

**A COMPARATIVE ANALYSIS OF HIERARCHICAL AND NUMERICAL
REPRESENTATION IN ORGANIZATIONAL DIVERSITY
PERCEPTIONS AND IDENTITY-SAFETY**

by

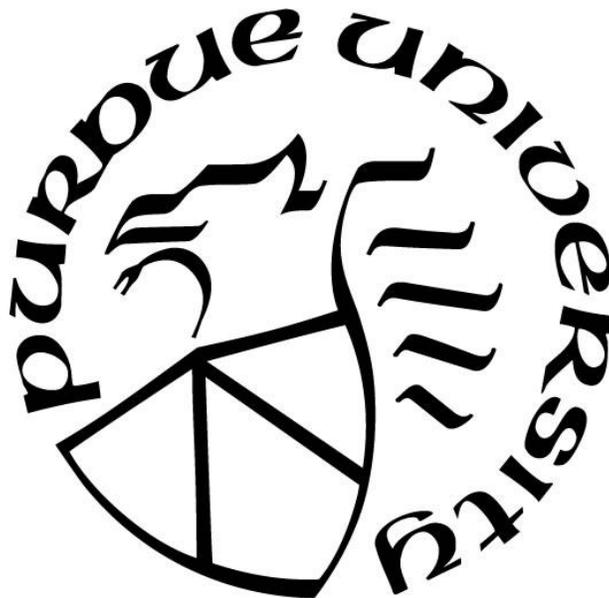
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Dedicated to my Raquela and Winnie: I love you

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ABSTRACT

A significant body of work has demonstrated the importance of diversity and representation in racial and ethnic minority jobseekers' organizational judgements. While representation is often conceptualized as the general percentage or count of underrepresented minorities (URM) within an organization, a broader definition has been proposed that distinguishes this general or numerical representation from hierarchical representation which considers the placement of those URM employees within an organization. Although the separate effects of these two forms of representation have been evaluated, the present study extends on earlier work by considering the interactive effect. Additionally, the current research considered a potential mechanism to explain the influence of these forms of representation on URM's organizational judgements. As expected, results showed that an organization depicting more URM employees (high numerical representation) and including Black leadership personnel (hierarchical representation) increased URM's identity-safety relative to those which had low numerical representation and only White leadership. Moreover, and importantly, both representation effects could be explained indirectly via feelings of anticipated tokenism.

INTRODUCTION

Despite a rapidly growing minority demographic, with an anticipated “minority-majority” by 2050, white-collar and managerial positions remain predominantly White (Ortman & Guarneri, 2009; Department of Professional Employees, 2015). This increasing minority demographic in the workforce is disproportionately represented in blue-collar jobs compared with white-collar positions (Bureau of Labor Statistics, 2017b). This disparity is particularly true for Black Americans, who comprise 13.4% of the U.S. population, but only 9.4% of managerial/professional positions as compared to White Americans who hold 80.0% of such positions despite only comprising 76.6% of the population (United States Census Bureau, 2017; Bureau of Labor Statistics, 2017c).

The overrepresentation of minorities, including Black Americans, in blue-collar jobs is problematic given this class of occupations is associated with less physical safety, stability, and greater health risks (Bureau of Labor Statistics, 2017a). In contrast, white-collar occupations provide greater opportunity for upward social mobility, higher income, and several other benefits that blue-collar jobs do not offer to the same extent (Bureau of Labor Statistics, 2018; Byrne, 1975; see Cox, 1994). For these reasons, minority groups would benefit from employment in white-collar organizations.

Moreover, organizations stand to benefit from a diverse employee body as well (Gonzalez & Denisi, 2009; McLeod & Lobel, 1992; King 2017). Research has shown that race-ethnic organizational diversity can promote employee productivity (Gonzalez & Denisi, 2009), higher quality ideas (McLeod & Lobel, 1992; see Milliken & Martins, 1996), and organizations’ overall attractiveness (King, 2017; Purdie-Vaughns, Steele, Davies, Dittmann, R., & Crosby, 2008; Barney & Wright, 1998) for White employees and employees of color alike. Yet, increasing diversity within job recruitment is increasingly difficult due to the prevalence of knowledge-based positions in today’s workforce and the rarity of applicants with the required skill-sets across all demographic groups (see Ployhart, 2006). Thus, to lose out on potentially valuable applicants on the basis of poor organizational diversity could unnecessarily

disadvantage an organization when compared to their more inclusive competitors (Barney & Wright, 1998).

To attract a more diverse workforce, many organizations explicitly attempt to attract underrepresented minorities (URM) via promotional materials such as websites, brochures, and ads (Windscheid, Bowes-Sperry, Jonsen, & Morner, 2018). Specifically, these organizations are attempting to signal that their organization would be an attractive and safe place to work for minorities (Murphy & Taylor, 2012). Previous research (Purdie-Vaughns et al., 2008; King, 2017; see Avery & McKay, 2006) has suggested the efficacy of these recruitment practices may be a function of the amount of representation depicted. Said differently, diversity attracts diversity. Indeed, the mere presence of other ingroup members in an organization has elicited greater perceived trust and belonging (Pietri, Johnson, & Ozgumus, 2018), safety (King, 2017), and overall organizational attractiveness (Pietri et al., 2018; Avery, 2003) for URM job applicants in addition to reducing perceptions of discrimination or mistreatment (King, Avery, Dawson, & King, 2017).

Despite growing evidence that representation does impact URM applicants and their impressions of an organization (Pietri et al., 2018; King, 2017; Unzueta & Binning, 2012; Purdie-Vaughns et al., 2008; Avery, 2003) and that diversity does benefit organizations (Gonzalez & Denisi, 2009; McLeod & Lobel, 1992; King 2017), a practical concern remains. That is, how do organizations demonstrate representation and, subsequently, promote diversity within their organization when they lack representation horizontally (i.e., at a given rank within an organization) and vertically (i.e., at low and high ranks within an organization)? Progress is slow, as the statistics demonstrate, so this study will extend this literature by examining whether having a few URM in key positions might compensate for the negative consequences of having overall low representation. Specifically, this study will examine whether hierarchical representation alone can signal safety to URM. Would that be enough to demonstrate the organization's commitment to diversity even when they have few diverse employees overall?

