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To cite this article: Adekunle Adedeji, Saskia Hanft-Robert, Franka Metzner, Johanna Buchcik, Erhabor Idemudia & Klaus Boehnke (2025) The development and validation of the BeLiv Microaggression Scale (long BMS-27, short version BMS-9) – a metacontextual measure of perceived microaggressions, Cogent Psychology, 12:1, 2480415, DOI: [10.1080/23311908.2025.2480415](https://doi.org/10.1080/23311908.2025.2480415)

To link to this article: <https://doi.org/10.1080/23311908.2025.2480415>



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The development and validation of the BeLiv Microaggression Scale (long BMS-27, short version BMS-9) – a metacontextual measure of perceived microaggressions

Adekunle Adedeji^{a,b,c,d#}, Saskia Hanft-Robert^{d#} , Franka Metzner^{d#}, Johanna Buchcik^{a#} , Erhabor Idemudia^{c#} and Klaus Boehnke^{b#} 

^aDepartment of Social Work, Hamburg University of Applied Sciences, Hamburg, Germany; ^bBremen International Graduate School of Social Sciences (BIGSSS), Constructor University, Bremen, Germany; ^cFaculty of Humanities, North-West University, Mafikeng, South Africa; ^dDepartment of Medical Psychology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany

ABSTRACT

Microaggression has gained attention in the last decade. However, the available research is limited due to a lack of comprehensive measurement. The current article presents the development and validation of a metacontextual measure of microaggression. In Study 1 (Scale Development), a literature review, Focus Group Discussions (FGD) with 66 adults recruited across four South African provinces, expert input (n=3), cognitive interviews (n=5), and international harmonisation informed the creation of a 27-item questionnaire. Study 2 (Scale Validation) involved testing the validity and reliability of the scale with a cross-sectional survey of 604 African migrants in Germany. The 27-item metacontextual BeLiv Microaggression Scale (BMS-27) covers three microaggression categories (microinsults, microassaults, invalidation), with subscales examining frequencies (BMS-9), sensitivity, and perceived effects. Cross-correlation with quality of life confirmed each subscale's measure of microaggression as an adverse social phenomenon. The developed BMS-27 microaggression scale proves reliable for researchers and practitioners. It facilitates nuanced explorations of this pervasive social phenomenon across various contexts and enhances our understanding by providing a comprehensive tool for measuring microaggression prevalence and severity.

ARTICLE HISTORY

Received 30 May 2024
Revised 5 March 2025
Accepted 12 March 2025

KEYWORDS

Microaggression scale;
Questionnaire; validation;
discrimination; racism;
disadvantaged groups;
Black people, people of
colour

SUBJECTS

Social Psychology;
Psychological Science;
Sociology & Social Policy;
Cultural Studies

Background

The relevance of microaggression for health and general life outcomes has become more visible in social and psychological research over the last decade. Studies highlight that these everyday experiences characterised by aversive discrimination may have significantly more influence on cultural disjoint (Smith et al., 2016), well-being (Ong et al., 2013), and self-esteem (Wong-Padoongpatt et al., 2017) than traditional overt forms of racism and discrimination (Sue et al., 2007). The seemingly harmful effects of microaggressions on individuals' mental health and well-being have been extensively debated. Microaggressions have been linked to feelings of invalidation (Nair et al., 2019), psychological distress (Adedeji, Olonisakin, Metzner, et al., 2023; Wong-Padoongpatt et al., 2017) and increased

vulnerability to mental health disorders (Nadal et al., 2015). Moreover, their repetitive nature can reinforce existing biases, perpetuate stereotypes, and further marginalise already disadvantaged groups (Nadal et al., 2015).

Research has previously suggested a positive correlation between microaggression frequency and emotional distress, supporting the cumulative impact of these experiences on mental health (Huynh et al., 2012; Torres-Harding et al., 2012). For example, a recent study reported that a high frequency of gendered racial microaggressions predicted poorer mental health and self-esteem among a sample of Black women (Martins et al., 2020). The effects of microaggression can be further moderated by contextual factors such as gender and socioeconomic status (SES) (Williams & Mohammed, 2009). For instance, a study

CONTACT Adekunle Adedeji  adekunle.adedeji@haw-hamburg.de, mail@ade-adedeji.com  Hamburg University of Applied Sciences, Hamburg, Germany

[#]Better Living (BeLiv) – Research Initiative for Better Coexistence.

 Supplemental data for this article can be accessed online at <https://doi.org/10.1080/23311908.2025.2480415>.

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on African American young adults found that young men from lower SES backgrounds and young women from higher SES backgrounds were most vulnerable to the mental health risks associated with racial discrimination (Neblett et al., 2016). However, few studies so far have assessed the moderating impact of SES on the perception of microaggressions. Socio-cultural context also plays an important role in how microaggressions are perceived and their effects. Among Asian American college students, cultural mistrust—a sense of suspicion towards individuals from the mainstream culture due to experiences of discrimination—was a significant mediator between microaggressions and reduced well-being (Kim et al., 2017). Another study on the perception of workplace discrimination in the United States found that observer cultural views fully mediated the perception of workplace microaggressions, such that non-Hispanic Whites with higher levels of colour-blind worldviews demonstrated a lower likelihood of perceiving microaggressions (Offermann et al., 2014).

Despite valuable contributions to research, previous microaggression measures lack a comprehensive, unified framework applicable across different social and ethnic contexts (Hodson, 2021; Williams et al., 2021). Existing measures often focus on specific social contexts, failing to capture the full complexity and range of experiences (Singh et al., 2021). While a few researchers have attempted to quantify and organise microaggression (for example, The Racial Microaggressions Scale (RMAS) (Torres-Harding et al., 2012), the resulting measures have disregarded the psychosomatics and health consequences of microaggression and have focused mainly on racial and ethnic diversity, limiting their reliability in public health research.

The Racial and Ethnic Microaggression Scale (Nadal, 2011) – a 45-item self-report measure of race-based microaggressions, is similarly limited in its applicability. The focus on race and example-oriented items limits its generalisability and fails to cover the contextual meaning of microaggressions (Nadal, 2011). More recent scales, such as the Gendered Racial Microaggressions Scale for Black Women (GRMS) (Lewis & Neville, 2015) and the Gendered Racial Microaggressions Scale for Asian American Women (GRMSAAW) (Keum et al., 2018) are similarly focused on specific marginalised identities, limiting their applicability across different populations.

Furthermore, systemic and environmental microaggressions remain underrepresented in research, revealing deficiencies in existing measures to capture structural contexts (Williams et al., 2021). The lack of

meta-contextual measures that account for contextual factors, such as social structures and cultural norms, has created gaps in the holistic understanding of microaggressions guiding effective interventions and support systems. A metacontextual measure encompassing subtle, unintentional, or structural microaggressions can improve the accuracy and validity of research findings and promote a more nuanced understanding of microaggressions' impact on well-being. This would facilitate the identification of microaggressions in various contexts, such as educational institutions, workplaces, or healthcare settings (Nadal, 2011).

As the interconnectedness and interdependence among countries, people, cultures, classes, and regions increase, there is a corresponding increase in misunderstandings and clashes rooted in socioeconomic, demographic and cultural differences that may facilitate microaggressions (Grobner, 2019). Correspondingly, these changes in population dynamics created a global economy where wealth and resources are often unevenly distributed (Berger, 2017), which can drive perceptions of microaggressions through exploitation or condescension towards disadvantaged groups. Despite these changes, research on microaggression concerning these social and demographic changes is limited. Similarly, while health and well-being measures (e.g. Adedjei et al., 2023; WHO, 2014) have expanded to include the impact of social indicators, the effect of microaggressions remains largely unexamined (Hodson, 2021). These gaps are arguably due to the lack of a comprehensive quantitative measure of microaggression.

Thus, the purpose of the current research project is to develop a standardised metacontextual quantitative measure of microaggression relevant to pursuing a line of research that examines health outcomes, social interactions, expectations, and life outcomes, especially for minority groups (Gatwiri, 2021; Keith et al., 2017; Wong et al., 2014). The developed questionnaire for the quantitative recording of microaggression will be helpful in the scientific understanding of how cross-group dyadic compositions impact the process and effects of social, work and health interactions.

