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Effect of Black- or White-Sounding Name and Impact of Intergroup Contact with Black Individuals on Auditor Judgments

Vanessa J. Tijerina

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EFFECT OF BLACK- OR WHITE-SOUNDING NAME AND IMPACT OF INTERGROUP
CONTACT WITH BLACK INDIVIDUALS ON AUDITOR JUDGMENTS

Vanessa J. Tijerina

Dissertation

George Fox University

Newberg, Oregon

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A dissertation submitted to George Fox University in partial fulfillment of the requirements for
the degree of Doctor of Business Administration

Dr. Paul Shelton, Ph.D., Committee Chair

Dr. Janell Blunt, Ph.D., Committee Member

Dr. David Tucker, Ph.D., Committee Member



Dissertation Completion Approval
Doctor of Business Administration

Student Name: Vanessa Tijerina Student ID#: 1952615

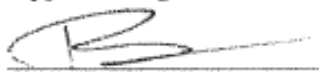
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**EFFECT OF BLACK- OR WHITE-SOUNDING NAME AND IMPACT
OF INTERGROUP CONTACT WITH BLACK INDIVIDUALS ON
AUDITOR JUDGMENTS**


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at George Fox University as a dissertation for the DBA degree.

Approval Signatures:


Chair

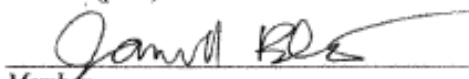
Date 5/3/2023

Dr. Paul Shelton, PhD
Chair (print)


Member

Date 5-5-2023

Dr. David Tucker, PhD
Member (print)


Member

Date 5-5-2023

Dr. Janell Blunt, PhD
Member (print)


Dr. Debby Thomas, PhD - Director, DBA Program

Date 5-5-2023

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Abstract

The accounting profession in the United States continues to reflect a gap in racial diversity, with the majority of accountants being white. Implicit racial bias results in discrimination in the U.S. today, specifically against Black individuals. Within accounting, the auditing specialty requires exercising professional judgment that could present opportunities for implicit racial bias to affect the financial statements. This study aims to fill gaps in the existing research by answering the following questions: 1) How does the race of the CFO affect the accounting judgments of auditors? 2) How does intergroup contact with Black individuals impact auditors' accounting judgments when working with a Black CFO? The participants included individuals in the U.S. who have a bachelor's degree in accounting, the majority of whom were CPAs with auditing experience. Participants completed a computerized experiment, responded to a short questionnaire, and answered manipulation, attention-check, and demographic questions. Data for the first hypothesis, based on the first research question, was analyzed using an independent sample t-test. H_1 was not supported. H_2 , analyzed using both Pearson and Spearman correlations, was also not supported. Supplemental analysis was conducted based on additional demographic data collected for the sample using multiple two-way ANOVAs. Post-hoc analysis using Scheffé post-hoc criterion for significance indicated a potential difference in the write-down amounts for non-Hispanic/Latino white participants compared to both Hispanic/Latino participants and participants of two or more races. Similar analysis indicated a potential difference in the write-down amounts for participants who spent their childhood in the Midwest compared to those who did not provide the location where they spent their childhood. While the study results do not provide support for the effect of Black- or white-sounding name or impact of intergroup contact on auditor judgments, the study was limited by a number of factors that may have impacted the

results. Future research should continue to explore the presence and impacts of implicit bias generally, and implicit racial bias specifically, in the auditing field.

Keywords: accounting, auditing, implicit racial bias, intergroup contact

Table of Contents

Acknowledgments.....	iii
Abstract	v
List of Figures	ix
List of Tables	x
Chapter 1: Introduction	1
Problem Statement	3
Study	4
Study Significance	5
Literature	7
Theoretical framework.....	7
Research Hypotheses	8
Definition of Terms.....	9
Study Limitations/Assumptions and Delimitations	11
Researcher's Perspective	12
Chapter 2: Literature Review	13
Implicit Social Cognition	13
Implicit memory.....	14
MODE model.....	17
Implicit Racial Bias in Business	22
Implicit Racial Bias in Accounting and Auditing	25
Intergroup Contact Theory.....	26
Intergroup Contact Theory in Business, Accounting, and Auditing.....	27
Chapter 3: Methodology	30
Research Design.....	30
Population and Sample	32
Experimental Procedure.....	33
Scale Measurement Instrument.....	34
Data Collection Procedures.....	37
Chapter 4: Results	39
Data Preparation.....	39
Sample Demographic and Descriptive Statistics	41
Assumption Testing	44
Analysis of Research Hypotheses.....	45

Hypothesis 1.....	45
Hypothesis 2.....	46
Supplemental Analysis.....	46
Chapter 5: Discussion	51
Findings.....	51
Limitations	52
Implications.....	53
For research/theory.	53
For the profession.	54
Recommendations for Future Research	55
Conclusion	55
References	57
Appendix A.....	75
CFO with a Black-Sounding Name Manipulation.....	75
CFO with a White-Sounding Name Manipulation	79
Questionnaire	83
Appendix B	86
Solicitation E-mail	86
Informed Consent.....	87
Appendix C	89
Institutional Review Board (IRB) Approval.....	89

List of Figures

Figure 1 – A Social Knowledge Structure	16
Figure 2 – Fazio’s Attitude-Behavior Process	18
Figure 3 – Scatterplot of Correlation Data.....	45

List of Tables

Table 1 – Summary of Studies Using CGF Scale	36
Table 2 – Summary of Usable Responses	40
Table 3 – Sample Descriptive Statistics – Gender	42
Table 4 – Sample Descriptive Statistics – Race/Ethnicity.....	42
Table 5 – Sample Descriptive Statistics – CPA License and Firm Position.....	43
Table 6 – Summary of Continuous Demographic Variables.....	43
Table 7 – Sample Descriptive Statistics – Age.....	47
Table 8 – Sample Descriptive Statistics – U.S. Region.....	47
Table 9 – Summary Results of Supplemental Analysis Tests	50

Chapter 1: Introduction

Despite seeing increases in the last year in the achievement of racial diversity at the Chief Financial Officer (CFO) level, the historical gap remains. For all but one year from 2004 to 2013, the nearly 700 Fortune 500 and S&P 500 companies employed four CFOs who were Black. The number increased from six to twelve from 2014 to 2020. After nearly doubling to 20 in 2021, 3% of CFO positions at these major companies are held by Black individuals (Crist Kolder Associates, 2021). The accounting profession as a whole also reflects a gap in diversity with a cause stemming from a long history of racism and bias against the Black community (Hammond, 2002, 2004). Until the 1960s, Black individuals in the United States (U.S.) were actively excluded from becoming Certified Public Accountants (CPAs) resulting in only 100 Black accountants achieving the CPA designation by 1965 (Hammond & Streeter, 1994). This gap in representation is significant when considered through the lens of intergroup contact theory, which suggests that intergroup prejudice can be reduced through contact among groups within specific, optimal conditions (Allport, 1954; Pettigrew, 1997). Without meaningful contact between individuals of different races, prejudice and implicit racial bias are less likely to be reduced (Aberson et al., 2004; Greenwald et al., 2022).

Unequal treatment of racial minorities exists in the U.S. today, despite a decline in explicit bias and open racism (Charlesworth & Banaji, 2022). While implicit racial bias is also declining (Charlesworth & Banaji, 2022), researchers have documented numerous instances where implicit racial bias results in discrimination in the U.S., specifically against Black individuals, in a general context (Banks et al., 2006; Berndt Rasmussen, 2020; Greenwald et al., 2022; Jost et al., 2009; McConnell & Leibold, 2001; Mock, 2020; Nix et al., 2017), in business (Bertrand & Mullainathan, 2004; Kline et al., 2021; Upton & Arrington, 2012), and in

accounting more specifically (Lewis, 2020; Moyes et al., 2000; Weisenfeld & Robinson-Backmon, 2001, 2007). Little evidence exists of studies examining the presence and influence of implicit racial bias in auditing, a specialty within accounting.