LITERATURE REVIEW

Social Identity Threat and Identity-Safety Cues

Social identity threat refers to the fear that one will be devalued or discriminated against on the basis of their minority identity (Steele, Spencer, & Aronson, 2002). In an organizational setting, this fear has been linked to a multitude of downstream consequences including increased voluntary turnover (Zatzick, Elvira, & Cohen, 2003), decreased performance (Steele, 1997), and concerns about trust and belonging (Murphy et al., 2007). According to Walton, Murphy, and Ryan (2015), aspects of any given environment may suggest whether minority group membership is positive or negative. These types of identity-safety and identity-threat cues are, therefore, differentiated by their indication of potential inclusion or exclusion on the basis of that minority identity. Broadly, Walton et al. (2015) propose these threats can be presented via interpersonal cues, such as critical feedback; cues within organizational policies and practices, such as diversity messages or how the organization views intelligence and effort; or, recruitment materials and physical environment, such as numerical representation.

Prior research has shown that the mere presence, or the lack thereof, of an individual's ingroup can serve as an identity-safety or threat cue (Pietri et al., 2018; Murphy, Steele, & Gross, 2007). This is particularly true in organizations or job-fields in which a group has been historically underrepresented, such as for women in STEM (Pietri et al., 2018). Recently, Lindsey et al. (2017) demonstrated how the presence of racial ingroup members may potentially reduce URM's negative perceptions of an organization such as with discrimination. Similarly, others (Pietri et al., 2018; Avery, 2003; Avery, Hernandez, & Hebl, 2004) have demonstrated the presence of ingroup members within an organization can increase positive perceptions. Specifically, these researchers have found that increased inclusion promotes a sense of belonging in the prospective organization as well as greater organizational attraction.

In line with previous research (Walton et al., 2015; Williams & Bauer, 1994; Pietri et al., 2018; Murphy et al., 2007), Purdie-Vaughns et al. (2008) and King (2017) examined numerical representation as well as organizational diversity philosophy as organizational identity-safety cues for Black employees. Demonstrating the significance of numerical representation, Purdie-Vaughns et al. (2008) reported an interaction between numerical representation and diversity

philosophy type, such that high numerical representation mitigated the negative impact of a colorblindness ideology on organizational trust and comfort. Similarly, King (2017) found representation – independent of diversity philosophy – to be an effective predictor of Black employees’ organizational safety perceptions. Specifically, King (2017) found that when representation was low, Black employees perceived more potential tokenism which, in turn, decreased their perceptions of organizational safety (i.e., a composite index of trust and comfort, organizational attraction, and affective commitment). This finding from King (2017) is noteworthy given that it demonstrates an URM employee may be experiencing tokenism before they actually enter an organization due to low representation.

Representational Diversity

Unzueta and Binning (2012) highlighted the importance of not just numerical representation but also hierarchical representation in their definition of diversity. Numerical representation simply considers the count of minority or non-White employees in an organization, whereas, hierarchical representation considers the positions of minority or non-White employees in addition to the count. Using this distinction, Unzueta and Binning (2012) found minority racial group members did, in fact, qualify diversity as both numerical and hierarchical representation. That is, both forms of representation influenced their perceived organizational diversity. In contrast, majority group members were more inclined to see an organization as diverse based on numerical representation alone.

Likewise, Avery (2003) considered how organizational diversity perceptions may be a function of group membership by examining hierarchical representation of Black employees as a predictor of organizational attractiveness among Black and White prospective employees. Compared to organization’s with an entirely White staff or a mixed-race staff with all White management, Avery (2003) found Black prospective employees to be most attracted to organizations with recruitment ads depicting Black employees in both high-status and lower-status positions. Unlike White prospective employees’ attraction to the organizations which was unaffected by the status of the Black employees included in the ad. This divergence in diversity perceptions suggests that URMs, unlike their White counterparts, are sensitive to not just *who* is in the organization but *where* they are within the organization; thereby, highlighting the importance of hierarchical representation.

These findings from Unzueta and Binning (2010) and Avery (2003) inspire the following question: can a few URM in high-status positions compensate for low numbers of URM employees in the organization overall; such that, they will not only want to apply, but will also feel safer as a result of hierarchical representation? Although the inclusion of URMs has demonstrated positive individual and organizational outcomes (Pietri et al., 2018; King, 2017; Avery, 2003; Avery et al., 2004), numerical representation also has potential negative implications for organizations depending upon how the representation is implemented and the assumed intentions behind diversifying the organization (see Avery & McKay, 2006). Following this same idea, Lindsey et al. (2017) examined perceived behavioral integrity as a mediator of the influence of management ethnic representativeness (i.e., the extent to which the race/ethnic composition of managers mirrored that of the organization's employee body) and found that an unbalanced race/ethnic ratio between managers and subordinates increased perceptions of mistreatment for racially/ethnically dissimilar employees. Taken together, these findings from Unzueta and Binning (2012), Avery (2003), and Lindsey et al. (2017) suggest hierarchical representation has important implications for organizational perceptions.

This study will also attempt to merge Purdue-Vaughn et al.'s (2008) demonstration of the relationship between numerical representation and perceptions of an organization with Avery's (2003) similar findings regarding hierarchical representation. Because high numerical representation of URM in an organization today is not the standard, it is likely that URM prospective employees will often be considering jobs in organizations with few racial ingroup members. The potential negative perceptions that low organizational numerical representation may cause could deter prospective employees from applying or accepting a job at an organization (Cohen, Aronson, & Steele, 2000); thereby, creating a recursive process of organizational underrepresentation for such groups.

It's possible that hierarchical representation may influence job applicants' organizational perceptions by reducing their concerns of tokenism alike numerical representation (King, 2017). Although Avery (2003) established the relationship between hierarchical representation and Black jobseekers' perceptions, the mechanism through which hierarchical representation increases Black jobseekers' attraction to an organization remains unclear. As previously mentioned, the modern job market has granted more power to employees, particularly those with a diverse set of competencies; thereby, allowing job applicants to be more selective in what

organizations they apply to and accept job offers from (see Ployhart, 2006). Thus, it's possible that an organization lacking numerical representation overall may still appeal to minority jobseekers by reducing their concerns of tokenism with hierarchical representation instead.

Although “best practice” for organizational diversity appearance may be the combination of numerical and hierarchical representation, instances in which only one type of representation is present are likely to occur during this period of demographic transition in the United States. Although Avery (2003) considered hierarchical representation independently as a factor of organizational diversity perceptions among URM and White job seekers, both numerical and hierarchical representation have not been considered interactively. In other words, researchers have not considered how or if one form of representation may compensate for the other; including, the potential for hierarchical representation to serve as an identity-safety signal in the absence of numerical representation. Thus, the current study will examine this possibility by testing the ability for the hierarchical representation to moderate the relationship between anticipated tokenism and numerical representation.

