 17	.012	-.006	<b>.716</b>
Cronbach's $\alpha$	.75	.75	.80
McDonald's $\omega$	.76	.78	.81

Note: Bolded loadings indicate the factor on which the item was retained.

**Partial Discussion.** Study 1 offers preliminary support for the factorial validity and reliability of the Prejudice Against northeastern Brazilians Scale (PANBS), revealing a three-factor structure consistent with stereotype content theory (Fiske et al., 2002). The identified factors—Inferiority, Incompetence, and Sociability—capture distinct contents: Inferiority reflects perceptions of linguistic and economic dependence, *Incompetence* aligns with stereotypes of intellectual deficiency and lack of motivation, and *Sociability* incorporates more positive yet paternalistic views that depict northeastern Brazilians as warm, friendly, and resilient (Batista et al., 2014; Arruda et al., 2008). While Study 1 provides initial

evidence for the PANBS's validity, it represents only a preliminary step in scale development. The factor structure needs further confirmation, and the scale's predictive validity remains untested. Therefore, Study 2 was conducted to replicate the factor structure in a new sample and evaluate the PANBS's predictive validity in an experimental context.

### Study 2. Confirmatory Factor Analysis and Predictive Validity of the Prejudice Against Northeastern Brazilians Scale

This study aimed to gather additional validity and internal consistency evidences for the

PANBS. Specifically, we aim to replicate the three-factor structure identified previously in a new sample and to test alternative structures (one-factor and two-factor models) to assess the robustness and specificity of PANBS's factorial composition. Furthermore, Study 2 employed an experimental design to examine the PANBS predictive validity in a hiring scenario. By integrating the PANBS with experimental manipulation of candidate region (Northeast vs. Southeast) and using hiring intention as the dependent variable, we aimed to assess the scale's ability to predict discriminatory behavior toward northeastern Brazilians in an employment context.

### Method

**Participants.** A total of 314 individuals from the general Brazilian population participated in the study. Of these, 40 participants were excluded for leaving more than half of the PANBS items blank, and 21 were excluded for failing an attention-check item that instructed participants to select option 4. The final sample consisted of 258 participants, with a mean age of 27.6 years ( $SD = 9.5$ ). The majority identified as female (71.5%), heterosexual (79.1%), White (60.9%), middle-class (54.2%), and with incomplete higher education (36.8%). Participants were randomly assigned to one of three conditions in a single-factor, between-subjects design based on perceived regional origin: Northeast, Southeast, or a control condition. A power analysis conducted using G\*Power indicated that a sample size of 231 participants would be required to detect a medium effect size ( $f = .25$ ) with 90% power.

**Instruments.** Prejudice Against Northeastern Brazilians Scale (PANBS). The version of the PANBS derived from Study 1 was applied, containing 15 items measuring three dimensions of prejudice against northeastern Brazilians: Incompetence (items 2, 3, 8, 9, 10, 11), Inferiority (items 1, 4, 6, 7, 12, 13), and Sociability (items 5, 14, 15). Responses were recorded on a five-point Likert scale, where 1 represents "strongly disagree" and 5 means "strongly agree." The final version of the instrument, containing 15 items, is presented in

Appendix 1.

Hiring intention. Participants responded to three items measuring the candidate's suitability for the position. These items included: "I would hire the candidate for this position," "The candidate is qualified for this position," and "The candidate is a good fit for this position." Responses were recorded on a six-point Likert scale, ranging from 1 (strongly disagree) to 6 (strongly agree). The scale obtained a Cronbach's alpha of .93.

**Procedure.** As in the previous study, data were collected online electronically. The survey link was distributed via social media platforms (Twitter and Instagram) and a messaging app (WhatsApp). Upon opening the questionnaire, participants accessed an informed consent form, which provided information about the study's objectives, the voluntary nature of participation, and assurances of anonymity and confidentiality. Participants were directed to the survey pages containing the study instruments only after consent. The study received approval from an ethics committee and adhered to all ethical guidelines specified in Resolutions 466/12 and 510/16 of the Brazilian National Health Council.