Auditors make numerous professional judgments throughout the course of their work with clients. Some examples include decisions regarding asset valuation, revenue and expense recognition, etc. These gray areas present opportunities for implicit bias to affect the financial statements. Because of the previously provided evidence of the effects of implicit racial bias toward Black individuals in the U.S., this study focuses on the context when an auditor is interacting with a Black CFO. This study aims to fill the gap in the research by answering the following questions:

1. How does the race of the CFO affect the accounting judgments of auditors?
2. How does intergroup contact with Black individuals impact auditors' accounting judgments when working with a Black CFO?

The participants of the study, individuals in the U.S. who have a bachelor's degree in accounting, the majority of whom were CPAs with auditing experience, completed a computerized experiment, responded to a short questionnaire, and answered manipulation, attention-check, and demographic questions. This study is significant because of the numerous potential negative impacts resulting from implicit racial bias, which will be discussed in the following sections.

In line with recent debates regarding the capitalization of the terms “Black” and “white” (Adedoyin, 2022; Eligon, 2020), the author has chosen to capitalize “Black” to acknowledge the shared culture and history of the group represented by this descriptor while not capitalizing white

due to a similar lack of shared culture and history, in addition to the use of “White” by supremacist groups.

Problem Statement

As in decades past, conversations about diversity and race continue today in the U.S. One stream of the conversation focuses on the gap in racial diversity, specifically related to Black Americans, in many professions, including accounting, and another on the unequal treatment of racial minorities (Banks et al., 2006; Bird et al., 2016; Hammond, 1997, 2002; Hammond & Streeter, 1994; Larcker & Tayan, 2020). After the civil rights movement, accounting firms began working to diversify their employee bases. A content analysis that reviewed the *Wall Street Journal* and *Harvard Business Review* for the years between 1963 and 1988, found that accounting firms initiated recruitment of Black accountants in the 1960s and 1970s, but decreased those efforts in the 1980s (Hammond, 1997, 2002). Despite these initial efforts, Black CPAs remain underrepresented today when compared to the overall U.S. population due in part to an absence of mentors, a lack of Black faculty, a lack of Black-owned businesses, educational disadvantages, and the challenges of conforming to white firm culture (Hammond, 2004). According to the 2021 Trends Report issued by the American Institute of Certified Public Accountants (AICPA), 23% of CPAs and 18% of partners in accounting/finance functions of U.S. CPA firms in 2020 were not white, with Black accountants representing 2% of the population of CPAs and partners (2021). However, in that same year, 41% of the U.S. population as a whole was not white, with Black individuals representing nearly 14% of the total population (United States Census Bureau, 2020). This difference represents the gap the accounting profession faces in achieving racial diversity with equal representation of racial makeup within the profession compared to the overall population. Within auditing specifically, one factor that

may contribute to this underrepresentation stems from the process of audit firm recruitment since companies often hire annually from the same universities, which tend to have lower Black representation among their accounting graduates (Bird et al., 2016).

Numerous studies have supported the presence of implicit racial bias in various aspects of business, specifically in decisions regarding hiring, performance appraisals, salary increases, and promotions (Bendick et al., 1994; Bertrand & Mullainathan, 2004; Castilla, 2008; Giuliano et al., 2009; Upton & Arrington, 2012). Other studies document the existence of racial discrimination within the accounting industry (Annisette, 2003; Annisette & Trivedi, 2013; Huang et al., 2016; James & Otsuka, 2009; Kim, 2004; Lewis, 2020; Miranti, 1988; Moyes et al., 2000; Sian, 2007; Weisenfeld & Robinson-Backmon, 2001, 2007) and the existence of general bias in auditing (Bazerman et al., 2002).

Study

Research discussed previously provides evidence of the existence of implicit racial bias in accounting and the impact of intergroup contact on implicit racial bias. This research aims to fill the gap by identifying both the effect of implicit racial bias and the impact of intergroup contact on auditors' judgments. One potential scenario involves an auditor interacting with a Black CFO. What effect does implicit racial bias have in this setting? How does intergroup contact impact this scenario? This study specifically examines the auditor-client scenario where the client is a CFO who has either a white-sounding name or a Black-sounding name.

This study used a computerized laboratory experiment, similar to one used by Nöteberg and Hunton (2005), to measure the difference in the dollar amount of auditors' judgments depending on the difference in the race of the CFO. Participants read a vignette about a fictitious company, made an initial judgment about the write-down amount (the amount by which the asset

balance should be reduced), read explanations provided by the CFO about why the asset balance should not be reduced, and made a final determination of the appropriate write-down amount. Some participants received explanations from a CFO with a white-sounding name while others reviewed explanations from a CFO with a Black-sounding name. The research also used the Cross Group Friendship (CGF) scale similar to one developed by Turner et al. (2007, Study 3) to measure the extent of participants' intergroup contact with Black individuals.

Participants included individuals with a bachelor's degree in accounting, the majority of whom were also CPAs with full-time auditing experience. These participants were primarily recruited from audit firms, many located within central Indiana, although some firms also have offices in other parts of the U.S. Additionally, participants were recruited from CPA organizations and through social media and personal networks. Participants completed the experiment, CGF scale, and demographic and manipulation check questions electronically.

For the first research question assessing the effect of the CFO race on the judgment of auditors, the independent variable is the client (CFO) race (based on whether the CFO had a white-sounding name or a Black-sounding name) and the dependent variable is the mean of the difference between the participants' initial and final write-down amounts in response to the vignette. The variables for the second research question, examining the impact of intergroup contact on the judgments of auditors, are the level of intergroup contact the participants have with Black individuals (the mean of the CGF scale) and the mean difference between the participants' initial and final write-down amounts in response to the vignette.

Study Significance

In addition to filling a gap in the research, this study is significant because of the potential impacts stemming from implicit racial bias. If implicit racial bias influences auditor

judgments, financial statements may not be fairly presented, which means the information reported in the statements could differ from reality by a substantial amount. Additionally, the presence of implicit racial bias likely negatively affects the success of recruiting and retaining Black accountants (Lewis, 2020; Moyes et al., 2000; Weisenfeld & Robinson-Backmon, 2001, 2007) which further limits opportunities for bias reduction resulting from intergroup contact (Allport, 1954). The AICPA has recognized the need for racial diversity within the profession and has implemented strategies to increase diversification (American Institute of Certified Public Accountants, 2019). Implicit racial bias could be thwarting those plans. Finally, researchers have been increasingly studying the use of artificial intelligence in the accounting field, including in the auditing area (Alles & Gray, 2019; EY, 2018; Gotthardt et al., 2020; Zhang, 2019). Because of the high percentage of accounting processes that could be automated with further advances in machine learning and artificial intelligence, Frey and Osborne (2017) estimated a 94% probability that automation will replace accountants and auditors. On the surface, it may seem that automation and computerization is a cure for implicit racial bias. However, a significant amount of research sheds light on the bias that frequently hides in the algorithms humans create (Benjamin, 2019; D'Rosario & D'Rosario, 2020; Datta et al., 2014; Dwork et al., 2012; EY, 2018; Goldenfein, 2019; C. C. Miller, 2015; Miller, 2019; Noble, 2018; O'Neil, 2016). While algorithms do not eliminate the need for human judgment, they often decrease the amount of judgment needed and identify which situations require this human intervention. When the rules driving the algorithm are biased, the end results are also biased. For example, automated systems built on algorithms may not collect and use racial information. However, if location information is used, that can introduce bias since people often live in racially similar locales (D'Rosario &

D'Rosario, 2020). It is important to understand the level of implicit racial bias within the auditing field before biased algorithms are inadvertently created.

Evidence suggests that implicit racial bias can be decreased with repeated and sustained interventions that teach strategies such as stereotype replacement, counter-stereotypic imaging, individuation, perspective taking, and increasing opportunities for contact (Devine et al., 2012; Shook & Fazio, 2008). In addition, discriminatory behavior resulting from implicit racial bias may be reduced through the use of preventative measures such as decision blinding and discretion elimination (Greenwald et al., 2022). However, acknowledgment of the existence of the bias is essential before steps can be taken to decrease the bias.