Present Study

Overview and Hypotheses

The present study seeks to replicate Avery's (2003) findings regarding hierarchical representation and the Purdie-Vaughns et al.'s (2008) findings regarding numerical representation as an effective identity-safety cue in tandem. Additionally, this study will extend the work of Avery (2003) in two ways: first, by examining the interactive effects of numerical and hierarchical representation and, second, by considering anticipated tokenism as the mechanism through which hierarchical representation serves as an identity-safety cue. In doing so, this study will address the following question: to what extent can hierarchical representation in the absence of numerical representation mitigate potential tokenism and, therefore, increase identity-safety for prospective minority employees? Specifically, hierarchical representation will be examined as a moderator for the influence of numerical representation on organizational diversity and identity-safety based on the findings from Avery (2003) and Unzueta and Binning's (2012) extended definition of organizational diversity (see figure 1). Additionally, King (2017) provided evidence of potential anticipated tokenism for URM based on lack of

visible representation portrayed through an organization's website. With respect to these findings, this study will examine anticipated tokenism as a mediator of the relationship between numerical representation and organizational identity-safety.

The current study will test the notion that organizations may be able to mitigate this issue of low representation and attract URM applicants by appealing to "quality over quantity". That is, for organizations that have relatively low representation overall, the presence of even a few URM in high-status positions may still be able to signal a value of diversity. Based on this notion and Avery (2003)'s findings, we hypothesize the following:

Hypothesis 1: Organizations with high numerical representation will engender a) less anticipated tokenism and b) greater organizational identity-safety perceptions than those with lower numerical representation for Black jobseekers.

Hypothesis 2: Organizations with hierarchical representation will engender a) less anticipated tokenism and b) greater organizational identity-safety perceptions than those without hierarchical representation for Black jobseekers.

Hypothesis 3: Hierarchical representation will moderate the effect of numerical representation on concerns about tokenization; such that, having hierarchical representation will reduce Black jobseekers' anticipated tokenization despite having lower numerical representation (see figure 2).

Hypothesis 4: Anticipated tokenism will mediate the relationship between numerical representation and organizational identity-safety perceptions; such that, higher numerical representation will reduce anticipated tokenism which will result in greater organizational identity-safety perceptions for Black jobseekers (see figure 1).

This research contributes to the existing management literature by examining and, potentially, offering a practical solution for organizational diversity recruitment initiatives. Specifically, the study contributes to this literature by examining hierarchical representation as an organizational identity-safety cue and its potential to reduce URM's negative perceptions of organizations with low representation. Further, this study stands to provide support for Unzueta and Binning's (2012) extended diversity definition to include hierarchical representation by contributing evidence to Avery's (2003) finding that hierarchical representation can significantly influence perceptions of organizational diversity beyond that of numerical representation.

METHOD

Participants

A total of 483 participants completed questionnaires. A visual screening of the data distribution for each measure did not reveal any apparent outliers, missing responses or items, or abnormal response patterns. Following the visual screening, participants who did not correctly answer the manipulation or attention check items and those who did not fit the demographic inclusion criteria were excluded.

Of the completed questionnaires, 42 (8.70%) participants indicated a race other than Black and 1 (0.21%) participant indicated that they did not reside in the U.S, thus resulting in the exclusion of their data. All participants indicated they were at least 18 years old. To ensure data quality, we included a single-item attention check (i.e., “I enjoy watching basketball (please check Strongly Disagree”)) which resulted in the exclusion of an additional 44 (10.0%) participants. We also included an open-ended response item (i.e., “Please briefly describe (in one to two sentences) what you were asked to do during this study”) and excluded 17 (4.29%) participants who gave irrelevant (ex. “VERY GOOD”) or non-sensical (ex. “yes employee requirement study very well”) responses. Crosstab chi-square analyses revealed that neither exclusion for the attention check, $\chi^2(1, 440) = 7.17, p = .067$, nor the open-ended response item, $\chi^2(1, 440) = 6.04, p = .419$, significantly differed by condition. The final sample consisted of 379 (59.4% identified as female) participants with a mean age of 36.36 (SD = 10.36).

Power Analysis

Based on the effect sizes from King (2017), a MedPower (Kenny, 2017) analysis indicated that a sample of 41 participants will be required to detect a large sized (Cohen’s $d = .25$) indirect effect. A G*Power (Faul, Erdfelder, Buchner, & Lang, 2009) analysis indicated that a sample of 100 participants per condition will be required to detect a large sized effect for the proposed interaction. Thus, we estimated a total sample of 400 participants would adequately test the proposed mediation and moderation

After data collection, a post-hoc sensitivity analysis from G*Power (Faul et al., 2009) determined how much power the final sample of 379 participants provided to detect the observed effects. The observed main effect of numerical representation was used in the sensitivity analysis as it fell between the very small effect observed for the numerical x hierarchical representation interaction and the very large effect observed for the main effect of hierarchical representation.. The sensitivity analysis suggested this sample provided adequate power (.14) to reach a critical *F*-value of 3.87.

Design

This study used a 2 (high numerical representation vs. low numerical representation) x 2 (hierarchical representation vs. no hierarchical representation) between subjects design. Additionally, anticipated tokenism was examined as a potential mediator in an attempt to replicate findings from King (2017).

Stimulus Materials

Based on the stimuli used in Purdie-Vaughns et al. (2008), Avery (2003), and King (2017), the numerical representation manipulation occurred via a staff photograph of current employees presented on the fictitious organization's webpage. One of two possible staff photos (previously compared and found to be similar on levels of trust and comfort, organizational attractiveness, and tokenism; see King, 2017) was presented to each participant depicting either high representation or low representation. The high representation photo included two Black employees; whereas, the low representation photo only included White employees (see Appendix C). Likewise, the hierarchical representation manipulation was presented via two possible leadership photos. Based on random assignment, participants either viewed an image of the fictional organization's executive board depicting a Black vice president (hierarchical representation) or White vice president (no hierarchical representation) with the White CEO (see Appendix C).

Before data collection, we conducted a pilot study to ensure that the "Meet our Staff" and the "Our Leadership" pages effectively signaled the intended numerical representation and hierarchical representation for each condition. Using a sample of 92 Amazon Mechanical Turk

employees, we compared the expected diversity of staff for two images displayed on the “Meet our Staff” page (see Appendix C) rated on the numerical representation manipulation check item described above using independent sample t-tests. The “high representation” staff image ($M = 5.53$; $SD = 1.82$) was rated as having more ethnic minority employees than the “low representation” staff image ($M = 4.12$; $SD = 2.33$), $t(90) = 3.21$, $p = .002$. We also compared the perceived leadership diversity for two images displayed on the “Our Leadership” page using the hierarchical representation manipulation check described above. As expected, the “hierarchical representation” leadership image ($M = 6.20$; $SD = 1.28$) was rated as having more ethnic minority representation in the organizational leadership than was the “no hierarchical representation” leadership image ($M = 2.47$; $SD = 2.02$), $t(90) = -10.88$, $p < .001$. Therefore, the numerical and hierarchical representation manipulation via the “Meet the Staff” and “Our Leadership” images achieved the intended results.