Study 1: scale development

The first study describes the development of items for the metacontextual measure of microaggression. This includes item generation from literature review and focus group discussions, card sorting, cognitive interviews, forward and backward translation, and international harmonisation.

Methods

Focus group discussions

Focus Group Discussions (FGDs) were conducted as part of an effort to develop items adaptable to measure microaggression in different contexts. Multiple existing studies were reviewed to identify the categories and manifestations of microaggressions that would be incorporated into the guidelines for conducting the FGDs. The Focus Group Discussions were utilised to confirm the relevancy, validity, and construct uniqueness of each of the categories by Sue et al. (2007) and manifestation categories by Mekawi and Todd (2018) in relation to the participant's experiences.

A total of fifteen FGDs were carried out across four South African provinces. The FGDs took place in the Gauteng (6 sessions), North-West (3 sessions), KwaZulu-Natal (3 sessions), and Western Cape (3 sessions) provinces, chosen based on their geographic locations (north, west, south, and east) and distinctive demographic characteristics, including population density and racial composition. The adaptable nature of FGDs allowed for a subjective assessment of microaggression and identifying critical factors relevant to scale development (Basnet, 2018; Lune & Berg, 2016). Written informed consent was obtained from all participants included in the study. Ethical clearance was obtained from the Basic and Social Sciences Research Ethics Committee (BaSSREC) at the North-West University in South Africa (Ethics Approval Number: NWU-00617-21-A7).

Sixty-six individuals from different socioeconomic classes, genders, ages, and racial identities participated in the FGDs. The participants were recruited through personal contacts, project websites, flyers, and social media (e.g. Facebook and WhatsApp). Through purposive sampling, heterogeneity was ensured about participants' age, gender, highest level of education, professional status, demographic and socioeconomic categories, etc. Two persons moderated the 15 FGDs. AA (male) moderated 13 FGDs, while the remaining two FGDs were moderated by TO (female). Both moderators were trained in social research. Each FGD had an average of 5 participants per discussion (Range 3 – 9), lasted an average of 1 hour and 45 minutes (Range 56 minutes – 2 hours 10 minutes), and was held between June and December 2021; further information on the study implementation can be found in Adedeji et al. (2023).

The measurement of microaggressions involved three distinct categories and three potential manifestations (Mekawi & Todd, 2018). Following Sue et al. (2007), these categories comprised microinsults, microassaults,

and invalidation, while the manifestations included verbal, behavioural, and structural expressions (Sue et al., 2007). Participants were initially provided with a conceptual definition of microaggression, followed by a presentation of each category individually. They were then prompted to share their perceptions and personal experiences related to the various categories (microinsults, microassaults, invalidations) and manifestations (verbal, behavioural, structural) of microaggression. Each was presented sequentially, such as 'verbal microinsults', 'behavioural microinsults', and 'structural microinsults'. Furthermore, participants were asked to rank the three categories of microaggression based on their perceived impact on well-being, for example, 'How would you prioritise microinsults, microassaults, and invalidation in terms of their effects on your well-being, from highest to lowest?', as well as the three different manifestations, for instance, 'How would you rank verbal, behavioural, and structural microaggression in terms of their effects on your well-being, from highest to lowest?'

Coding and item derivation

The coding and item derivation for the questionnaire involved several steps. First, the identified categories and manifestations of microaggressions were used to develop the initial items capturing microaggression experience. The recorded FGDs were transcribed using the intelligent verbatim technique. This approach is particularly relevant to understanding the essential meaning of a phenomenon of interest from the perspective of those directly involved in it (Giorgi, 1997). Data analysis was done stepwise using the thematic analysis technique (Krueger, 2014). The first coding was used to classify categories and the manifestations of microaggression and confirm if they differ based on demographic characters, socioeconomic status, or racial identity. Further qualitative analyses explored other factors significant for individual perceptions of microaggression.

Results

The thematic analysis confirmed that the classification of categories and manifestations represent distinct constructs with internal and relational validity, as each was recognised as a unique instance with specific and differentiated effects on well-being. Further, FGDs revealed factors that influence the perception of these different categories and manifestations of microaggression. These factors were identified as frequency, sensitivity and experienced effect, which were incorporated into the scale's item formation.

Categories of microaggression

Microinsults. The coding confirms the uniqueness of microinsults. Unlike overt acts of discrimination or aggression, microinsults were recognised as subtle forms of derogatory or demeaning communication that convey biased attitudes, stereotypes, or prejudices. Participants identified the unintentional or unconscious feature as a distinction for microinsults. For example, NWWHT01: ‘...regardless of the intention, I feel like there are so many common assumptions about White South Africans these days. For example, you are born a racist because you are born white. Generalising or making assumptions is emotionally damaging and creates social gaps’. Microinsult was understood as having the ability to subtly undermine an individual’s sense of self-worth, belonging, or competence through dismissive comments, backhanded compliments, or patronising gestures that subtly convey an underlying bias or stereotype.

Microassaults. Microassaults were understood as a distinct category of microaggressions that differ from microinsults in their more explicit and intentional nature. Microassaults were understood as overt acts that aim to discriminate or harm individuals based on their identity. For example, WCWHT02 ‘...this kind of statement creates insecurity. I feel under ... attack; I feel that I will be attacked. I feel like I will lose my house, possessions, and children just because of my race’. Microassaults were perceived as unique due to their directness and clear intention to offend or intimidate.

Invalidation. Invalidation was considered dismissal, negation, or disregarding an individual’s thoughts, feelings, experiences, or identity. This category of microaggression was perceived to have a unique effect on performance and other life outcomes. For example, GJCMR05: ‘This disregard (for) coloured happens very often in this country. So, it affects (my) ability to perform (my) job more effectively when I am not seen as important in this country.... also affects my income’. What sets invalidation apart is its impact on an individual’s sense of self and validity. Invalidating statements or behaviours were perceived as having the ability to undermine someone’s emotions, perspectives, or lived experiences, making them feel unseen, misunderstood, or devalued.

Manifestations of microaggression

Verbal microaggressions. Verbal manifestation of microaggressions involves language or verbal communication that carries subtle or indirect messages of bias, prejudice, or discrimination. The reliance on language for conveying bias makes it unique and more popular in various settings, such as everyday conversations, workplace interactions, educational

environments, or media portrayals. Verbal microaggression can perpetuate structural biases while often being portrayed as harmless or unintentional. They can be challenging to address or confront due to their subtlety, as the underlying bias may be disguised as a joke, a compliment, or a seemingly innocuous statement. NWBLK06: ‘This kind of verbal assault will not affect my physical health or socioeconomic status since I know that was the intention, but it will definitely affect my mental health and social relationships...’

Behavioural microaggressions. Behavioural microaggression was understood to be unique due to the non-verbal nature and the use of actions or behaviours to communicate bias. These behaviours can include subtle forms of exclusion, avoidance, disregard, or differential treatment based on a person’s race, ethnicity, gender, sexual orientation, or other aspects of their identity. This microaggression can manifest in avoiding eye contact, distancing oneself, interrupting or talking over someone, displaying dismissive body language, or making assumptions based on stereotypes. This manifestation of microaggression was distinguished by its ability to perpetuate bias and discrimination without explicitly using words. It was linked to creating an unwelcoming or hostile environment, making individuals feel marginalised, excluded, or invalidated. For example, GJCMR04: ‘... it is usually easier to observe such behaviours...such behaviour affects my ability to perform my job more effectively, which affects my income and other aspects of my life’.

Structural microaggressions. The structural manifestation of microaggression was perceived as unique due to its embedded nature within larger social, cultural, economic, or political systems. This manifestation reflected structural inequalities, biases, and power imbalances ingrained in society, including laws, policies, institutions, and social norms. Structural microaggression was also interpreted as unequal access to resources, discriminatory practices, institutional policies that reinforce bias, or societal expectations that perpetuate stereotypes and marginalise certain groups, which can result in disparities in opportunities, limited representation, or unequal treatment. For example, NWBLK02: ‘... and I just generally think black people are the majority in society. So, we also deserve to have an opinion and a voice. This type of structural exclusion is worse and affects Blacks a lot’.