Literature

Theoretical framework.

Implicit social cognition, also called implicit bias, asserts that past experiences impact future behavior, even though those past experiences are not able to be recalled (Greenwald & Banaji, 1995). This strand of implicit social cognition examines how behavior is impacted by implicit memory as well as by mental associations (constructs) unavoidably obtained from one's cultural environment, which include widely acknowledged prejudice and stereotypes (Greenwald et al., 2022). Another strand of implicit social cognition focuses on the ways in which attitudes guide behavior (Fazio, 1986, 1990). Although the mechanisms vary, both strands agree that some combination of implicit racial attitudes, stereotypes, and/or past experiences impact behavior resulting in implicit racial bias.

Previous research has established the presence of implicit bias in numerous situations regarding race (Banks et al., 2006; Bendick et al., 1994; Castilla, 2008; Hehman et al., 2018; Upton & Arrington, 2012; Weisenfeld & Robinson-Backmon, 2001, 2007). This racial bias has

been found in business in general and in accounting specifically. It may be that implicit racial bias is also present in the auditing field.

Negative past experiences do not always lead to negative implicit bias, as supported by intergroup contact theory. As was discussed previously, accounting has a long history of being a primarily white profession and remains so despite attempts toward racial diversity. The gap in racial diversity in the profession reduces opportunities for the positive impacts of intergroup contact on implicit racial bias.

Research Hypotheses

This study evaluates the first hypothesis, responding to the first research question examining the effect of CFO race on auditors' judgments, based on the theory of implicit social cognition. Previous studies provide evidence for linking implicit racial bias with biased behavior (Berndt Rasmussen, 2020; Dovidio et al., 2002; Hehman et al., 2018). Also, these studies provide evidence of the effect of implicit racial bias toward Black individuals in decisions when they are not in a position of authority (i.e. hiring, performance evaluations, etc.). While auditors are not necessarily in a position of authority during an audit, when there is a disagreement with the client manager, it is the auditor's responsibility to either stand their ground or acquiesce to the client's wishes. Given this pattern of bias, it is reasonable to assume that implicit racial bias may be a factor in situations where the client manager is Black. This link provides the foundation for the first hypothesis:

H₀: Auditors will amend their judgment by the same amount when considering client-provided explanations offered by a CFO with a Black-sounding name relative to a CFO with a white-sounding name.

H₁: Auditors will amend their judgment by a lesser amount when considering client-provided explanations offered by a CFO with a Black-sounding name relative to a CFO with a white-sounding name.

This study evaluates the second hypothesis, responding to the second research question evaluating the impact of intergroup contact with Black individuals on auditors' judgments when working with a Black CFO, based on intergroup contact theory. Previous studies provide evidence that increased intergroup contact is related to decreased prejudice and implicit bias (Aberson et al., 2004; Pettigrew & Tropp, 2006). This relationship provides the foundation for the second hypothesis:

H₀: Auditors who have less intergroup contact with Black individuals will amend their judgment by the same amount when considering client-provided explanations offered by a CFO with a Black-sounding name relative to auditors who have more intergroup contact with Black individuals.

H₂: Auditors who have less intergroup contact with Black individuals will amend their judgment by a lesser amount when considering client-provided explanations offered by a CFO with a Black-sounding name relative to auditors who have more intergroup contact with Black individuals.

Definition of Terms

The following terms require definition to provide context for this study. These definitions are drawn from the relevant literature.

Attitude. An attitude is “an association between a given object and a given summary evaluation of the object” (Fazio, 1995, p. 247). It is also defined as “a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the

individual's response to all objects and situations with which it is related" (Allport, 1935, p. 810).

Attitude accessibility. Fazio (1995) defines attitude accessibility as "the likelihood that the attitude will be activated from memory automatically when the object is encountered" (p. 248). It is dependent on the strength of the association between the attitude and the attitude object.

Deliberative. To be deliberative "requires reflection and the active retrieval or construction and consideration of attitudes" (Fazio, 1990, p. 103).

Evaluation. An evaluation is a broad spectrum that could range from "a very 'hot' affect to a 'colder' more analytical judgment of one's favorability or unfavorability toward the object" (Fazio, 1995, p. 248).

Fairly presented. Fairly presented is an accounting term indicating that the financial statements are substantially correct.

Implicit. An implicit attitude or construct is one that is measured indirectly (Fazio & Olson, 2003; Greenwald & Banaji, 2017).

Implicit bias. See implicit social cognition.

Implicit social cognition. Also called implicit bias, implicit social cognition asserts that past experiences impact future behavior, even though those past experiences are not able to be recalled (Greenwald & Banaji, 1995).

Indirect measure. Greenwald and Lai (2020) define an indirect measure as one where the discriminative response is not part of the task definition (is excluded from the instructions given to the subjects).

Intergroup contact theory. Intergroup contact theory suggests that intergroup prejudice can be reduced through contact among groups within specific, optimal conditions (Allport, 1954).

Object. Object is a broad term that encompasses “social issues, categories of situations, categories of people, and specific individuals, as well as physical objects” (Fazio, 1995, p. 248).

Racial bias. Greenwald and Banaji (1995) describe racial bias as either explicit (known and/or acknowledged) or implicit (involuntary and subconscious). It occurs when individuals’ attitudes and stereotypes regarding race affect their thoughts, decisions, and/or actions.

Spontaneous. A spontaneous attitude is one that is activated “effortlessly and inescapably” (Fazio, 1995, p. 248).

Write-down amount. The amount by which the balance of an asset should be reduced to accurately reflect the asset’s value is the write-down amount.

Study Limitations/Assumptions and Delimitations

The primary delimitations of this study result from focusing the research questions on an auditing context. While it is possible that implicit racial bias is present in other disciplines within accounting, this research does not seek to identify this bias in those areas.

A number of factors limited the scope of the study or affected the outcome. The voluntary response sampling format resulted in approximately one-third of the participants residing in the same geographic area (the U.S. Midwest), which could have impacted the results based on the bias of crowds theory (Payne et al., 2017). Additionally, the sample size was small due primarily to the large number of individuals who completed the study but did not provide final informed consent to use their data or failed the attention-check question. The researcher attempted to mitigate this limitation by contacting a large number of firms and CPA organizations and by

using social media channels and group e-mails to recruit potential participants and by offering eligible individuals an incentive to participate. This incentive factor created an additional limitation since individuals motivated by the incentive were most likely to complete the study. Finally, because this study only explores the presence of implicit racial bias of CPAs toward Black CFOs within the auditing field in the U.S., it cannot be generalized outside of this limited field and direction.

Researcher's Perspective

The researcher is a white female who grew up primarily in a rural environment in northwest Ohio. Although she had some interactions with non-white individuals in her home (her parents were foster parents) and in her local public school, she absorbed and unknowingly adopted the majority white cultural perspective that surrounded her. Her experience at a predominantly white university did little to broaden her views. It was not until the researcher was in a dating relationship with her now husband, a third-generation Mexican American, that she began to understand the reality of implicit racial bias and its impact on non-white citizens in the U.S. The more she became aware of the systemic racial injustice in U.S. society, the more she wanted to understand its breadth, its causes, and the ways to combat it. The researcher's assumption based on her own experience and her research of the literature is that implicit racial bias is deeply ingrained into many aspects of American society, including in the field of auditing.

Chapter 2: Literature Review

The accounting profession's gap in racial diversity is especially visible among Black individuals in upper levels of management in the U.S. (Crist Kolder Associates, 2021). At the same time, Black individuals in the U.S. experience the impacts of implicit racial bias, both in business (Bendick et al., 1994; Bertrand & Mullainathan, 2004; Castilla, 2008; Giuliano et al., 2009; Upton & Arrington, 2012) and in accounting specifically (Lewis, 2020; Moyes et al., 2000; Weisenfeld & Robinson-Backmon, 2001, 2007). The gap in racial diversity further complicates the problem of implicit racial bias by limiting opportunities for interactions that could reduce the bias through intergroup contact (Allport, 1954; Pettigrew, 1997).