Measures

Anticipated Tokenism

The extent to which participants anticipate being tokenized within the organization was measured using the Subjective Experience of Tokenism scale from King et al.’s (2009) study 2 (adapted from Yoder, 1994). The measure is comprised of 7-items rated on a 7-point Likert scale from, 1 (*strongly disagree*) to, 7 (*strongly agree*) and assesses experiences of increased visibility, social isolation, and gender role expression associated with tokenism. Because the measure was originally intended for gender-based tokenization rather than race/ethnicity and for current employees rather than prospective employees, the items were adapted to include race and be in future-tense. An example item includes, “I (would) feel that I am a ‘token’ representative of my gender (race) in my current position.” King et al. (2009) reported the internal consistency of the scale as $\alpha = .70$. To enhance the reliability of the measure, the reverse-scored items were rewritten (ex., “I would not often spend social and leisure time with my colleagues.”)

Organizational Identity-Safety

Following King (2017), the following measures were used to indicate our outcome measure, “organizational identity-safety”:

Trust and Comfort

The extent to which participants felt they could trust and be comfortable within the organization was measured using the Trust and Comfort scale from Purdie-Vaughns et al. (2008). The measure is comprised of 11-items rated on a 7-point scale from, 1 (*strongly disagree*) to, 7 (*strongly agree*). Purdie-Vaughns et al. (2008) reported an internal consistency of the scale as $\alpha = .92$. King (2017) reported a similar estimate of $\alpha = .95$.

Affective Commitment

The extent to which participants anticipated emotional attachment and commitment to the organization was measured using the Affective Commitment Scale (ACS) from Allen and Meyer (1990). The measure is comprised of 8-items rated on a 7-point Likert scale from 1, (*strongly disagree*) to, 7 (*strongly agree*). Allen and Meyer (1990) reported an internal consistency of $\alpha = .87$. Because the measure was originally intended for current employees rather than prospective, the items were adapted to future-tense. An example item includes, “I would be very happy to spend the rest of my career with this organization.”

Organizational Attraction

The extent to which participants were attracted to the organization was measured using the General Attractiveness and Intentions to Pursue subscales from Highhouse, Lievens, and Sinar’s (2003) Organizational Attraction scale. The measure is comprised of three subscales (organizational prestige, intentions towards company, and company attractiveness) across 15-items rated on a 7-point Likert scale from, 1 (*strongly disagree*) to, 7 (*strongly agree*); however, only 10-items will be included due to the exclusion of the organizational prestige subscale. Highhouse et al. (2003) reported the internal consistency for intentions towards the company subscale as $\alpha = .82$ and company attractiveness subscale as $\alpha = .88$.

Manipulation Checks

Using a 7-point scale from, 1 (*not at all diverse*) to, 7 (*extremely diverse*), participants completed a single-item regarding the position of Black employees in the photograph to measure the sensitivity of the numerical manipulation between conditions (high vs. low). Additionally, participants completed a second item relating to the hierarchical representation manipulation. The second item asked whether Black employees within the fictional organization are

represented at various levels of the organization and will be rated on a 7-point scale from, 1 (*not at all*) to, 7 (*very much*).

Procedure

Participants completed a web survey via the online survey system, Qualtrics. Participants first viewed a screen with the study information sheet. To view the next screen and begin the study, participants were required to indicate their consent. Upon providing their consent, participants were randomly assigned to a numerical representation (high vs. low) and hierarchical representation condition (hierarchical vs. no hierarchical). Participants then viewed a screen instructing them to review images of a fictitious consulting company website's, Advancement Consulting, including their homepage, an "About Us" page, a "Current Projects" page, a "Meet the Staff" page, and an "Our Leadership" page in that order.

The "Meet the Staff" page contained an image of several current employees which depicted the numerical representation manipulation. Participants assigned to the high numerical representation condition viewed a staff photograph including Black employees. Conversely, participants in the low numerical representation condition viewed a staff photograph with only White employees. The "Our Leadership" page contained two headshots of the current CEO and Vice President of the organization which depicted the hierarchical representation manipulation. Participants assigned to the hierarchical representation condition viewed an White CEO and Black Vice President. Conversely, participants in the no hierarchical representation condition viewed a White CEO and a White Vice President.

After reviewing the fictitious website, participants then completed measures of anticipated tokenism and organizational identity safety. Following the measures, participants were asked to complete the manipulation check items and a demographic questionnaire.

RESULTS

Preliminary Analyses

Descriptive Statistics

Before conducting our main analyses, we examined the mean, standard deviations, Pearson correlations, and reliabilities (i.e., Cronbach's Alpha) of each measure (see Appendix A Table 1). Each scale demonstrated acceptable reliability: tokenism ($\alpha = .74$), trust and comfort ($\alpha = .95$), affective commitment ($\alpha = .84$), and organizational attraction (general attractiveness, $\alpha = .90$; job pursuit intention subscale, $\alpha = .88$). As expected, trust and comfort, affective commitment, and organizational attraction were strongly correlated (r 's $> .70$) so as to suggest they relate to the same underlying construct. Consequently, following King (2017), we calculated standardized z-scores for these three measures and combined them into a composite "Organizational Identity Safety" variable which we used as our primary outcome.

Hypothesis Tests

Main Effects

Before testing our hypotheses, we first determined whether our data qualified for the proposed moderated mediation analysis by running an ANOVA for the proposed mediator, Anticipated Tokenism, and the outcome measure, Organizational Identity Safety. First, we used a 2 (numerical representation: low vs. high) x 2 (hierarchical representation: no representation vs. hierarchical representation) ANOVA to test the main effects of numerical representation (Hypothesis 1), hierarchical representation (Hypothesis 2) and the proposed numerical representation x hierarchical representation interaction (Hypothesis 3) on Anticipated Tokenism. In support of Hypothesis 1a, the results indicated a significant main effect of numerical representation, $F(1, 375) = 12.91, p < .001, \eta^2 = .031$, such that low representation ($M = 4.30$; $SD = 0.71$) evoked greater anticipated tokenism than did high representation ($M = 3.94$; $SD = 0.72$). In support of Hypothesis 2a, the ANOVA also revealed a significant main effect of hierarchical

representation on Anticipated Tokenism, $F(1,375) = 10.25, p < .001, \eta^2 = .024$, such that no hierarchical representation ($M = 4.28; SD = 0.73$) evoked greater anticipated tokenism than having hierarchical representation ($M = 3.96; SD = 0.71$). However, Hypothesis 3 was not supported as the numerical representation x hierarchical interaction was not significant, $F(1,375) = 0.54, p = .464$.