Other factors

Frequency. The frequency of microaggressions can have significant implications for individuals and groups. When microaggressions occur frequently, they can contribute to a cumulative and persistent impact on the well-being and mental health of those

targeted. Experiencing frequent microaggressions can lead to heightened emotional and psychological distress. Constant exposure to subtle forms of bias and discrimination can erode self-esteem, create feelings of anger or frustration, and contribute to symptoms of anxiety and depression. NWCMR06: '.... when it happens once, I can forgo it two or three times... It makes me very angry'.

Sensitivity. The sensitivity to microaggressions was interpreted as an individual's heightened awareness and responsiveness to the subtle forms of bias, discrimination, and microaggressions in their environment. It was conceived as involving deliberately or unconsciously ignoring the impact of these subtle acts on self or one own group. GPBLK03: 'Coloured people are used to hearing things like that. It is mediocre and does not affect me that much'. WCBLK04: 'It is offensive when someone deliberately behaves in a way that excludes me. To be fair, it does happen a lot. We also do it as Xhosa people ... so I am maybe less sensitive...'

Effects. Generally, microaggression is understood to have negative consequences on different aspects of an individual's or group's life outcomes. These effects can be emotional, psychological, and even physical. They can vary depending on the frequency, intensity, and context of the microaggressions. GJCMR03: '.... Oh, yeah. So, it affected my ego and my mental health. It also affected my day-to-day living because when I lost my job ...I (had) to stay at home for like two months before I found another job'.

Items formation

Items covering the identified categories, manifestations and factors were generated in English as version 1 of the questionnaire (V1). Each item combines aspects, categories, manifestations, and factors and is adaptable to different contexts (e.g. 'How **sensitive** are you to statements, comments, or questions from other people that **unintentionally stigmatise**, exclude or hurt you because of your *<insert minoritised feature>* background?'). Next, a coding system was established to assign numerical codes or labels to the questionnaire responses. This coding system helped organise and analyse the questionnaire's data.

Items refinement

A careful process was followed to ensure the items accurately reflected the intended constructs. This involved reviewing the questionnaire items for clarity, relevance, and consistency with the conceptual framework of microaggression.

1. Three **expert interviews** with psychology and social sciences researchers were conducted. These interviews aimed to identify ambiguous items or those not aligned with the research objectives. Each item from the questionnaire was presented to the experts individually, and they provided feedback on item clarity and suggestions for improvement. Based on their input, modifications were made, resulting in the creation of version 2 of the questionnaire (V2).
2. Five **cognitive interviews** were conducted to evaluate the clarity and understandability of the measures from the perspective of potential participants. These interviews included individuals with an African migration background residing in Hamburg, Germany. Each participant rated the items on a 5-point scale for clarity, appropriateness, and usefulness. They were also encouraged to provide free comments and suggestions for improvement on each item. The results of these cognitive interviews, including the ratings and feedback, were used to refine the questionnaire further. The aggregate scores for clarity 20 (possible score range from 0–25), appropriateness 23 (possible score range from 0–25), and usefulness 24 (possible score range from 0–25) were recorded for each item, helping to assess their overall quality. This feedback was incorporated into Version 3 (V3) of the questionnaire.
3. The Version 3 questionnaire was translated into two additional languages: German and French. The **forward and backward translation** was done as part of the **international harmonisation** of the developed scale. Each item was translated from English to German and French and back to English; the translated items were then assessed for transfer of meaning, clarity, and appropriateness through an additional three expert interviews in the different languages. The feedback was integrated into the developed scale's version 4 (V4).

The iterative process of expert and cognitive interviews, translation, and feedback integration ensured that the final version of the questionnaire (V4) accurately reflected the intended constructs of microaggression while maintaining clarity, relevance, and consistency. Thus, it was ready for testing.

Scale formatting, layout, and sub-constructs

The questions were grouped based on the categories of microaggression to facilitate a clear scale

presentation: microinsult, microassault, and invalidation. Each group consists of a title, group definition, and three subgroups that address the factors of microaggression (frequency of experience, sensitivity, and effect of microaggression). Each subgroup contains one main question and three array sub-questions that pertain to the different manifestations of microaggressions (verbal, behavioural, and structural). The respondents are provided with five answer options to choose from. For further details and specific questions, please refer to [Supplemental Appendix 1](#).

The 27-item scale allows data collection on different subconstructs of the microaggression construct. These subconstructs are addressed using nine-question blocks in the form of an array. Here is an overview of the subconstructs and the corresponding questions:

1. **Frequency of microaggression experience - 9 items:** This section includes nine questions measuring how frequently people have faced various microaggressions in their daily lives. Respondents will use a 5-point scale to rate the frequency of their experiences with each question, with options ranging from 0 to 4. This approach enables us to gauge the overall occurrence of microaggressions across different categories and manifestations.
2. **Sensitivity to the experience of microaggression - 9 items:** In this section, individuals will evaluate their sensitivity towards various categories paired with manifestations of microaggressions and how they respond to microaggressions they encounter in their daily lives. They will rate their sensitivity on a 5-point scale for each item, with options representing different sensitivity levels. The scale ranges from 0 to 4.
3. **Effect of microaggression on well-being - 9 items:** This section analyses how microaggressions affect a person's overall well-being, considering the various categories of microaggressions and their manifestations. The scale used for responses spans from 0 to 4, each option corresponding to a different level of impact that microaggressions have on one's well-being.

In the same light, these subconstructs can be generated for each of the categories of microaggression. The subconstructs from the categories consist of 3 items each. For example, the frequency of microinsults is computed from three items covering microinsults' three manifestations (verbal, behavioural and structural). This approach allows for subconstruct

adaptation and development of shorter scales capturing aspects of microaggression derivable from the 27-items.

Discussion

Previous attempts to summarise microaggression have often projected uncertainty about its implications. Although qualitative insights have provided valuable insights (Moragne-Patterson & Barnett, 2017; Nair et al., 2019; Williams et al., 2020) the need for a quantitative measure has become increasingly evident. Study 1 set out to develop items for a meta-contextual measure relevant to pursuing research that examines health outcomes, social interactions, expectations, and life outcomes. Through a rigorous process involving focus group discussions, experts and cognitive interviews, and international harmonisation, a 27-item measure cutting across the different categories, manifestations, and factors of microaggression was developed.

The BMS-27 allows for the derivation of three primary subscales with nine items each that could be used independently, amplifying its usefulness for scientific understanding of how cross-group dyadic compositions impact the process and outcome of social, work and health interactions. Like other scales capturing social determinants of health and positive life outcomes, its subscales enhance its predictive validity (Taft et al., 2001; Tosi et al., 1973).

The metacontextual feature of the BMS-27 scale further facilitates adaptation in diverse contexts beyond just ethnic minority groups. It accounts for contextual factors through subscales measuring exposure frequency, individual sensitivity, and psychological impact. This flexibility in application increases the scale's usefulness in examining the impact of microaggressions across various populations and settings, contributing to a more comprehensive understanding of microaggression. In summary, the multidimensional and metacontextual feature of the BMS-27 scale means that it can be employed to study microaggressions among culturally diverse groups and different sociodemographic or economic groups, expanding its applicability and relevance in research.

Study 2: scale validation

The first study produced a finalised questionnaire with coded responses. The coding and item derivation process ensured that the questionnaire captured the relevant dimensions of microaggression experiences and

provided reliable and valid data for further analysis. Study 2 describes the testing validation of the developed BMS-27 microaggression scale.

Method

Study design, population, and data collection

The validating study uses quantitative data from 604 African migrants residing in Germany. The cross-sectional data was collected across the 16 German federal states. Participants in the survey include African migrants with formal residence status in Germany (i.e. they either hold German citizenship or citizenship of any other European Union (EU) state, have permanent or temporary residence status, or have refugee/asylum seeker status in Germany), and are 18 years or older. The target sample size was established from the Monte Carlo simulated power analysis for latent variable models (Wolf et al., 2013). To obtain high power (.80–.95) for small effects of .25, a sample size of 390–460 is desirable. These numbers are based on Wolf et al.'s suggestions for Confirmatory Factor Analysis (CFAs).