Built on the concepts of implicit social cognition, the basis for implicit racial bias, and intergroup contact theory, this research aims to study the effects of implicit racial bias and the impacts of intergroup contact theory on auditors' judgments. The following literature review details the origin and definition of implicit social cognition and support for how it affects human behavior and judgments in general, in the business field, and in accounting. The focus then shifts to the history, origin, and general support for intergroup contact theory. Prior research applying intergroup contact theory to business, although scarce, is discussed. No previous research has examined intergroup contact theory in the realm of accounting or auditing.

Implicit Social Cognition

Implicit social cognition, the basis for implicit racial bias, involves “traces of past experience [that] affect some performance, even though the influential earlier experience is not remembered in the usual sense—that is, it is unavailable to self-report or introspection” (Greenwald & Banaji, 1995, pp. 4-5). Since the term was introduced in the mid-1990s, numerous research studies have provided support for the relationship between attitudes and stereotypes, of

which the individual may be unaware, and corresponding social judgments and behavior (Greenwald & Lai, 2020). Multiple meanings of the term implicit exist depending on the way it is measured (Fazio & Olson, 2003; Hahn & Gawronski, 2018; Nosek et al., 2012; Payne & Gawronski, 2010). This study uses the definition advocated by Fazio and Olson (2003) and agreed upon by Greenwald and Banaji (2017), which highlights the importance that implicit constructs or attitudes are measured indirectly (versus directly) rather than measured as unconscious (versus conscious). Using the definitions of direct and indirect offered by Reingold and Merikle (1988), Greenwald and Lai (2020) assert that the “judgments of levels of evaluation” (p. 421) should be considered an indirect measure of attitude if the discriminative response is not part of the task definition (is excluded from the instructions given to the subjects). The concept of implicit racial bias flows from the research above. In this current study, the term implicit racial bias refers to racial bias that is measured indirectly, as defined above, regardless of the possessor’s awareness.

Researchers have taken different approaches to studying implicit social cognition (for history, see Payne & Gawronski, 2010). The two most prominent strands are based on memory (Greenwald & Banaji, 1995) and attitudes (Fazio, 1986, 1990).

Implicit memory.

Based on the work of Jacoby (1982) and Jacoby and Witherspoon (1982), Graf and Schacter (1985) developed the term implicit memory, which is “revealed when performance on a task is facilitated in the absence of conscious recollection” (p. 501). Greenwald and Banaji (1995) used this definition of implicit memory as the foundation for implicit cognition, which proposes that traces of memories and experiences guide behavior by influencing attitudes and stereotypes. One illustration of how implicit memory works is that individuals are more likely to

complete word stems or word fragments with words from a list to which they were exposed (even without being prompted to remember the words) than with equally likely words not on the list. The prior experience impacts their responses without their awareness or, often, their ability to recall the words from the list. Implicit cognition can be applied to various contexts using the following template: an unidentified or incorrectly identified fragment of a past experience is the construct that leads to the category of responses influenced by the construct. In general, implicit bias is the result of mental associations (constructs) unavoidably obtained from one's cultural environment, which include widely acknowledged prejudice and stereotypes (Greenwald et al., 2022). In this research, the implicit construct is racial bias and the affected response is the auditor judgment.

To understand how implicit cognition influences behavior, three terms must be defined: concept, strength of association, and concept activation. A concept can represent persons, groups, or attributes (nodes or ovals in Figure 1). These concepts may or may not be associated with one another (lines in Figure 1). Those that are associated will possess different strengths of association, which define the likelihood that one concept will activate another (described as concept activation). Concepts can be activated through external stimuli or through interaction with other active concepts. A stronger association between concepts will increase the likelihood that one concept will activate another (Greenwald et al., 2002). Figure 1 represents these relationships graphically.

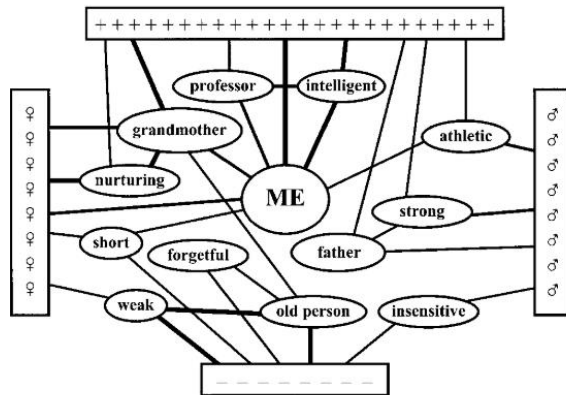
Figure 1.**A Social Knowledge Structure**

Figure 1. A social knowledge structure. This structure includes associations that correspond to social psychological constructs of self-concept, self-esteem, stereotype, and attitude in the psyche of an elderly female academic. Nodes (ovals) represent concepts and links (lines) represent associations. Line thickness represents strength of association. The *self-concept* includes links of the ME node to concepts that include roles (professor, grandmother) and trait attributes (intelligent, athletic); *self-esteem* is the collection of associations—either direct or mediated through components of the self-concept—of the ME node to valence (+ + + or - - -); *stereotypes* are associations of group concepts such as old person, grandmother, professor, male (♂ ♂ ♂), and female (♀ ♀ ♀) with attribute concepts; and *attitude* is the collection of links, either direct or mediated via components of a stereotype, that connect a social concept to valence.

From Greenwald et al. (2002)

Numerous studies support the relationship between implicit cognition (attitudes and stereotypes based on traces of memories) and behavior (Dovidio et al., 2002; Greenwald et al., 2003; Hehman et al., 2018). Dovidio et al. (2002) conducted an experiment with 40 white undergraduate students from a northeastern liberal arts college. Participants completed an activity to assess their implicit prejudice toward Black individuals. Later participants interacted with both white and Black individuals who were part of the experiment and completed an assessment of their interaction. The students' levels of implicit prejudice significantly predicted their self-assessed nonverbal friendliness and observers' levels of the white participants' perceived friendliness.

Greenwald et al. (2003) used a desktop virtual-reality simulation to test the differences in rapid responses to armed or unarmed Black or white individuals. Results indicated that racial stereotypes tied to implicit memories influenced the participants' abilities to correctly identify when a simulated Black character was armed versus unarmed (more often incorrectly assuming armed when unarmed). Results also suggested that participants more quickly associated simulated Black targets as being armed than armed white targets.

Green et al. (2007) studied the effect of implicit racial bias on treatment decisions made by physicians. The participants, 287 internal medicine and emergency medicine residents, were randomly assigned to respond to a vignette describing a medical condition presented by either a Black or white patient. The participant then determined whether or not they would recommend a particular treatment option for the patient. Overall, participants dealing with a white patient were more likely to recommend the correct treatment option compared to participants dealing with a Black patient. Participants also completed three Implicit Association Tests (IATs: Greenwald et al., 1998) to measure their implicit preference for white individuals compared to Black individuals. Results suggest that physicians who showed greater preference for white skin color on the IAT were more likely to make a biased decision in favor of white patients or to the detriment of Black patients.

MODE model.