Next, we used a 2 (numerical representation: low vs. high) x 2 (hierarchical representation: no representation vs. hierarchical representation) ANOVA to test the main effect of numerical representation (Hypothesis 1b) and hierarchical representation (Hypothesis 2b) on Organizational Identity Safety. In support of Hypothesis 1b, we found a significant main effect for numerical representation on Organizational Identity Safety, $F(1, 375) = 11.39, p = .001, \eta^2 = .024$. Replicating King's (2017) findings, the high numerical representation conditions ($M = 0.15; SD = 0.94$) elicited greater Organizational Identity Safety than the low numerical representation conditions ($M = -0.14; SD = 0.87$). The results also demonstrated support for Hypothesis 2, as hierarchical representation exhibited a significant main effect $F(1, 375) = 32.10, p < .001, \eta^2 = .074$. Like numerical representation, having hierarchical representation ($M = 0.25; SD = 0.82$) elicited greater Organizational Identity Safety than not having hierarchical representation ($M = -0.26; SD = 0.95$). Notably, the numerical representation x hierarchical representation was not significant, $F(1,375) = 0.01, p = .979$.

Mediation Analysis

Although we did not find a significant interaction between numerical representation and hierarchical representation on Anticipated Tokenism (Hypothesis 2), suggesting that our data did not warrant the proposed moderated mediation model (see Appendix B figure 1), we did find significant main effects for numerical representation on Anticipated Tokenism and Organizational Identity Safety. Consequently, we tested the effects of numerical representation on Organizational Identity Safety via Anticipated Tokenism (Hypothesis 4) as a simple mediation model using Hayes' (2013) PROCESS macro model 4 with 10,000 bootstrap samples. Results revealed a significant indirect effect (i.e., the 95% confidence interval (CI) did not include 0; 0.16, 95% CI: 0.06 – 0.25). Thus, as expected and replicating findings from King (2017), participants who viewed an organization with high numerical representation anticipated less tokenism which increased their perceived Organizational Identity Safety.

Because we also found significant main effects for hierarchical representation on Anticipated Tokenism and Organizational Identity Safety, we also tested the effects of hierarchical representation on Organizational Identity via Anticipated Tokenism (see Appendix A figure 3) using Hayes' (2013) PROCESS macro model 4 with 10,000 bootstrap samples. Results revealed a significant indirect effect (0.13, 95% CI: 0.04 – 0.23). These findings suggest that those participants who viewed an organization with a racial/ethnic minority leader also anticipated less tokenism which increased their Organizational Identity Safety perceptions.

DISCUSSION

In the midst of a historic demographic shift which will render the United States a majority non-White country within the next few decades (Ortman & Guarneri, 2009), the overrepresentation of White-Americans in most professional occupations is striking. The present study contributes to a growing body of literature (e.g., Pietri et al., 2018; King, 2017; Purdie-Vaughns et al., 2009; Avery & McKay, 2006; Avery, 2004) dedicated to offering practical solutions for organizations seeking to rectify such representation issues and, consequently, create a more diverse workforce. Building on previous work which has found that Black jobseekers are attracted to organizations with more numerical (Purdie-Vaughns et al., 2008) and hierarchical (Avery, 2003) representation, the present study sought to answer the following question: to what extent can hierarchical representation in the absence of numerical representation mitigate potential tokenism and, therefore, increase identity-safety for prospective minority employees? In doing so, this study compared Black prospective employees' concerns of tokenism and, as a by-product, their perceived organizational identity-safety at a company with either high or low numerical representation and with or without Black employees in leadership.

Although the proposed numerical and hierarchical representation interaction was not significant, the findings from this study lend support to Hypothesis 1 and Hypothesis 2. Regarding the Hypothesis 1b, numerical representation exhibited a significant main effect on organizational identity-safety. In line with findings from Purdie-Vaughns et al. (2008), this study found that greater inclusion of Black employees increased anticipated organizational identity-safety for Black prospective employees. Regarding Hypothesis 2b, results also revealed that hierarchical representation exhibited a significant main effect on organizational identity-safety. Specifically, including Black employees in leadership increased participants perceived organizational identity-safety relative to when the organizational leadership was only White.

Regarding Hypothesis 3, the proposed moderated-mediation model (see Appendix A figure 1) was not tested as preliminary analyses did not find the numerical and hierarchical representation interaction to be significant. However, both forms of representation did exhibit a significant main effect on the proposed mediator, Anticipated Tokenism, thus providing support for Hypotheses 1a and 2a and rationale for evaluating simple mediation models instead. In line

with Hypothesis 4, greater inclusion of Black employees within an organization significantly reduced participant's concerns of tokenism within that company which resulted in greater identity-safety expectations; thereby, replicating the findings from King (2017). Exploratory mediation analyses revealed that hierarchical representation displayed the same relationship. Indeed, viewing an organization which had Black employees in leadership resulted in less tokenization concerns and increased organizational identity-safety expectations for Black participants. Thus, these results provide further evidence of the efficacy of hierarchical representation as a distinct identity-safety cue separate from numerical representation more generally.

Theoretical Contributions

The primary purpose of this study was to test the efficacy of hierarchical representation as an independent identity-safety cue as well as determine whether hierarchical representation could compensate for poor numerical representation within an organization. To address this purpose, the current study sought to replicate and extend on earlier applied research which demonstrated the importance representation at different employee-levels on Black jobseekers' organizational impressions (Avery, 2003). Building on Avery's (2003) findings, the results of the current study reify the importance of hierarchical representation in Black jobseekers' organizational perceptions. Although the proposed interaction between hierarchical and numerical representation was not supported by the data, thereby suggesting that hierarchical representation would not compensate for poor numerical representation, the same representation main effects were found. Thus, by replicating Avery's (2003) main effect of hierarchical representation on organizational impressions for Black prospective employees, this study reified the importance and potential of hierarchical representation as an identity-safety cue.