The survey questionnaire was accessible online using the LimeSurvey Platform. The questionnaires were administered in English, German, and French. Cases with missing data ($n=12$) were removed from the dataset. The participants in this study were recruited using 5-wave-approach sampling techniques. This approach involves direct contact with African community leaders, organising community outreach, chain referral through social media, systematic multiplication through African institutions and establishments and natural multiplication. This approach facilitates capturing a sample of African migrants that reflects population demographic characteristics (Adediji, 2019). An incentive of a 5 Euro Amazon Gift Card was offered to each participant after completing the survey. Written informed consent was obtained from all participants included in the study. Ethical clearance was obtained from the Basic and Social Sciences Research Ethics Committee (BaSSREC) at the North-West University in South Africa (Ethics Approval Number: NWU-00617-21-A7).

Measures

Microaggression: Participants perceived microaggression was measured using the developed microaggression scale (BMS-27). The 27-item scale covers the different categories of microaggression, manifestations and factors of microaggression. Each item was

rated using a 5-point scale that ranged from 0=low to 4=high. The scale allows for the computation of three main sub-constructs. Each subconstruct has nine items and an aggregate score between 0 and 36. An index score is computed as a raw score divided by 36 multiplied by 100. The index score was calculated for better comparativeness with the quality-of-life score.

The EUROHIS-QOL 8-Item Index (Schmidt et al., 2006) was employed to assess participants' quality of life. This self-assessment questionnaire was developed as a modification of the WHOQOL-100 and the WHOQOL-BREF instruments (The WHOQOL Group, 1998) and consists of items that gauge life satisfaction, contentment with one's health, capability to accomplish tasks, and satisfaction with oneself and personal relationships. Respondents used a Likert Scale, with options ranging from 1 to 5, and the total scores ranged from 8 to 40. The raw score was divided by 40 and then multiplied by 100 to compute the standardised score. Higher scores are indicative of a better quality of life. The questionnaire items exhibited acceptable reliability, with a Cronbach's α coefficient of 0.80.

Data analysis

Confirmatory Factor Analysis (CFA) was conducted using AMOS - Statistical Package for Social Sciences (SPSS) version 29 to understand the latent structure of the scale. To ensure good model fit, we used standard fit indices, including the Chi-square value/Degree of freedom (CMIN/DF), Comparative Fit Index (CFI), the Tucker-Lewis Fit Index (TLI), and Root Mean Square Error of Approximation (RMSEA). CMIN/DF value ≤ 3 indicates an acceptable fit (Kline, 1998). CFI or TLI of 0.95 or higher and SRMR of 0.08 or less indicate a good model fit (Hu & Bentler, 1999). The scale's reliability was estimated using Cronbach's α coefficient. The scale validity, on the other hand, was evaluated via Composite Reliability (CR), Average Variance Extracted (AVE), and Maximum Shared Variance (MSV).

Next, we computed a Pearson correlation between the quality of life and the microaggression subscale, hypothesising that higher microaggression scores would have a moderate to strong negative correlation with the quality of life. Following Cohen's benchmarks (Cohen, 2013), correlation values were interpreted as follows: Effect sizes between .10 and .30 would be considered small, between .30 and .50 would be medium, and .50 or above would be large.

Results

A descriptive analysis of sample sociodemographic and economic features, as presented in Table 1 below, shows the study participant's average age of 32.3. Similarly, close to 60% reported male as gender. About 43% of the participants have at least a bachelor's degree. Long-term dwellers (living in Germany for 10 years and above) accounted for about 34% of participants. Similarly, nearly half (47%) have permanent residence or citizenship in a European country.

Measurement model—categories of microaggression

The measurement model is displayed in Figure 1. The first-order model consists of nine latent constructs covering the factors and categories of microaggressions. The second-order model has three latent constructs covering the categories of microaggression (i.e. microinsults, microassaults and invalidation). An assessment of the fit indices showed that the measurement model achieved a good fit: CMIN/DF = 2.34, $p < .001$; CFI = .94, TLI = .94 and RMSEA = .05 [90% CI = (.04, .05)]. All the indicators loaded significantly at $p < .001$ on their respective latent constructs. In addition, the latent constructs of

microinsults, microassaults and invalidation were significantly inter-correlated.

As presented in Figure 2, the factor loadings of the items on first-order latent variable covering the frequencies, sensitivity and effect of microaggression grouped by categories of microaggression (microinsults, microassaults, invalidation) were mainly above 0.6 (highest = .77), except for the item covering the sensitivity to structural microassaults. It had a factor loading of .44 on the latent construct 'sensitivity to microassaults, 'which is considered acceptable taking into account the sample size (Hair et al., 1998). Similarly, the nine first-order latent variables had very strong factor loading on the second-order latent variables covering the categories of microaggression (microinsults, microassaults, invalidation) (.85 to .96). The three second-order latent variables covering categories of microaggression projected strong correlation coefficients ranging from .82 to .87.

Furthermore, the results presented in Table 2 suggest that nine first-order latent variables projected acceptable to strong reliability with Cronbach's α scores above the .70 threshold, except for the sensitivity to microassaults subscale, which a satisfactory score of .62 (Taber, 2018). Similarly, the second-order latent variable returned Cronbach's α scores of .89 for microinsults, .86 for microassaults and .87 for invalidation, indicating good reliability of the second-order variables. The results further indicate composite reliability, convergent, and discriminant validity. The composite reliabilities for the measures of microinsults (.94), microassaults (.94), and invalidation (.93) were greater than the cutoff of .60 (Bagozzi & Yi, 1988). An examination of the indices of validity shows that all the measures achieved discriminant validity, given that the square roots of the average variance extracted (AVE) (.81 to .85) were above the inter-construct correlations (.71 to .76).

Measurement models—subscales of the BMS-27: frequency, sensitivity, and perceived effects of microaggression

The measurement model is displayed in Figures 2-4. The first-order model consists of three latent constructs covering categories of microaggressions for each factor. The second-order model has single latent constructs covering the frequency of microaggression experience, sensitivity to microaggression and perceived effects of microaggression separately. An assessment of the fit indices showed that the measurement model achieved a satisfactory fit for all three models: For frequency of microaggression, CMIN/DF = 2.64, $p < .001$; CFI = .97, TLI = .96 and

Table 1. Frequency and percentage distribution of participants' sociodemographic and education attainment (n = 604).

	M	SD
Age	32.25	7.68
	N	%
Gender		
Male	351	58.1
Female	245	40.6
No answer (system missing)	8	1.3
Educational attainments		
Primary	2	.3
Secondary without <i>Abitur</i>	88	14.6
Secondary with <i>Abitur</i>	143	23.7
Occupational training	99	16.4
Bachelor's degree or equivalent	182	30.1
Master's degree or equivalent	76	12.6
Doctorate	8	1.3
other	6	1.0
Length of stay in Germany		
Up to 2 years	83	13.7
2-4 years	130	21.5
5-10 years	186	30.8
Over 10 years	205	33.9
Residence status		
Prefer not to say	9	1.5
Others	30	5.0
Ongoing Asylum process	3	.5
Temporary residence permit	280	46.4
Permanent residence permit	120	19.9
Citizenship of an EU state	162	26.8