Fazio (1990) developed the Motivation and Opportunity as Determinants (MODE) model to answer the question of how attitudes guide behavior. The MODE model is a dual-process theory that suggests that one major factor linking attitudes to behavior is whether the process is spontaneous or deliberative. A spontaneous, or automatic, process means the attitude is unavoidably activated without effort (Fazio, 1995). A deliberative process, on the other hand, is

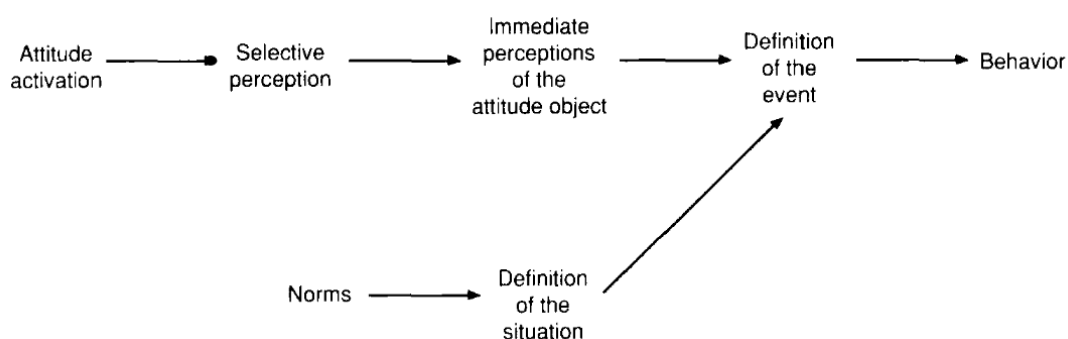
one that requires effort to consider the attitude that is either recalled or formulated (Fazio, 1990).

The MODE model asserts that individuals will follow the deliberative process when they have the motivation and the opportunity to deliberate about their behavior. Attitudes will be more likely to influence behavior when the process is spontaneous rather than deliberative, since contemplating behavior brings in more factors than only the underlying attitude.

The idea of attitudes guiding behavior goes back to Allport (1935) who defines an attitude as “a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual’s response to all objects and situations with which it is related” (p. 810). Fazio (1995) defines an attitude as “an association between a given object and a given summary evaluation of the object” (p. 247). He further describes objects as issues, situations, people, individuals, and physical objects, while object evaluations encompass a broad spectrum ranging from a passionately favorable feeling to an intensely unfavorable analysis toward the object.

Figure 2.

Fazio’s (1986) Attitude-Behavior Process



The MODE model builds on Fazio’s (1986) model of the attitude-behavior process (Figure 2). The attitude-behavior process begins when an individual encounters an attitude object. In the case of implicit racial bias, the attitude object could be an individual of a different

race or ethnicity. The first step of the process commences when an attitude regarding the attitude object is activated. The activated attitude will then lead to selective perception, the second step. In this step, the attitude filters the object to arrive at a perception. Selective perception then leads to the biased perception of the attitude object. This could be positive, negative, or neutral depending on the attitude that was activated and selectively perceived in the first two steps. In the fourth step, the definition of the event, the individual makes a determination about the situation which may be influenced by the immediate perception of the object as well as by normative guidelines, depending upon the strength of each. Finally, the definition of the event will dictate the behavior, with positive perceptions of the attitude object leading to approach behaviors and negative perceptions leading to avoidance behaviors.

Attitude accessibility is necessary at both the selective perception and event definition stages if an attitude is going to influence behavior (Fazio, 1995). Upon encountering an object, attitude accessibility refers to the probability that an attitude will be effortlessly retrieved from memory. The more accessible the attitude is, the more likely the attitude will bias the immediate perceptions of the attitude object and will lead to the next step of the process. In addition, the strength of the attitude, or the object-evaluation association in memory, is also important. The stronger the attitude association is, the more likely it is to bias the definition of the event and lead to biased behavior.

The MODE model posits that the attitude-behavior process will proceed as above unless the individual has both the motivation and the opportunity to deliberate regarding their behavior (Fazio, 1990). In these cases, deliberation will allow factors other than attitudes to influence behavior. One factor that may increase motivation to deliberate is the perceived importance of the behavioral decision, with higher levels of importance leading to greater motivation to

deliberate. In addition to motivation, the individual must also have the opportunity to deliberate. If an individual is rushed to respond or to act, he/she will not have adequate time to deliberate. Without both the motivation and opportunity to deliberate, the spontaneous attitude-behavior process will prevail.

Numerous studies have tested and provided support for the MODE model related to racial attitudes (Fazio et al., 1995; Jackson, 1997; Schuette & Fazio, 1995; Towles-Schwen & Fazio, 2006). In one study, Fazio et al. (1995) used a priming procedure involving photographs of white and Black students along with positive or negative adjectives and the resulting response latencies to measure the automatically activated racial attitudes of the participants. The white students reacted more quickly in pairing the white faces to positive adjectives and the Black faces to negative adjectives than the other way around, indicating the presence of negative attitudes toward black skin color. Upon completion of the study, participants interacted with a Black researcher who then rated the interaction based on perceived student friendliness and interest in psychology. White students who showed more negative attitudes toward black skin color during the study task also were rated as less friendly by the Black researcher. The results of this study provide support for the spontaneous process of the MODE model since the task did not provide opportunity or motivation for participants to deliberate about their behavior. In a related study, Fazio et al. (1995) assessed the deliberative process by examining the motivation to control prejudiced reactions. In addition to completing a priming task similar to the one in the previous study, students also completed a 17-item scale to assess their motivation to control seemingly prejudice responses and the Modern Racism Scale (MRS; McConahay et al., 1981), which is a self-report measure of explicit racial attitudes. The response latencies from the priming task were used to calculate automatically activated attitudes as in the previous study. These scores were

then analyzed along with the results of the motivation scale and the MRS score to determine the effect motivation to control prejudice responses had on the automatically activated attitude in predicting behavior (based on the MRS score). Results indicated support for the deliberative process of the MODE model as students who had automatically activated negative attitudes and high motivation to control displayed lower scores on the MRS.

Schuette and Fazio (1995) conducted an experiment where 222 undergraduate students completed a survey regarding their attitudes toward various public issues, including the death penalty. Participants then evaluated two studies regarding the death penalty, one that was pro-death penalty and one that was anti-death penalty. Some participants were given additional information meant to induce a high fear of invalidity (to prompt motivation to deliberate), while others were not. After reading both studies, participants rated the studies for how well they were conducted and how convincing the results were. The findings supported the MODE model regarding how attitudes guide behavior, specifically the need for strong attitude accessibility and the necessity of motivation to lead to deliberate processing. In addition, findings reiterated that individuals do not need to be aware of an attitude in order for it to influence their behavior.

Jackson (1997) built on Schuette and Fazio (1995) by including race as a variable and found support for the MODE model in the context of racial bias. Participants completed a word-completion task to evaluate their attitudes toward Black individuals. Participants then read and evaluated an essay written by a Black student. Jackson examined the relationship between the participants' attitudes toward Black individuals and their evaluation of the essay. Jackson's findings indicate that the white students' automatically activated attitudes toward Black individuals affected subsequent judgments and behaviors.

Towles-Schwen and Fazio (2006) tested the MODE model by examining roommate relationships of randomly paired, interracial, freshman residential students. Results of their first study indicated that interracial roommate pairs often interact together less and last for a shorter duration than those who are randomly paired with a student of the same race. The second study examined the automatically activated racial attitudes of white students to determine if they were related to the results from study one. In support of the MODE model, the researchers found that the automatically activated racial attitudes of white students predicted the longevity of the relationship with their Black roommate.

Implicit Racial Bias in Business

The literature on implicit social cognition provides a theoretical foundation for the ways attitudes, experiences, and stereotypes interact as implicit bias to influence behavior. A significant number of studies support the existence of implicit racial bias in business. Some research focuses on implicit racial bias in hiring practices (Agan & Starr, 2018; Bendick et al., 1994; Bertrand & Mullainathan, 2004; Giuliano et al., 2009; Johnson et al., 1995; Kline et al., 2021; Nunley et al., 2015; Quillian et al., 2017) while other research looks at implicit racial bias in evaluations and merit-based rewards (Castilla, 2008; Upton & Arrington, 2012). Most of the research examining the impacts of implicit racial bias or discrimination in the accounting field are in an international context (Annisette, 2003; Annisette & Trivedi, 2013; Huang et al., 2016; James & Otsuka, 2009; Kim, 2004; Sian, 2007). There is scant research dedicated to implicit racial bias in the accounting field in the U.S. (Lewis, 2020; Moyes et al., 2000; Weisenfeld & Robinson-Backmon, 2001, 2007) and none was identified that is specific to auditing.