A secondary, but equally important, purpose and contribution of this study is the replication of King's (2017) finding of anticipated tokenism as the mechanism through which representation influences URM job applicants' organizational impressions. King (2017) replicated earlier research which demonstrated the effects of numerical representation and an organization's diversity philosophy on Black prospective employees' reactions (Purdie-Vaughns et al., 2008) by considering the mediator of this relationship. In line with King's (2017) hypothesis, concerns of tokenization within the organization were linked to numerical

representation and predicted participants' organizational identity-safety; such that, greater representation resulted in less concern and greater anticipated safety. Importantly, King's (2017) work provided a potential explanation as to why certain diversity recruitment strategies are effective and others are not. The current study reified the potential explanatory power of tokenization concerns as a distinguisher between effective and ineffective recruitment strategies for URM. Importantly, the successful replication of anticipated tokenism as a mediator of the representation – organizational identity-safety relationship speaks to the King (2017) conclusion that URM job applicants' "vicariously experience perceptions of tokenism" (p. 27) which may deter them from even considering applying to organization lacking diversity– let alone accepting a job offer from one.

Practical Implications

Practically, this study aimed to provide a possible recruitment strategy for organizations currently lacking diversity but seeking to rectify this issue. While the results from the main analyses suggest that hierarchical representation may not be able to compensate for low numerical representation, the exploratory analyses speak to the importance of both forms of representation. Because hierarchical representation also reduced tokenization concerns and promoted organizational identity-safety, like numerical representation, organizations should not only be mindful of their employees but of their leadership demographics as well.

Unsurprisingly, including Black employees in the organization and in leadership would be most appealing to Black job applicants, but an organization demonstrating representation in either form will certainly have the advantage over an organization with neither. There tends to be concerns about alienating White job applicants whenever implementing a diversity recruitment strategy. While some strategies, such as the inclusion of Affirmative Action policies (Walker et al., 2007), have been found to elicit a negative response from White jobseekers, findings from Avery (2003) showed that White jobseekers were relatively unaffected by the inclusion of Black managers in recruitment materials. Thus, organizations should not anticipate that the adoption of this recruitment strategy (i.e., advertising minority employees in leadership) would come at the cost of alienating White prospective employees.

Limitations & Future Directions

One limitation of this study results from the method and, specifically, the use of fictitious organizational webpages. Although the use of fictitious organizations allows for greater experimental control and is fairly common practice (e.g., Pietri et al., 2018; King, 2017; Purdie-Vaughns et al., 2008; Avery, 2004), it doesn't account for the pre-existing perceptions or exposure to a company that prospective employees often have when applying for jobs. Previous research has recommended different targeted recruitment strategies depending on the organizations' current diversity and diversity reputation (Avery & McKay, 2006; Windscheid et al., 2016). Thus, future research should also examine the effects of hierarchical versus numerical representation on minority jobseekers' organizational perceptions for real organizations with an established diversity reputation.

Building on that idea, future research should examine additional mechanisms that may explain and differentiate the effect of hierarchical representation on perceptions of organizational identity-safety from numerical representation. A key contribution from this study, the replication of King's (2017) finding, showed that both numerical and hierarchical representation may promote organizational identity-safety perceptions for prospective URM employees by reducing their concerns of tokenization. It is possible that including minority employees in organizational leadership may not only signal that URM will not be tokenized, but that they will also be provided with additional opportunities for advancement within the company (Chung & Harmon, 1999). Future research should test this idea directly.

Finally, a third limitation to this study is the examination of race without considering how the other intersecting identities that jobseekers possess may further influence their reactions to and the efficacy of targeted recruitment strategies. Although the focus of this study was the recruitment of Black applicants, recent findings from Chaney, Sanchez, and Remedios (2018) would suggest that Black employees in an organization's leadership may also signal identity-safety for other similarly stereotyped groups who are underrepresented in management stereotyped minorities, such as White women (Center for American Progress, 2018). Furthermore, the availability of relatable leadership personnel may strengthen the effect of Black employees in leadership on other minority job applicant's organizational perceptions. Future research should take an intersectional approach to test the efficacy of hierarchical representation as an identity-safety cue and possible recruitment strategy.

CONCLUSION

The increasingly diverse American population steadily leads more attention and concern to the severe underrepresentation of minorities in management and professional positions (Ortman & Guarneri, 2009; Department of Professional Employees, 2015). The lack of diversity within a company is not only harmful to organizations that miss out on the benefits of diversity (Gonzalez & Denisi, 2009; McLeod & Lobel, 1992; King 2017), but also to racial and ethnic minority Americans who lose the benefits of White-collar jobs (see Cox, 1994). While the organizational diversity literature has repeatedly shown “diversity attracts diversity,” the reality of many targeted recruitment strategies is that their efficacy and application rely on organization’s already maintaining a diverse employee body. To create more diverse organizations, researchers and practioners alike must find ways in which to signal a value of diversity when there isn’t much physical evidence to speak for itself.

APPENDIX A: TABLES

Table 1. Variable means, standard deviations, reliability, and intercorrelations

Variable	M (SD)	1	2	3	4	5	6
1. Age	36.36 (10.36)	(α)					
2. Gender	N/A	.10*	(α)				
3. Anticipated Tokenism	4.12 (1.01)	.04	.10	(.74)			
4. Trust & Comfort	4.89 (1.12)	-.01	.02	-.52**	(.95)		
5. Affective Commitment	4.17 (1.03)	.03	.01	-.45**	.79**	(.84)	
6. Organizational Attraction	5.07 (1.21)	.02	-.01	-.43**	.84**	.72**	(.95)