For the experimental manipulation, participants were instructed to read a job description, review a candidate's profile for the position, and then respond to three questions regarding the candidate's suitability for hiring (dependent variable). Participants were presented with a résumé or an audio description of the candidate. The accent in the audio description was used to manipulate the perceived regional origin of the candidate: northeast (a male native speaker residing in João Pessoa, Paraíba), southeast (a male native speaker residing in São Paulo, São Paulo), or a control condition, in which only the résumé was provided without an audio description. The résumé content was kept constant across conditions, and the audio descriptions were pre-tested to ensure they were of equal duration and audio quality. Afterward, participants completed a manipulation check to assess whether they had correctly interpreted the accent as Northeastern or Southeastern. Thirteen participants failed the

manipulation check and were not included in the predictive validity analysis.

**Data analysis.** To examine the PANBS factor structure, Confirmatory Factor Analysis (CFA) was conducted using the Lavaan package (Rosseel, 2012), conducted using R software (R Core Team, 2021) in RStudio (RStudio Team, 2020). The diagonally weighted least squares (DWLS) estimation method was adopted (DiStefano & Morgan, 2014; Kline, 2015). Model fit was evaluated using the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR). CFI and TLI values close to or above 0.95 and RMSEA and SRMR values below 0.06 and 0.08, respectively, indicate a good fit (Brown, 2015). Additionally, an RMSEA value that

does not significantly differ from 0.05 can serve as an additional indicator of a good fit. To analyze the predictive validity of the PANBS scale, the *General Analyses for the Linear Model* package (Galluci, 2019) in Jamovi was used to assess the main effect of the manipulation and the interaction effects between the manipulation and the three PANBS factors on the dependent variable (hiring intention).

### Results

Initially, three factorial structures were tested: the three-factor and two-factor structures identified in Study 1 and a unidimensional structure. The fit indices for each of these factorial solutions are presented in Table 2.

**Table 2 - Fit Indices for the Factor Solutions of PANBS**

	$\chi^2$ (df)	CFI	TLI	RMSEA [IC90%]	SRMR
1-factor	893.6(90)	.803	.770	.163 [.152, .175] $p < .001$	.243
2-factors	168.5 (89)	.970	.964	.064 [.051, .078] $p = .04$	.095
3-factors	136.2 (87)	.977	.972	.057 [.043, .071] $p = .19$	.081

The one-factor solution demonstrated the poorest fit indices, indicating it is unsuitable for representing the structure of the PANBS. Both the two-factor and three-factor solutions showed good fit indices, suggesting the adequacy of each model. However, the three-factor solution yielded superior fit indices compared to the two-factor model, with an RMSEA value not significantly exceeding .05 and a lower

SRMR value. Therefore, we conclude that the three-factor solution identified in Study 1 is also the most appropriate for the sample in Study 2. The standardized regression weights for all three factorial solutions are presented in Table 3, with all coefficients being statistically significant ( $p < .001$ ). Additionally, the three-factor solution showed satisfactory internal consistency, as indicated by Cronbach's  $\alpha$  and McDonald's  $\omega$  values.

**Table 3 - Standardized Regression Weights for the Three Factor Solutions of PANBS**

	3-factors			2-factors		1-factor
	F1	F2	F3	F1	F2	F1
Item 2	.704			.678		0.652
Item 3	.797			.770		0.756
Item 8	.903			.869		0.864

	3-factors			2-factors		1-factor
	F1	F2	F3	F1	F2	F1
Item 9	.859			.857		0.822
Item 10	.695			.664		0.679
Item 11	.910			.887		0.869
Item 1		.652		.638		0.524
Item 4		.741		.723		0.689
Item 6		.775		.749		0.702
Item 7		.770		.747		0.726
Item 12		.769		.745		0.677
Item 13		.734		.714		0.683
Item 5			.891		.887	0.717
Item 14			.859		.864	0.716
Item 15			.684		.683	0.500
Cronbach's $\alpha$	.69	.77	.79	.81	.79	.78
McDonald's $\omega$	.71	.78	.81	.84	.81	.82