Numerous studies provide evidence of implicit racial bias in hiring practices. Bendick et al. (1994) conducted an experiment to determine the difference in treatment between minority

and nonminority job applications. Their findings indicate that Black applicants received less favorable treatment compared to nonminority applicants more than 20% of the time. Specifically, of 149 matched pairs of test applicants (one white and one Black) where both hand-delivered resumes showing equivalent qualifications and experience, the white applicant received a job offer 46.9% of the time compared to 11.3% for their Black counterpart. In a similar study, Bertrand and Mullainathan (2004) responded to job advertisements by sending fabricated resumes with randomly assigned Black- or white-sounding names. They found that resumes with white-sounding names received calls for interviews 50% more than Black-sounding names. These findings were true across occupation, industry, and employer size. Nunley, et al. (2015) explored the effect of racial discrimination in the labor market for recent graduates. They found that white applicants received 14% more interview requests compared to Black applicants. In their study regarding the impact of ban the box hiring policies, Agan and Starr (2018) found that Black applicants received 7% fewer callbacks compared to white applicants prior to the implementation of ban the box policies. This gap increased to 43% after ban the box policy adoption. Quillian, Pager, Hexel, and Midtbøen (2017) conducted a meta-analysis of field experiments investigating racial discrimination in hiring in the U.S. Results of 24 studies conducted since 1989 indicate that white applicants receive an average of 36% more callbacks than Black applicants, a number which has not declined over the 25-year period. Kline, Rose, and Walters (2021) performed a study similar to Bertrand and Mullainathan (2004). They found that employers are still significantly less likely to respond to applications with Black-sounding names compared to white-sounding names. While the 9% proportional contact gap is less than previous studies (Quillian et al., 2017), the 2.1 percentage point average contact gap between white and Black applicants is similar to results of other studies (Agan & Starr, 2018; Nunley et

al., 2015). Unlike the results of the Bertrand and Mullainathan (2004) study, a significant portion of the racial gap in the 2021 study was concentrated among the top 20% of discriminating firms, responsible for nearly 50% of the lost contacts for Black applicants. Giuliano et al. (2009) explored differences in hiring practices based on the race of the hiring manager. They found that nonblack managers (e.g., those who identify as white, Hispanic, and Asian) hire more white and fewer Black employees than do Black managers. They also found evidence that managerial discrimination may be partly responsible for these hiring differences.

While preparing to execute the research noted above, Kline et al. (2021) performed extensive research to compile a list of racially distinctive first names for their study. The names used in this current research, Tyrone for the Black-sounding name and Matthew for the white-sounding name, appear on their list. In addition, research by Butler and Homola (2017) provides empirical support for the practice of using racially distinctive names to signal race in experiments.

Other researchers focused on the impact of implicit racial bias on evaluations and merit-based rewards. Castilla (2008) found evidence that racial and gender bias negatively impact performance evaluation ratings as well as the resulting decisions regarding salary increases and promotions. This means that minorities and women must work harder to be perceived at the same level as white men and to receive similar salary increases. In a similar study, Upton and Arrington (2012) conducted a lab-based study of balanced scorecard evaluations and bonus allocations to determine the effect of both explicit and implicit racial attitudes on performance evaluations. They found the difference in evaluations was greater when a white manager outperformed a Black manager than when the managers were of the same race. However, the evaluation difference was smaller when a Black manager outperformed a white manager.

Implicit Racial Bias in Accounting and Auditing

Within accounting, the auditing field is especially replete with applications of auditor judgment. While planning to conduct an audit, the auditor makes numerous judgments regarding the likelihood that any part of the financial statements may be materially misstated, with the definition of “materially misstated” requiring judgment. Additional judgments are required when determining relevant audit tests to perform, appropriate samples sizes and types, interpretation of test results, etc. Adding to the complexity, many of the auditing standards designed to provide guidance include subjective terms such as “material” and “reasonable,” which further require judgment. Finally, auditors consult with the auditee company’s staff members to gain information needed to make their judgments and must determine how much to rely on the information received based on the auditor’s perceived judgment of the validity and reliability of the information. Bazerman et al. (2002) argues that this ambiguity is one factor that can lead to biased audit results.

Moyes et al. (2000) and Weisenfeld and Robinson-Backmon (2001, 2007) explored the impact of racial bias within the accounting profession. Black male and female accountants both perceive race discrimination in their workplace, including discrimination resulting in career advancement limitations, exclusion from the network and organizational culture/environment, and cultural stereotyping and bias. They also perceive discrimination related to types of assignments and to promotion opportunities. In his book *‘Counting Black and White Beans’*: *Critical Race Theory in Accounting*, Lewis (2020) retells a history of accounting and race and provides further examples of the impacts of implicit racial bias in accounting.

Little evidence exists of studies specifically examining racial bias within the auditing field. However, given the evidence for the existence of implicit racial bias in the U.S. in general,

within the business and accounting fields specifically, combined with the opportunity for bias within auditor judgments (Bazerman et al., 2002), it reasonably follows that implicit racial bias could influence auditor judgments. This evidence leads to the first hypothesis:

H₁: Auditors will amend their judgment by a lesser amount when considering client-provided explanations offered by a CFO with a Black-sounding name relative to a CFO with a white-sounding name.

Intergroup Contact Theory

Intergroup contact theory posits that prejudice can be reduced through positive interactions among individuals of different groups (Pettigrew, 1997). Based on work by Williams (1947), Allport (1954) developed the contact hypothesis, the basis for intergroup contact theory, and proposed four necessary conditions for this prejudice reduction: (1) individuals must be of equal status, (2) individuals must be working toward common goals, (3) contact should be encouraged by institutions and/or systems, and (4) contact should be cooperative. In the decades since, Pettigrew (1998) reformulated Allport's hypothesis by suggesting that long-term friendships between members of different groups is more effective at reducing prejudice than acquaintance-level relationships. Numerous researchers have expanded the boundaries of the theory and have tested its application to various types of groups, including individuals of different races (see meta-analyses for details; Paluck & Green, 2009; Paluck et al., 2019; Pettigrew & Tropp, 2006, 2008; Pettigrew et al., 2011). Results of multiple experiments and survey studies support intergroup contact theory in general (for review see: Paluck et al., 2019; Pettigrew & Tropp, 2006) but many do not find support for Allport's four requirements as proposed (Bertrand & Duflo, 2017; Pettigrew, 1998; Pettigrew & Tropp, 2006; Pettigrew et al., 2011). Other researchers have tied the impacts of intergroup contact beyond prejudice to include

implicit bias (Aberson et al., 2004; Greenwald et al., 2022). Aberson et al. (2004) found that white individuals who had close friendships with Black individuals had lower levels of implicit racial bias as measured by the IAT.

In a compelling field experiment regarding intergroup contact theory, the MODE model, and implicit attitudes, Shook and Fazio (2008) recruited randomly assigned pairs of white freshman students living with either a white or Black roommate. Students completed questionnaires to assess the quality of their roommate relationship and priming procedures to assess their implicit attitudes toward Black individuals. Results indicated that, for white students, living with a Black roommate increased positive attitudes toward Black individuals.

Recent criticisms of intergroup contact theory have centered on the correlational nature of the early experiments (Greenwald et al., 2022; Paluck et al., 2019). While the studies support the relationship between intergroup contact and reduced bias, these criticisms are especially important as policy makers attempt to use intergroup contact theory as a basis for programs intended to decrease bias and prejudice among various groups. Although several experiments have been completed to determine the most effective types of intergroup contact to reduce bias and prejudice (Broockman & Kalla, 2016; Finseraas & Kotsadam, 2017; Scacco & Warren, 2018), more work is needed.