*Correlation is significant at .05 level

**Correlation is significant at .01 level

APPENDIX B: FIGURES

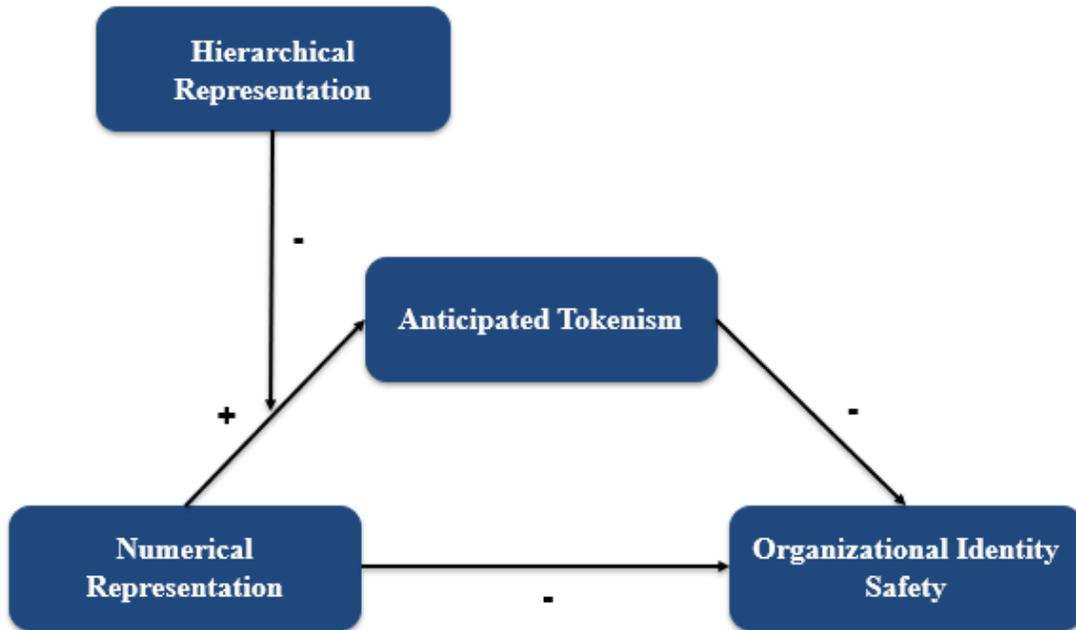


Figure 1. Proposed moderated mediation model testing the moderating effect of Hierarchical Representation on the indirect effect of Numerical Representation on Organizational Identity Safety via Anticipated Tokenism.

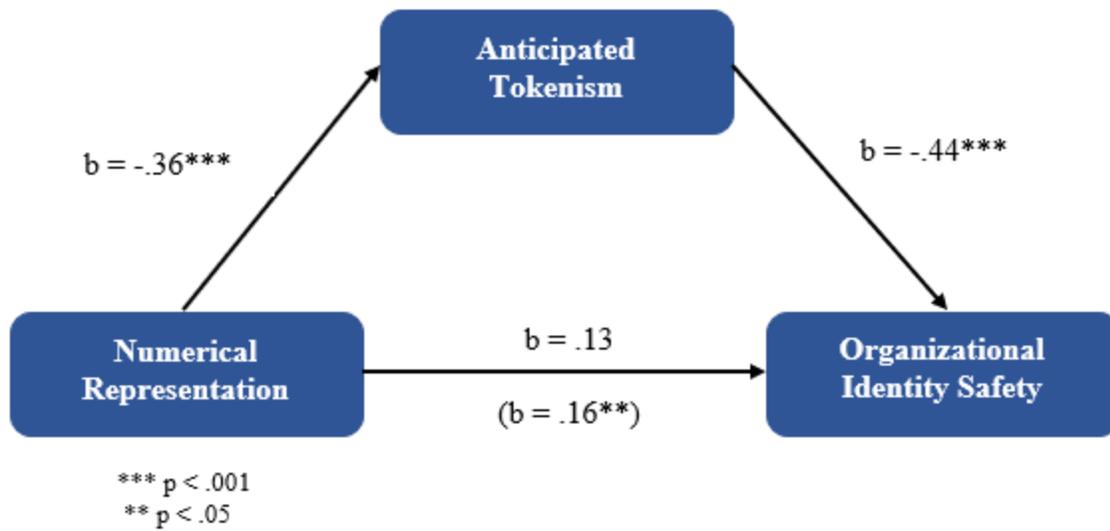
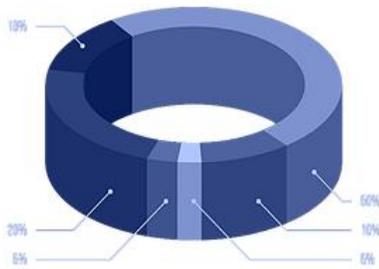
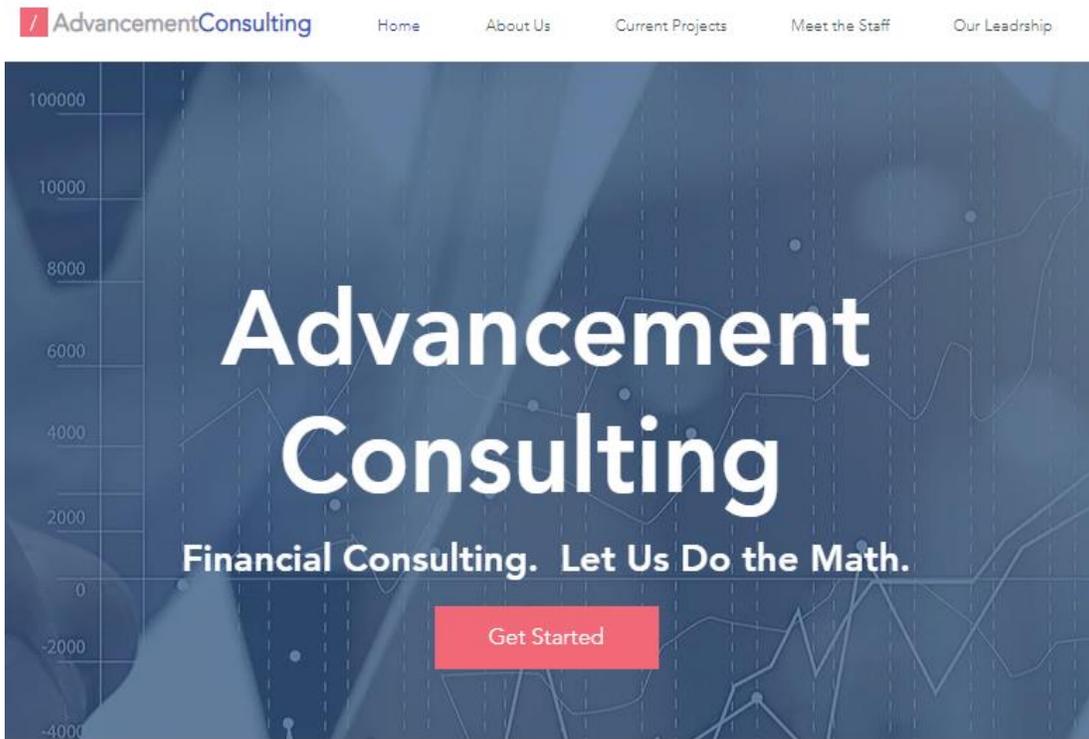


Figure 2. Simple mediation model testing the indirect effect of numerical representation on Organizational Identity Safety via Anticipated Tokenism. The direct effect of minority representation is shown outside of the parenthesis and the indirect effect is shown within the parenthesis.



OUR SERVICES

We are a firm of financial experts working with development finance institutions across the United States and Canada aimed at providing data-driven insights and customized advisory services to help our clients realize their full potential as catalysts for development, trade, and economic growth.