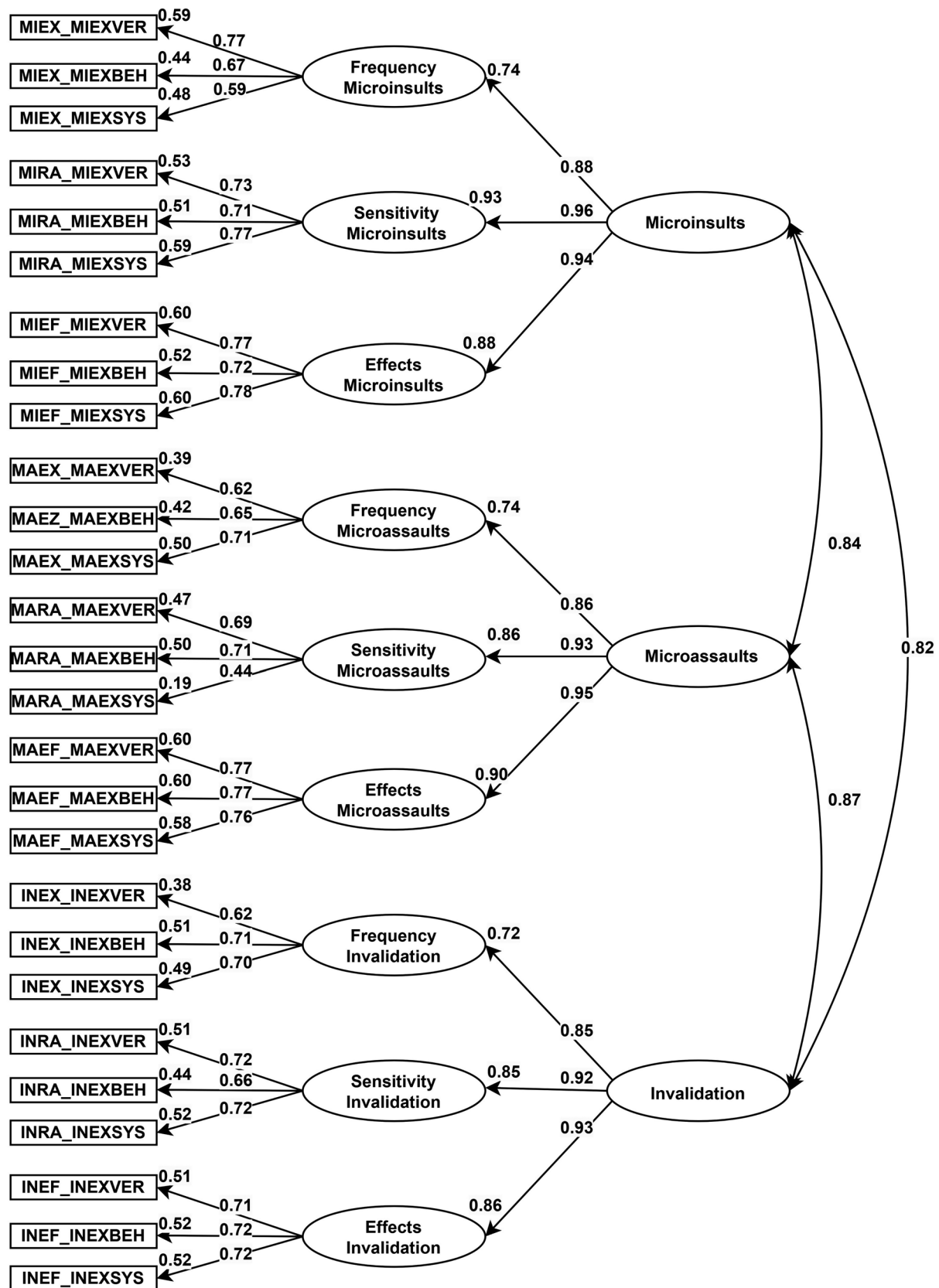


Figure 1. Second-order latent measurement model—categories and aggregate microaggression.

RMSEA = .05 [90% CI = (.04, .07)], for sensitivity to microaggression; CMIN/DF = 1.39, $p = .097$; CFI = .99, TLI = .99 and RMSEA = .03 [90% CI = (.00, .05)], and

for the perceived effects of microaggression CMIN/DF = 1.86, $p = .007$; CFI = .99, TLI = .98 and RMSEA = .04 [90% CI = (.02, .06)]. All the indicators loaded

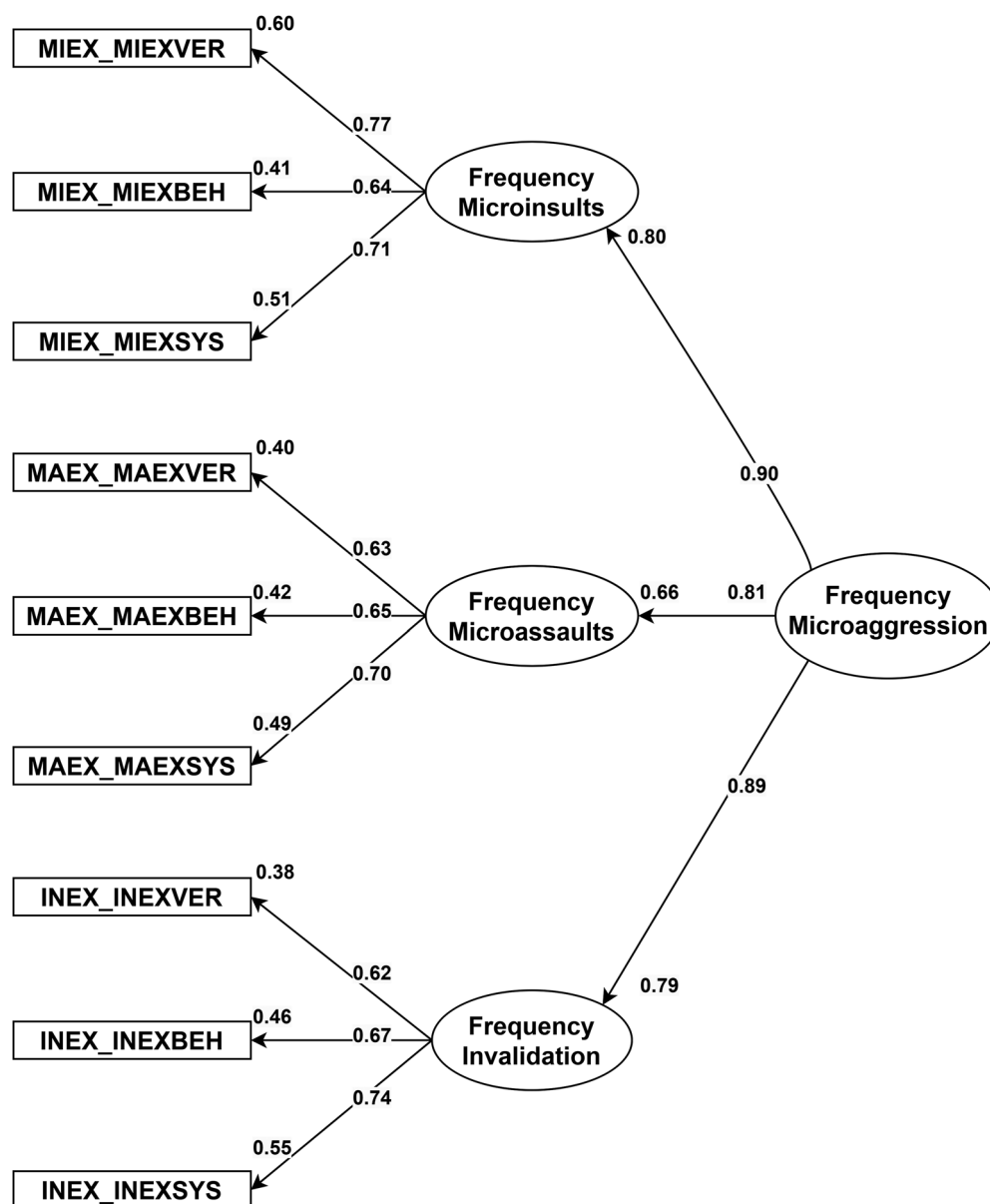


Figure 2. Measurement model—frequency of microaggression.

significantly at $p < .001$ on their respective latent constructs.

Validity and reliability of measures—frequency of microaggression

As presented in Figure 2, the factor loading of the items on first-order latent variable covering the frequencies of microaggression grouped by categories of microaggression (microinsults, microassaults and invalidation) have high factor loading between .62 and .77. Similarly, the three first-order latent variables had very strong factor loading on the second-order latent variables covering the frequency of microaggression experience (.81 to .90). The result presented in Table 3 suggests that the second-order latent

variable returned Cronbach's alpha scores of .84, indicating good reliability of the second-order subscales. The results of ANOVA with Cochran's Test suggest that the items measuring the frequency of microaggressions are significantly different (Mean square = 2.99, Cochran's $Q = 41.85$, $p < .001$).