Intergroup Contact Theory in Business, Accounting, and Auditing

Research examining intergroup contact theory within a business context has varied in the selected outgroup (individuals of different races/ethnicities, ages, disability statuses, etc.) and location (U.S., Italy, Finland, etc.) (Boss, 2019; Choi & Jarrott, 2021; Di Bernardo et al., 2021; Fasbender & Wang, 2017; Koschate et al., 2012; Liebkind et al., 2000; E. Miller, 2015; Novak et al., 2011; Novak & Rogan, 2010; Pagotto et al., 2010; Vezzali & Capozza, 2011; Vezzali &

Giovannini, 2011; Voci & Hewstone, 2003). While Liebkind et al. (2000), Voci and Hewstone (2003), Pagotto et al. (2010), Vezzali and Giovannini (2011), E. Miller (2015), Boss (2019), and Di Bernardo et al. (2021) studied the impact of intergroup contact on prejudice toward immigrants by professionals in Finland, Italy, and the U.S., and numerous researchers have examined intergroup contact theory in the context of Black and white college students in the U.S. (Aberson & Haag, 2007; Camargo et al., 2010; Jackson, 1997; Marmaros & Sacerdote, 2006; Shook & Fazio, 2008), there was little research examining intergroup contact theory with Black professionals in a business context (Stephens & Baskerville, 2020). Additionally, no research exists regarding the impact of intergroup contact theory on relationships with Black individuals within accounting or auditing.

This study relies on the established correlational relationship between intergroup contact theory and attitudes/levels of prejudice toward Black individuals and applying it to the auditing field. The second hypothesis follows:

H₂: Auditors who have less intergroup contact with Black individuals will amend their judgment amount by less when considering client-provided explanations offered by a CFO with a Black-sounding name relative to auditors who have more intergroup contact with Black individuals.

According to intergroup contact theory, positive interactions with individuals of a different race can lead to decreased prejudice and implicit bias. According to implicit social cognition, implicit racial bias can negatively impact human judgment and behavior. While accounting may seem to be a cut and dry field based on extensive rules and regulations, in reality it contains a multitude of gray areas that require professional judgment. First, an accountant must recognize that the situation or transaction at hand is complex with multiple appropriate approaches. Next, the accountant identifies the standard that best applies to the situation. Finally,

in many cases, the accountant must then make a series of estimates related to the transaction, which could include the relevant time period, the transaction/asset value, the useful life, the estimated future revenues and/or expenses, etc.

Thus far, existing literature has shown gaps in racial diversity within the accounting profession in the U.S. when compared to the overall population. Additionally, the Black population experiences negative effects of implicit racial bias in the U.S. overall and in business and accounting, specifically. It has also revealed how implicit racial bias influences human judgment and behavior and that positive contact among different groups can reduce implicit bias toward those outgroups. To date, research has not established the presence and influence of implicit racial bias on auditor judgments, nor has it examined the impacts of intergroup contact on auditor judgments. This research aims to fill those gaps.

Chapter 3: Methodology

This research aims to identify the extent to which the implicit racial bias present in other realms impacts the auditing profession in the U.S. It also seeks to examine the relationship between intergroup contact and auditor judgments. The research hypotheses follow:

H₁: Auditors will amend their judgment by a lesser amount when considering client-provided explanations offered by a CFO with a Black-sounding name relative to a CFO with a white-sounding name.

H₂: Auditors who have less intergroup contact with Black individuals will amend their judgment amount by less when considering client-provided explanations offered by a CFO with a Black-sounding name relative to auditors who have more intergroup contact with Black individuals.

The remainder of this chapter will discuss the research design, population and sample, experimental procedure, scale measurement instrument, and data collection procedures of the study.

Research Design

This quantitative study used a between subjects experimental design similar to the one used by Nöteberg and Hunton (2005). Permission to use the experiment materials was obtained from one of the authors, Anna Gold (formerly Nöteberg), via e-mail. The experimental design allows the researcher to study the effect of a manipulation in the independent variable, CFO race, on the dependent variable, auditor judgment (Creswell, 2009). This study differs from the original in the manipulated variables. While Nöteberg and Hunton (2005) evaluated the change in the perceived strength of the CFO's stance based on the type of media used to communicate a message, for this study the independent variable is the race of the CFO communicating the message (manipulated using a Black-sounding name versus a white-sounding name). In this

computerized experiment using an inventory obsolescence case adapted from Nöteberg and Hunton (2005), participants took on the role of an audit manager who is in charge of the audit of a computer manufacturer, MicroClone, Inc. The information provided indicates that MicroClone's finished goods inventory, valued at \$2 million, could be overvalued by as much as \$400,000 due to potential obsolescence of one product line. The participants were asked to make an initial judgment regarding the recommended client write-down amount. Participants then read five e-mails from the CFO, each providing support for maintaining the full valuation of the inventory. After reading the unverified arguments, participants were provided an opportunity to revise their initial judgment by issuing a final write-down amount. The experimental treatment is that some participants were randomly assigned by the online survey tool to read e-mails from a CFO with a Black-sounding name and others were randomly assigned to read e-mails from a CFO with a white-sounding name. The dependent variable, auditor judgment, is the mean difference between the initial and final write-down amount for each group. The lower the mean difference, the less the auditor was influenced by the arguments made by the CFO. Because the participants are highly trained and experienced individuals who did not know the purpose of the study and because the study treatment is between subjects, the mean differences in judgment amounts between the two groups is assumed to be the result of implicit racial bias based on the CFO race.

Participants also completed a post-experimental questionnaire that included three sets of items: manipulation and attention checks, demographic measures, and a scale to evaluate the participants' levels of contact with Black individuals (intergroup contact). The cross-sectional Cross Group Friendship (CGF) scale, which measures levels of intergroup contact, is based on one created by Turner et al. (2007, Study 3). Permission to use the scale was obtained from one

of the authors, Rhiannon Tuner, via e-mail. The primary purpose of a survey is to quickly and efficiently collect data from a sample that cannot be obtained otherwise, which is then used to make assumptions about the broader population (Fowler, 1988). The survey results were analyzed to determine if intergroup contact with Black individuals impacts the amount of the auditor write down. Therefore, only the intergroup contact scores of auditors interacting with Black CFOs were examined.

For this study, the CGF scale consists of four questions to assess the number of Black friends each participant has and the amount of time the participant spends with those friends, both at work and outside of work. The first two questions, “How many close friends do you have at work who are Black?” and “How many close friends do you have outside of work who are Black?” are measured on the following 5-point scale: 1 = none, 2 = one, 3 = between two and five, 4 = between five and ten, 5 = more than ten. The last two questions, “How often do you spend time with Black friends while you are at work?” and “How often do you spend time with Black friends outside of work?” are measured on the following 5-point scale: 1 = never, 2 = occasionally, 3 = sometimes, 4 = quite a lot, 5 = all the time. The scores of the four questions were averaged to create a single score of intergroup contact.

Population and Sample

The population includes individuals in the U.S. who have a bachelor’s degree in accounting with a specific focus on CPAs who have full-time auditing experience. Members of this population have all passed numerous college courses regarding accounting rules and principles, including at least one class specifically focused on auditing. In addition, CPAs have all passed the required licensure exam and have maintained a level of continuing professional education units each year. While there are approximately 670,000 CPAs in the U.S. (National

Association of State Boards of Accountancy, 2021), it is estimated based on U.S. Census data that roughly 425,400 work as auditors at the staff, manager, senior, or partner level (Zippia: The Career Expert; Zippia: The Career Expert; Zippia: The Career Expert; Zippia: The Career Expert).

The sample frame includes accountants with the appropriate qualifications who volunteered to participate in the study. While only a bachelor's degree in accounting was required, recruitment was targeted toward CPAs with full-time auditing experience. The study utilized voluntary response sampling to compose the convenience sample.

The researcher has connections with a number of managers of CPA firms in central Indiana (some of which also have offices in other parts of the U.S.). The researcher leveraged these relationships for the opportunity to solicit members of their staffs to participate in the study. Additionally, the researcher contacted CPA organizations and utilized social media platforms and individual connections/networks to reach more eligible individuals. Participants who completed the study and provided an e-mail address were placed in a drawing for one of five \$100 Amazon gift cards.