Figure 3. The fictitious website homepage.



About Us

Advancement Consulting - **Personalized & Informed Financial Consulting**

Although individual and organizational financial needs can vary widely, any entity handling money stands to benefit from having a financial consulting executive on board. Perhaps you are experiencing a growth spurt, or maybe you have decided to grow with an acquisition, or are about to embark on a new systems conversion. Maybe you're not quite sure what your financial needs are yet. Whether we're customizing consulting services for a specific need or helping you to identify areas where you might need some support - we've got your back.

Need more details? Contact us

We are here to assist. Contact us by phone, email or via our Social Media channels.

[Contact Us](#)

Figure 4. The fictitious website “About Us” page which describes the companies’ services.

“Current Projects” Webpage



Still not sure how we can help you?
Take a look at some of our current projects to get a better idea.



Facilitating investments in climate resilient infrastructure.



Increasing National Housing Organization sustainability.

Need more details? Contact us

We are here to assist. Contact us by phone, email or via our Social Media channels.

Contact Us

Figure 5. The fictitious website “Current Project” page which describes the companies’ current work.

Meet the Staff

We know that any organization is only as good as the people who run it.
Because we want the best for you, we only hire the best.

[Get to know more about the faces by the services](#)



Figure 6. The fictitious website “Meet the Staff” page depicting low numerical representation.

Meet the Staff

We know that any organization is only as good as the people who run it.
Because we want the best for you, we only hire the best.

[Get to know more about the faces by the services](#)



Figure 7. The fictitious website “Meet the Staff” page depicting high numerical representation.

Meet Our Leadership

President - Anthony J. Weber



Anthony is a leading expert on financial consulting around the world. With nearly three decades of experience, he has extensive knowledge and experience with the challenges and opportunities faced by financial institutions working to catalyze economic growth. A pioneering thinker on issues such as climate finance, Anthony is a sought after speaker and facilitator at international workshops and conferences, and has been the Conference Chairman for the Annual Global Convention on Developing Export Credit since 2001.

Contact Me

Vice President - Daniel M. Richards



As the prior Director at International Financial Consulting, Daniel has helped to lead Advancement Consulting for nearly 15 years. Daniel's expertise in business development and marketing initiatives, as well as his extensive experience in public policy related to economic development and international trade and investment, has made him widely renowned in the finance community. In addition to his Vice Presidency, he also serves as the Director of International Development at Trade & Invest Inc.

Contact Me

Figure 8. The fictitious website “Meet our Leadership” page depicting no hierarchical representation

Meet Our Leadership

President - Anthony J. Weber



Anthony is a leading expert on financial consulting around the world. With nearly three decades of experience, he has extensive knowledge and experience with the challenges and opportunities faced by financial institutions working to catalyze economic growth. A pioneering thinker on issues such as climate finance, Anthony is a sought after speaker and facilitator at international workshops and conferences, and has been the Conference Chairman for the Annual Global Convention on Developing Export Credit since 2001.

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Contact Me

Figure 9. The fictitious website “Meet our Leadership” page depicting hierarchical representation

APPENDIX C: MATERIALS

Subjective Experience of Tokenism Scale

(7-Point likert scale; from 1, strongly disagree, to 7, strongly agree)

Envision working at Advancement Consulting and answer the following:

1. People at this company would look at me as a representative of all people of my race
2. I would feel that I am a 'token' representative of my race
3. I would feel that I have to represent the perspective of my race
4. I would have to explain the perspective of my race to others
5. I would often feel accepted as a person (reverse coded)
6. I would often spend social and leisure time with my colleagues (reverse coded)
7. I would often discuss general topics such as politics with my colleagues (reverse coded)

Adapted from:

King, E. B., Hebl, M. R., George, J. M., & Matusik, S. F. (2009). Understanding tokenism: Antecedents and consequences of a psychological climate of gender inequity. *Journal of Management*.

Trust and Comfort Toward the Company Setting
(7-Point likert scale; from 1, strongly disagree, to 7, strongly agree)

Envision working at Advancement Consulting and answer the following:

1. I think I would like to work at a company like this.
2. I think I would like to work in a company that has similar hiring practices.
3. I think I would like to work under the supervision of people with similar values as the staff.
4. I think I could “be myself” at this company.
5. I think I would be willing to put in extra effort if my supervisor asked me to.
6. I think my colleagues at this company would become my close personal friends.
7. I think I would be willing to put in a great deal of effort beyond that normally expected in order to help the company be successful.
8. I think I would be treated fairly by my supervisor.
9. I think I would trust the management to treat me fairly.
10. I think that my values and the values of this company are very similar.
11. I think that the work environment would inspire me to do the very best job that I can.

Purdie-Vaughns, V., Steele, C., Davies, P., Ditleman., R., & Crosby, J. (2008). Social identity contingencies: How diversity cues signal threat or safety for African Americans in mainstream institutions. *Journal of Personality and Social Psychology*, 94, 615-630.

Affective Commitment Scale

(7-Point likert scale; from 1, strongly disagree, to 7, strongly agree)

Envision working at Advancement Consulting and answer the following:

1. I would be very happy to spend the rest of my career at this company.
2. I would enjoy discussing this company with people outside of it
3. I would feel as if this company's problems were my own
4. I would easily become as attached to another organization as I am to this one (R)
5. I would not feel like 'part of the family' at this company (R)
6. I would not feel 'emotionally attached' to this company (R)
7. This company would have a great deal of personal meaning for me
8. I would not feel a strong sense of belonging at this company (R)

Adapted from:

Allen, N. J., & Meyer, J. P. (1990). The measurement and antecedents of affective, continuance and normative commitment to the organization. *Journal of occupational psychology*, 63(1), 1-18.

Organizational Attractiveness

(7-Point likert scale; from 1, strongly disagree, to 7, strongly agree)

Envision working at Advancement Consulting and answer the following:

General attractiveness

1. For me, this company would be a good place to work.
2. I would not be interested in this company except as a last resort
3. This company is attractive to me as a place for employment.
4. I am interested in learning more about this company.
5. A job at this company is very appealing to me.

Intentions to pursue

6. I would accept a job offer from this company.
7. I would make this company one of my first choices as an employer.
8. If this company invited me for a job interview, I would go.
9. I would exert a great deal of effort to work for this company.
10. I would recommend this company to a friend looking for a job.

Highhouse, S., Lievens, F., & Sinar, E. F. (2003). Measuring attraction to organizations.

Educational and Psychological Measurement, 63(6), 986-1001

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