Validity and reliability of measures—sensitivity to microaggression

As presented in Figure 3, the factor loading of the items on the first-order latent variable covering the sensitivity to microaggression grouped by categories of microaggression were mainly above 0.6 (highest = .76), except for the item covering the sensitivity to structural microassault, which had an acceptable

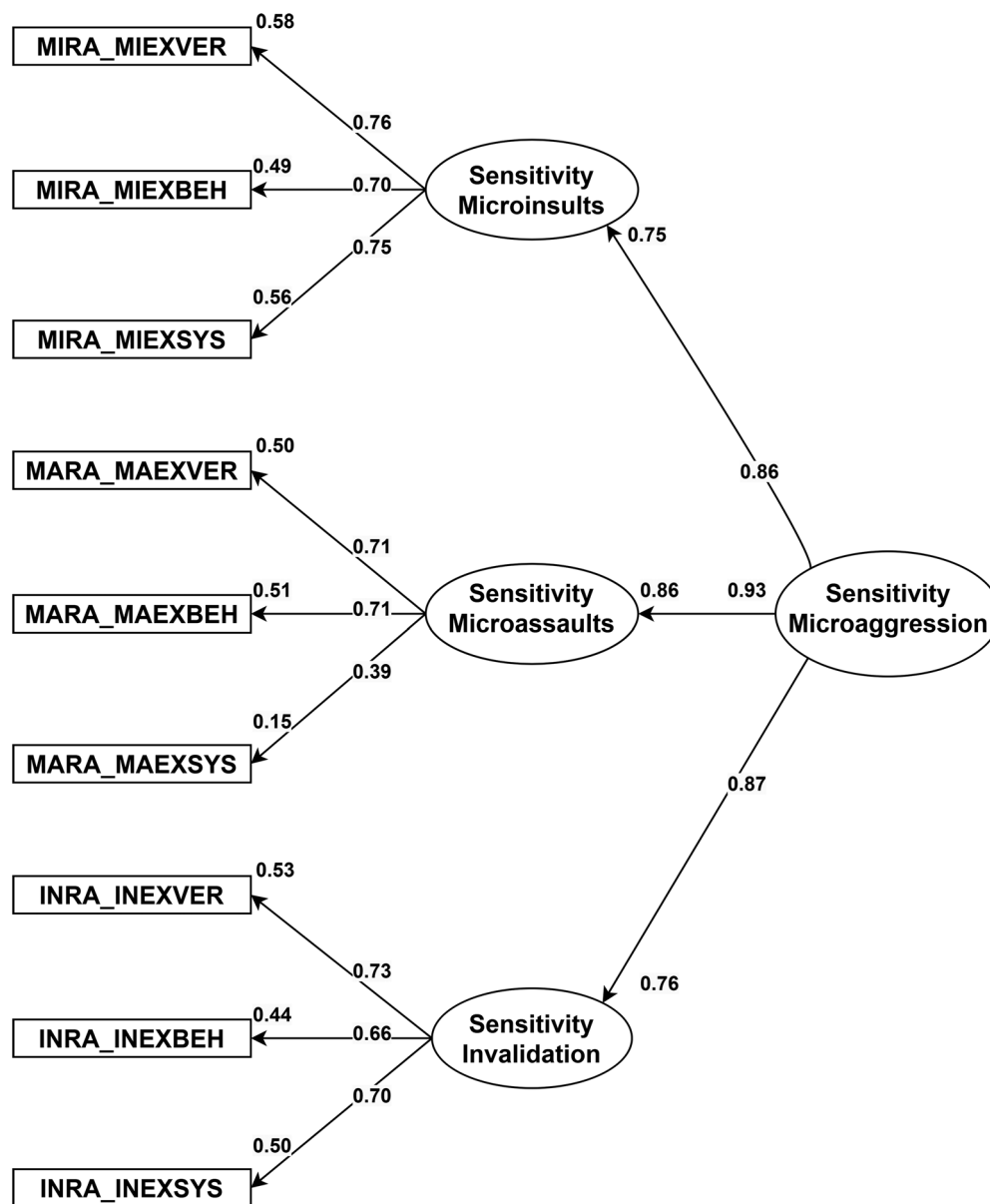


Figure 3. Measurement model—sensitivity to microaggression.

factor loading of .39 on the latent construct 'sensitivity to microassaults'. Similarly, the three first-order latent variables had very strong factor loadings on the second-order latent variable covering sensitivity to microaggression. Further results suggest that the second-order latent variable had good reliability with a Cronbach's α score of .85. The results of ANOVA with Cochran's Test indicate that the items measuring sensitivity to microaggressions are significantly different (Mean square = 3.68, Cochran's Q = 52.13, p < .001).

Validity and reliability of measures—perceived effects of microaggression

Figure 4 presents the model assessing the path to testing the perceived effects of microaggression.

Similar to the two other models considering factors of microaggression, the factor loading of the items on first-order latent variables grouped by categories of microaggression have high factor loading between .70 and .79. Furthermore, the three first-order latent variables had very strong factor loading on the second-order latent variables covering the perceived effects of microaggression experience (.79 to .94). Further exploration suggests that the second-order latent variable had good reliability with a Cronbach's alpha scores of .85. The results of ANOVA with Cochran's Test indicate that the items measuring the perceived effects of microaggression are significantly different (Mean square = 4.52, Cochran's Q = 64.38, p < .001).

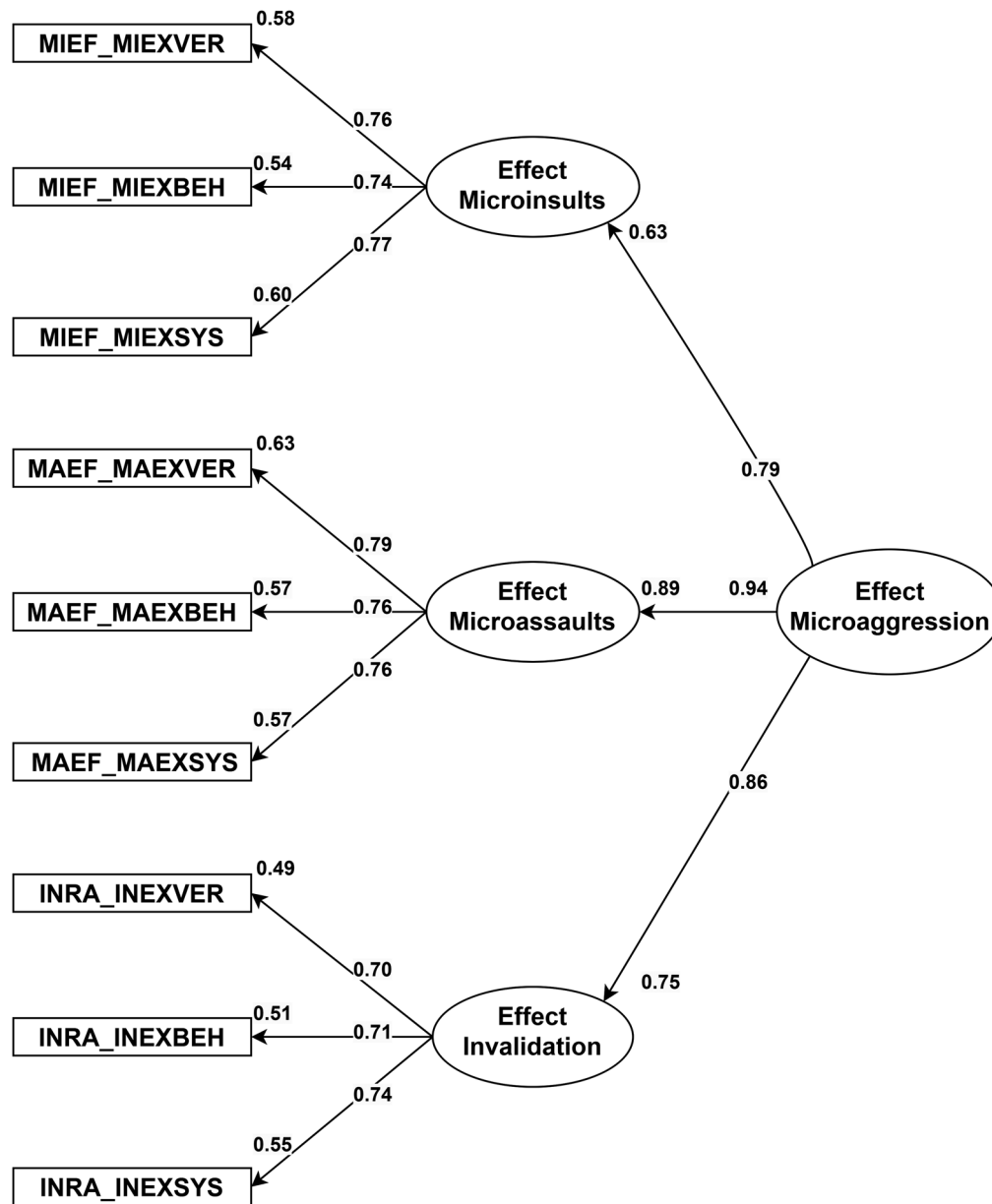


Figure 4. Measurement model—effect of microaggression.