Subsequently, in analyzing the effects of candidate regional origin manipulation and prejudice against northeastern Brazilians on hiring intentions, we observed a significant main effect of the manipulation,  $F(2, 228) = 8.86, p < .001$ . The candidate from the Northeast had a higher likelihood of being hired ( $M = 5.16, SE = 0.13$ ) compared to the candidate from the Southeast ( $M = 4.47, SE = 0.10$ ) and the control condition ( $M = 4.55, SE = 0.15$ ). This main effect was qualified by a significant interaction between the experimental condition and the Incompetence factor,  $F(2, 228) = 3.48, p < .001$ . Decomposition of this interaction revealed that hiring intentions for the Northeastern candidate varied significantly across levels of the Incompetence factor. Among participants with higher scores (+1 SD) on this factor, hiring intentions were lower ( $M = 4.77, SE = 0.24$ ) compared to participants with lower scores (-1 SD;  $M = 5.55, SE = 0.22$ ) and those with average scores ( $M = 5.16, SE = 0.13$ ). No significant interaction effects were found between the manipulation and the Inferiority factor,  $F(2, 228) = 0.72, p = .48$ , or the Sociability factor,  $F(2, 228) = 0.96, p = .38$ .

### Partial discussion

The findings of Study 2 further support the factorial structure of the PANBS, reinforcing the three-factor solution as the most suitable model and underscoring that the PANBS captures dis-

tinct dimensions of prejudice against northeastern Brazilians, as theorized and evidenced in the literature (Fiske et al., 2002; Batista et al., 2014). The experimental manipulation results provide additional insights into the PANBS's predictive validity. The observed interaction between the candidate's regional origin and the Incompetence factor suggests that prejudice impacts hiring intentions primarily through stereotypes related to perceived competence (Koch et al., 2015; Veit et al., 2022). The candidate from the Northeast was less likely to be hired when participants scored high on the Incompetence factor, indicating that views of Northeasterners as less capable significantly affect discriminatory outcomes. The lack of significant effects for Sociability and Inferiority factors may be related to the specific nature of the hiring context, in which competence-related stereotypes tend to be more salient and consequential (Reese et al., 2023). Although the Northeastern candidate received higher overall hiring intentions, this effect was not the main focus of the study and may reflect social desirability bias or normative pressure to avoid expressing prejudice and discrimination (Kruppal, 2013; Lima et al., 2020).

### General Discussion

This study aimed to develop the Prejudice Against Northeastern Brazilians Scale (PANBS)

and to gather evidence of its construct validity, predictive validity, and internal consistency across two distinct studies. The results revealed robust support for a three-factor structure - Incompetence, Inferiority, and Sociability - and evidenced the scale's factorial validity and reliability. Furthermore, the PANBS demonstrated predictive validity, as higher endorsement of stereotypes portraying Northeasterners as incompetent was associated with lower hiring intentions toward a Northeastern candidate.

Based on the Stereotype Content Model (SCM; Fiske et al., 2002), the PANBS captures the stereotypical dimensions of warmth and competence in both generalizable and context-specific ways. The Incompetence factor, which includes items suggesting that northeastern Brazilians lack ability or intellectual capacity, aligns directly with the SCM's Competence dimension (Fiske et al., 2002). In professional and academic contexts, such stereotypes contribute to discriminatory outcomes, as observed in Study 2, where lower perceived competence was associated with reduced hiring intentions (Koch et al., 2015; Veit et al., 2022). These findings highlight how competence-related stereotype, especially in domains linked to merit and performance, play a central role in legitimizing discriminatory behaviors.

The Sociability factor reflects the SCM's *warmth* dimension, capturing traits such as friendliness, emotional expressiveness, and resilience. However, this factor also illustrates the ambivalent nature of stereotypes frequently ascribed to marginalized groups (Durante et al., 2017; Fiske, 2018; Koch et al., 2015). In the Brazilian context, Northeasterners are often viewed positively for their sociability and ability to endure hardship (Arruda et al., 2008; Batista et al., 2014). While seemingly favorable, these "benevolent" stereotypes may reinforce paternalistic perceptions, portraying Northeasterners as resilient but lacking autonomy or capability (Rego, 2018). As such, warmth-based stereotypes can sustain social hierarchies by granting symbolic inclusion while implicitly denying full recognition of agency and competence autonomy (Kervyn et al., 2010;

Durante et al., 2017)