Bivariate association between quality of life and measures of microaggression

As reported in Table 4 above, the Pearson correlation matrix was computed to assess the linear relationship between quality of life and the factors of microaggressions. The results suggest a negative correlation between the quality of life and factors of microaggression. The frequency of microaggression experiences has the highest moderate correlation with quality of life ($r = -.37, p < .001$). The perceived effect of microaggression also showed a moderate correlation with quality of life ($r = -.34, p < .001$). Consequently, sensitivity to microaggression had the lowest correlation coefficient with quality of life ($r = -.28, p < .001$).

Discussion

Study 2 evaluated the validity and reliability of the developed BMS-27, confirming the scale's capacity to capture individual perceptions of microaggressions reliably. The results shed light on the multidimensional nature of this pervasive construct, capturing three key subscales: frequencies of microaggressions, individuals' sensitivity towards them, and their perceived effects. These findings reinforce the scale relevance in psychosocial and health research and affirm the multidimensional coverage. The scale went through 4 iterations: V1, derived from the FDGs; V2, after input from expert interviews; V3, after input from cognitive interviews; and V4, after international

Table 2. Confirmatory factor model fit and reliability and validity assessment for the BMS-27.

Second-order factors	First-order latent variable	Standardised factor loadings	Cronbach's α 1st order	Cronbach's α 2nd order	Composite reliability (CR)	Average variance extracted (AVE)	Maximum shared variance (MSV)	Discriminant validity		
								1	2	3
Microinsults	Frequency of microinsults	.86	.75	.89	0.94	0.85	0.71	0.92 ^a		
	Sensitivity to microinsults	.96	.78							
	Effects of microinsults	.94	.80							
Microassaults	Frequency of microassaults	.83	.70	.86	0.94	0.84	0.76	0.84	0.91 ^a	
	Sensitivity to microassaults	.93	.62							
	Effects of microassaults	.95	.81							
Invalidation	Frequency of invalidation	.85	.72	.87	0.93	0.81	0.76	0.82	0.87	0.90 ^a
	Sensitivity to invalidation	.92	.74							
	Effects of invalidation	.93	.76							

Fit indices: CMIN/DF = 2.34, $p < .001$; CFI = .94, TLI = .94 and RMSEA = .05 [90% CI = (.04, .05)].

^aSquare root of Average variance extracted (AVE).

Table 3. Confirmatory factor model fit and reliability and validity assessment for the BMS-27.

Second-order factors	Cronbach's α 2nd order	Mean	Variance	Std. deviation	ANOVA with Cochran's test—within people: between Items				
					Sum of squares	df	Mean square	Cochran's Q	Sig
Frequency of microaggression	.84	14.79	32.77	5.72	23.89	8	2.99	41.85	<.001
Sensitivity to microaggression	.85	15.01	33.97	5.83	29.47	8	3.68	52.13	<.001
Effects of microaggression	.88	14.45	42.23	6.50	36.12	8	4.52	64.38	<.001

Fit indices (Frequency of Microaggression): CMIN/DF = 2.64, $p < .001$; CFI = .97, TLI = .96, and RMSEA = .05 [90% CI = (.04, .07)].

Fit indices (Sensitivity to Microaggression): CMIN/DF = 1.39, $p = .097$; CFI = .99, TLI = .99, and RMSEA = .03 [90% CI = (.00, .05)].

Fit indices (Effects of Microaggression): CMIN/DF = 1.86, $p = .007$; CFI = .99, TLI = .98, and RMSEA = .04 [90% CI = (.02, .06)].

Table 4. Correlation matrix—association between quality of life, discrimination experiences, factors, categories, and manifestations of microaggression.

		1	2	3	4	Mean	SD
1	Quality of life (EUROHISQOL)	--				68.62	12.60
2	Frequency of microaggressions	-.369**	--			41.07	15.90
3	Sensitivity to microaggressions	-.276**	.725**	--		41.70	16.19
4	Effect of microaggressions	-.337**	.754**	.828**	--	40.14	18.05

**Correlation is significant at the 0.01 level (2-tailed).

harmonisation and input from expert interviews in respective languages. V4 was tested in the validating study with satisfactory results and underwent no further alterations.

In interpreting the merits of the developed scale based on the conceptual framework of Sue et al. (2007), the confirmatory factor analysis's results substantiate the applicability of the three-factor solution and underscore the scale's robustness in effectively measuring the underlying concepts of microaggressions. The identified categories—microinsults, microassaults, and invalidation—demonstrate

favourable factor loadings within the first-order latent construct, attesting to the scale capturing of the nuances of microaggression. This aligns with the established theoretical frameworks (Sue, 2010; Wang et al., 2011) and strengthens the credibility of the scale, reinforcing its utility as a reliable instrument for assessing microaggressions.

Moreover, confirming the three-factor solution through confirmatory factor analysis contributes to the scale's internal validity, aligning with the broader understanding of microaggressions as a multilayer phenomenon. The upheld relationships between the

second-order latent constructs—microinsults, microassaults, and invalidation—underscore the intricate nature of microaggressions and their manifestation across distinct dimensions. This nuanced perspective, grounded in empirical evidence, supports the argument that microaggressions extend beyond overt acts of discrimination, encompassing subtle, covert behaviours that can be equally detrimental. Therefore, the comprehensive validation of the BMS-27 scale within the theoretical framework of Sue et al. (2007) not only advances our understanding of microaggressions but also provides a reliable tool for researchers and practitioners to explore and address these complex phenomena in various contexts.

Although the scale has so far only been validated within a specific group, African migrants residing in Germany, there is a few points to consider regarding its applicability across different populations. The BMS-27 and BMS-9 are metacontextual scales, meaning they measure the experience (BMS-9), frequency, sensitivity, and implication (BMS-27) of microaggression on the individual level and can be adapted for use across different marginalised groups. That is, before being administered, researchers need to identify and define the study group in the questionnaire by replacing ‘<insert minoritised feature>’ in each of the prompts. The underlying theoretical argument is that, while microaggressions manifest differently across social and cultural contexts, their perception and psychological impact can be assessed in a standardised manner.

Notably, the scale is metacontextual but not non-specific; it cannot be administered to a fully heterogeneous group without a shared defined minority identity. This is why the validation sample, while diverse, was centred on a shared minority feature, African migrants, ensuring the scale captures the experiences and psychological effects of microaggression relating to the feature specified. Additionally, it is also recommended to administer the questionnaire with other scales measuring life, social, health or socioeconomic outcome, e.g. health, quality of life, etc. To fully ensure the scale retains reliability and validity across demographic groups, future test-retest reliability assessments on different samples are needed.

Subscales: frequency of, sensitivity to, and perceived effects of microaggressions

To address the multifaceted nature of microaggressions, the scale includes three subscales. The acceptable factor loadings for all three within their

respective first-order latent constructs further validate the robustness of these subscales. Moreover, the strong factor loadings on the second-order latent constructs (frequency microaggression (BMS-9), sensitivity microaggression, effect microaggression) confirm the validity of these subscales. Given that generally, a Cronbach’s α coefficient above 0.7 is considered acceptable for subscale reliability of psychological constructs (Kline, 1998), the reliability and consistency of each subscale are evident, with items demonstrating high interrelatedness, indicative of a coherent and dependable set of measures.

Notably, the scale validity and reliability scores reinforce the subscale reliability for researching the factors of microaggressions, reducing measurement errors, and enhancing data quality. This underscores the importance of incorporating subscales in social scientific studies to ensure more precise and reliable results (Schmidt et al., 2003). It allows for more accurate data collection, improved generalisability, and the potential for theory development. Moreover, the subscales make the BMS-27 suitable for comparative research, further contributing to the scientific community’s understanding of microaggression as a social phenomenon (Campbell & Fiske, 1959; Clark & Watson, 2019).

The correlations observed among the three subscales, assessing the frequency, sensitivity and effect of microaggressions, present compelling evidence that these factors uniquely contribute to the measurement of the broader microaggression experience and simultaneously underscore the interconnectedness of these subscales (Gil-Salmerón et al., 2021). In addition, the moderate negative correlation with quality of life confirms microaggressions as a negative social phenomenon (Moldavska & Welo, 2019; Williams et al., 2020) with adverse implications for quality of life and potentially other social and life outcomes (Lui & Quezada, 2019).

Limitations

It is crucial to consider the following limitations while adapting/adopting the produced BMS-27 questionnaire and interpreting its generated results.

Conceptual distinction between microaggressions and discrimination

The ongoing debate about the conceptual difference between microaggressions and discrimination remains challenging. While the current scale

effectively measures various aspects of microaggressions, the conceptual distinction between these two constructs remains complex and nuanced. It is essential to acknowledge that these factors could potentially impact the interpretation and understanding of the scale's results, and further research may be needed to disentangle these concepts.

Contextual factors

The study does not fully explore the influence of contextual factors such as power dynamics, social climate, and historical context on the experience of microaggressions which can vary significantly across different settings. A deeper exploration of how these factors interact with microaggressions and their impact would provide a more comprehensive understanding.

Test-retest reliability and longitudinal assessment

While the scale underwent tests for validity, it lacks test-retest reliability assessment on different samples and at various time points. Such an analysis is crucial to determine the scale's reproducibility in a broader population and to assess its stability over time. Furthermore, the scale's ability to detect changes in social norms at both the individual and population levels, especially after significant life events, remains unexplored. A longitudinal design is required to assess these aspects, which are vital for evaluating the scale's suitability for use in research with a longitudinal framework.

Scale length

Although the 27-item scale and the 9-item subscales provide rich information on individual microaggression experiences, the factor loadings suggest that further scale reduction may be feasible. Reducing the number of items could streamline the scale and make it more practical and user-friendly, especially when shorter surveys are necessary. This would enhance the scale's utility in broader research contexts.

Addressing these limitations and conducting further research to explore the complexities of microaggressions and their impact will contribute to a more comprehensive and refined understanding of this critical social phenomenon. Additionally, refining the scale's design and evaluating its robustness over time will enhance its effectiveness in capturing the nuances of microaggressions in diverse settings and populations.

Application and future research

The BMS-27 can serve as a valuable tool for various purposes. In workplace diversity training, for instance, the BMS-27 can identify and quantify employees' experiences, sensitivity and perceived effects of microaggression, supporting the need for tailored training programs that actively mitigate microaggressive behaviours and support affected individuals. Additionally, in policy development, the scale can provide empirical data that can further guide and support the creation of more nuanced and comprehensive anti-discrimination policies. The cross-validation of the BMS-27 with quality-of-life measures underscores the psychological toll of microaggressions, highlighting the need for mental health interventions that target identified moderators between microaggressions and adverse mental health outcomes. Finally, it is imperative to acknowledge that further studies are needed to ensure the scales' cross-demographic and long-term application, namely longitudinal studies, test-retest reliability assessments, and cross-cultural replication studies.

In the quest to comprehensively measure the multifaceted nature of microaggressions, the current study provides valuable insights into the potential of the BMS-27 scale. The findings affirm the scale's robustness in capturing individual microaggression experiences, encompassing various categories and dimensions. By delving into the frequencies, sensitivity, and perceived effects of microaggressions, the BMS-27 enables nuanced explorations of this pervasive social phenomenon, enriching our understanding.

Furthermore, the second-order latent scale nature of the microaggression scale and its subscales enhanced measurement precision, theoretical clarity, and construct validity. Capturing the common variance shared by multiple lower-order constructs simplifies data analysis, leading to more straightforward and accurate interpretations of results. This approach also enhances the outward conclusion of findings and can inform decision-making and program development in practical applications. Similarly, introducing subscales dedicated to capturing the frequency, sensitivity, and perceived effects of microaggressions strengthens the scale's precision. These subscales are reliable and valid tools, highlighting the interconnectedness of microaggression constructs and facilitating a holistic yet specific exploration of microaggression understanding. The scale's metacontextual and multidimensional nature makes it relevant for scientific research, reducing bias and enhancing the reliability of research outcomes. The study's findings also emphasise the potential negative

impact of microaggressions on individuals' quality of life, underscoring the urgency of addressing microaggressions as a social determinant of life outcomes.

Acknowledgement

The authors acknowledge Dr. Tosin Tunrayo Olonisakin's contributions to the focus group discussion.

Ethics approval and consent to participate

Ethical clearance was obtained from the Basic and Social Sciences Research Ethics Committee (BaSSREC) at North-West University (Ethics Approval Number: NWU-00617-21-A7). All procedures followed the ethical standards of the institutional and national research committee and comparable ethical standards. Written informed consent was obtained from all participants included in the study.

Consent for publication

Written informed consent was obtained from all participants for publication of the information provided.

Authors contributions

AA conceptualised the study and performed qualitative and quantitative analyses. SHR, FM and JB contributed to qualitative analysis and manuscript draft. EI and KB contributed to project consultation, project implementation and manuscript draft.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This project was funded by the Alexander von Humboldt Foundation as part of a Feodor Lynen Research Fellowship at North-West University, South Africa and a Feodor Lynen Research Return Fellowship at Constructor University, Bremen, Germany.

About the authors

Adekunle Adedeji, Dr., is a sociopsychologist and health researcher at the Hamburg University of Applied Sciences and the University Medical Center Hamburg-Eppendorf, Hamburg, Germany. His work focuses on well-being, quality of life, and social integration, emphasising marginalised populations. He specialises in social behaviours and experience, health disparities, and developing patient-reported outcome measures.

Saskia Hanft-Robert, M.Sc., is a female M. Sc. psychologist, psychotherapist in training and PhD student at the

Department of Medical Psychology at the University Medical Center Hamburg-Eppendorf in Germany. Her research focuses on global mental health, diversity in healthcare and education, multilingualism in (mental) health and community interpreting.

Franka Metzner, Dr., is a psychologist and researcher at the Department of Medical Psychology at the University Medical Center Hamburg-Eppendorf. Her research focuses on mental health outcomes, psychosocial support for patients with chronic conditions, and the development of targeted intervention strategies.

Johanna Buchcik, Prof Dr., is a professor at the Department of Health Sciences, Hamburg University of Applied Sciences. She completed her doctorate at the University of the West of Scotland on the health-related quality of life of older migrants. Her research primarily investigates health behaviour, diversity, and health-related quality of life. She has extensively explored the mental health outcomes of refugees, notably examining the quality of life among Ukrainian refugees in Germany.

Erhabor Idemudia, Prof. Dr., is a Professor of Clinical Psychology at North-West University, South Africa. He completed his PhD in Clinical Psychology at the University of Ibadan, Nigeria. His research focuses on mental health, trauma, and psychosocial well-being, with a particular emphasis on vulnerable populations and cultural influences on mental health outcomes.

Klaus Boehnke, Prof Dr. Phil., is a Professor of Social Science Methodology at Constructor University Bremen gGmbH. He earned his doctorate in psychology from Technische Universität Berlin in 1985. Before accepting an offer to come to Bremen in 2002, he held assistant and associate professorships at Freie Universität Berlin and a full professorship in sociology at Technische Universität Chemnitz. His primary research fields are value development across the lifespan and political socialisation.

ORCID

Saskia Hanft-Robert  <http://orcid.org/0000-0001-5766-1609>

Johanna Buchcik  <http://orcid.org/0000-0003-1541-3513>

Klaus Boehnke  <http://orcid.org/0000-0002-5435-4037>

Data availability statement

Data included in this report are available upon request from the corresponding author.

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