The Inferiority factor adds cultural inferiority markers to the stereotype content framework by incorporating perceptions of economic dependence, cultural inferiority and linguistic stigma. Unlike the Incompetence factor, which reflects more overt expressions of prejudice, the Inferiority factor captures more ambiguous and subtle markers of cultural and socioeconomic marginalization. These markers tend to frame Northeastern Brazilians as symbolically devalued, reinforcing their perceived lower status. These stereotypes, rooted in historical representations of the Northeast as "backward," underdeveloped, and reliant on government aid (Batista et al., 2014; Rego, 2018; Xavier, 2020), play an ambiguous role. They may contribute to paternalistic perceptions when the group is seen as remaining "in its place," dependent on the assistance and goodwill of dominant groups (Jackman, 1994; Reeves et al., 2022); yet they also function as justifications for social exclusion and hostility when the group is perceived as a threat to the status quo (Gouveia et al., 2021; Oliveira, 2011). As such, the Inferiority factor captures how regional prejudice in Brazil incorporates elements of linguistic, cultural, and economic perceptions of inferiority attributed to northeastern Brazilians (Xavier, 2020).

Despite the robust evidence of validity and reliability of the PANBS, this study presents some limitations. First, it relied on self-reported data and an online sample, which may not fully capture the range of prejudiced attitudes toward northeastern Brazilians across different regions of the country. Additionally, a significant proportion of participants were from the Northeast, which may have attenuated the observed effects—particularly in the experimental context of Study 2, in which approximately 40% of the sample consisted of individuals from that region. Future studies should consider samples with fewer Northeastern participants or include measures to control for the strength of regional identity, in order to more accurately assess the dynamics of regional prejudice across Brazil. Another important limitation concerns the po-

tential influence of social desirability bias and normative pressures that discourage the explicit expression of prejudice, factors known to affect self-reported measures of discriminatory attitudes (Krumpal, 2013). These influences may lead participants to underreport explicit prejudice, not only in the hiring task used in Study 2 but also in responses to the PANBS more broadly. Finally, although Study 2 provided evidence of the PANBS's predictive validity in a hiring context, future research should explore the applicability of the scale in other domains—such as healthcare or education—where regional prejudice may manifest differently and where dimensions such as Sociability or Inferiority may play a more prominent role. Future studies should also examine the measurement invariance of the PANBS across different subgroups—such as participants from different regions of the country—to ensure that the scale operates equivalently and allows for meaningful comparisons.

In conclusion, the PANBS offers a theoretically grounded and empirically supported scale for assessing prejudice against northeastern Brazilians. By integrating both broad stereotype dimensions, such as warmth and competence, and region-specific content related to accent, socioeconomic status, and perceived cultural inferiority, the scale captures key elements of how this form of regional prejudice is expressed. The PANBS contributes to advancing research on regional prejudice in Brazil by providing a tool specifically designed to examine the structure and content of prejudice toward Northeastern populations. It can also be applied in future studies, particularly those aiming to predict the antecedents and social consequences of discrimination against northeastern Brazilians.

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## Appendix

### Prejudice Against Northeastern Brazilians Scale

Utilizando a escala de resposta variando entre 1 (discordo muito) e 5 (concordo muito), indique em que medida você concorda ou discorda de cada uma das afirmações a seguir:

1. É difícil compreender o que os nordestinos falam por causa do sotaque.
2. Os nordestinos são pobres e miseráveis.
3. Os nordestinos são mal-educados e ignorantes.
4. Os nordestinos falam de uma forma engraçada devido ao seu sotaque.
5. Os nordestinos são alegres e simpáticos.
6. Os nordestinos se acostumaram a ser favo-

recidos financeiramente pelo governo.

7. É difícil levar um nordestino a sério por causa do sotaque.

8. Nordestinos não se esforçam o suficiente para serem bem-sucedidos.

9. Nordestinos têm a capacidade intelectual inferior às pessoas de outras regiões do Brasil, por isso só servem para trabalhos "braçais".

10. Nordestinos não são competentes.

11. Nordestinos são preguiçosos, por isso não gostam de trabalhar.

12. Os nordestinos falam muito errado.

13. Os nordestinos deveriam parar de receber auxílio do governo e ir atrás de trabalho para se sustentarem.

14. Nordestinos são calorosos e receptivos.

15. Nordestinos têm muita fé e não se deixam abalar com as dificuldades.

Incompetência: 2, 3, 8, 9, 10, 11

Inferioridade: 1, 4, 6, 7, 12, 13

Sociabilidade: 5, 14, 15