Experimental Procedure

The experiment uses a post-test only design (Campbell et al., 1966) where both groups receive different manipulations. Following the manipulations, both groups are tested to determine the difference resulting from the manipulations.

Because the experiment is conducted at a single point in time, rather than over time, there are fewer threats to internal validity than for a pre-/post-test experiment. The most significant threats result from issues with selection and potential for diffusion of treatment, which occurs when participants in the two groups communicate with one another (Creswell, 2009). To

decrease the threat of selection bias, the survey tool randomly assigned the participants to receive explanations from a CFO with either a Black- or white-sounding name. Diffusion of treatment is less likely because the participants completed the study at their own location and on their own time, rather than coming together to a central location to complete the study in person. To further reduce this risk, the study's instructions asked the participants to refrain from discussing the study details with other potential participants.

The primary external threat to validity is the limited set of characteristics for participants (Creswell, 2009). Because the study is only examining individuals with an accounting degree, the majority of whom are CPAs with auditing experience, the results of the study cannot be generalized beyond this group. In addition, incentivizing participation could skew results since the individuals who are motivated by the incentive were most likely to complete the study.

Scale Measurement Instrument

The robustness of the CGF scale has been established since the tool was developed in 2007. The original, 4-question CGF scale ($\alpha = .82$) (Turner et al., 2007, Study 3) measured the friendships with Asian individuals of 164 white British school children, ages 11.4 to 15.8 years, both in school and outside of school. They found that cross-group friendship was positively correlated with outgroup attitudes. Other research has utilized a variation of the scale for studies on intergroup contact, as summarized in Table 1 below (Swart et al., 2010, 2011; Turner et al., 2008). Swart et al. (2010, Study 1) used a modified 2-question scale ($\alpha = .84$) to study the impacts of cross-group friendships between white 16-18 year olds and Black individuals in South Africa. They also found a positive relationship between cross-group friendships and outgroup attitudes. Turner et al. (2007, Study 4) also used a modified 2-question scale similar to that of (Swart et al., 2010, 2011). Participants included 142 white British undergraduate students who

were asked about their cross-group friendships with Asians. The researchers analyzed the validity of their CGF measure, along with their measure of outgroup attitudes, via an exploratory principal axis factor analysis with oblimin rotation. All factor loadings for the scale items were $\geq .66$. Swart et al. (2011) conducted a 3-wave longitudinal study exploring the relationship between cross-group friendships of “minority-status Colored” (p. 1221) high-school students in South Africa on their outgroup attitudes toward majority-status white South African high-school students, finding a positive relationship between the two. The researchers also ran a confirmatory factor analysis and found that all factor loadings for the two-scale items were $\geq .72$.

Pettigrew (1997) found that intergroup friendship, more than just intergroup contact, was a “strong and consistent predictor of reduced prejudice” (p. 179), which makes the CGF an effective tool for measuring intergroup contact in the context of implicit bias. One potential limitation of the CGF is its reliance upon self-reported data. However, research findings by Hewstone et al. (2011) provide support for the convergent validity of these self-report measures of direct intergroup contact.

Table 1*Summary of Studies Using CGF Scale*

Study Author	# of Measures	Sample	Results	Internal Reliability	Construct/ Factor Validity
Turner et al., (2007), Study 1	2	60 white British school children, ages 8.1 to 11.9 years	Cross-group friendship was positively correlated with implicit outgroup attitudes	N/a	N/a
Turner et al., (2007), Study 2	3	96 white British school children, all male, ages 11.8 to 15.8 years	Cross-group friendship was positively correlated with outgroup attitudes	$\alpha = .81$	N/a
Turner et al., (2007), Study 3	4	164 white British school children, ages 11.4 to 15.8 years	Cross-group friendship was positively correlated with outgroup attitudes	$\alpha = .82$	N/a
Turner et al., (2007), Study 4	2	142 white British undergraduate students	Cross-group friendship was positively correlated with explicit outgroup attitudes	N/a	Factor loadings for scale items $\geq .66$
Turner et al., (2008), Study 1	2	142 white British undergraduate students	Cross-group friendship was positively associated with perceived ingroup and outgroup norms as well as with outgroup attitudes	N/a	N/a
Turner et al., (2008), Study 2	3	120 white British school children, ages 13.2 to 17.8 years	Cross-group friendship was positively associated with perceived ingroup and outgroup norms as well as with outgroup attitudes	$\alpha = .78$	N/a
Swart et al., (2010), Study 1	2	186 white 16-18 year old males and 196 Black individuals in South Africa	Positive relationship between cross-group friendships and outgroup attitudes	$\alpha = .84$	N/a
Swart et al., (2011)	2	465 "minority-status Colored" (p. 1221) high-school students in South Africa	Cross-group friendships had a positive relationship on outgroup attitudes	$\alpha = .84$	Factor loadings for scale items $\geq .72$

Data Collection Procedures

Data collection took place online from anywhere the participant had an Internet connection. The research materials were sent to contacts at four CPA firms in central Indiana, some with offices in other states, who then distributed the materials to their employees. In addition, a state CPA society distributed the materials to a group of eight CPA firms. The research materials were also posted to a CPA thread on Reddit as well as on LinkedIn and Facebook, where they were shared by friends and others in the researcher's network. Finally, they were e-mailed to the researcher's contacts who were eligible to participate in the study, some of whom also shared the information with their networks.

The communication explained the study procedures, the voluntary nature of the study, the risks and benefits of being in the study, payment for participation, privacy information, who to contact with questions, and the statement of initial consent. In order to reduce the opportunity for participants to intentionally bias the results of the study, the solicitation message explained that some information regarding the research questions being tested was being withheld until after they completed the study. Finally, they were instructed to click a link if they were interested in participating in the research study. The link took them to QuestionPro where they began the experiment. Following the experiment, participants completed the CGF survey, a manipulation check question where they identified the race of the CFO in the experiment, an attention check question where they confirmed the type of accounting scenario covered in the vignette, and answered some demographic questions and an eligibility question to ensure that they had an accounting degree. Participants were then provided the information regarding the research questions to allow them to make a fully-informed decision regarding their participation. They were also given the option to grant or withhold their fully-informed consent.

This chapter has detailed the methodology that was used to identify the extent to which implicit racial bias and intergroup contact impacts auditor judgments. It has described the research design, population and sample, research instruments, and data collection procedures of the study.

Chapter 4: Results

This research examines the presence and effect of implicit racial bias in the auditing profession in the U.S. It also measures the relationship between auditor judgments and intergroup contact. The research hypotheses follow:

H₁: Auditors will amend their judgment by a lesser amount when considering client-provided explanations offered by a CFO with a Black-sounding name relative to a CFO with a white-sounding name.

H₂: Auditors who have less intergroup contact with Black individuals will amend their judgment amount by less when considering client-provided explanations offered by a CFO with a Black-sounding name relative to auditors who have more intergroup contact with Black individuals.

The remainder of this chapter discusses the data collection and preparation processes, the sample demographic and descriptive statistics, the assumption testing conducted, the analysis of the research hypotheses, and supplemental analysis of the sample data.

Data Preparation

A total of 628 responses were received. Upon review, 279 of those were complete. The majority of the incomplete responses provided write-down amounts in response to the vignette, but did not complete the demographic information. None of the incomplete responses answered the final question seeking fully-informed consent, which rendered them unusable. Of the 279 that were complete, 151 were usable. The 128 unusable were excluded for the following reasons: 33 withheld final informed consent, 73 failed the attention check question regarding the topic of the vignette, 12 did not hold either a bachelor's degree in accounting or a CPA license, and 10 provided write-down amounts that were extreme outliers (significantly more than the provided guideline of \$0 to \$400,000). Table 2 details the reasons responses were unusable.

Table 2*Summary of Usable Responses*

Description	Number
Total responses received	628
Incomplete responses without consent	-349
Complete responses	279
No informed consent provided	-33
Failed attention check	-73
Not eligible (no CPA license or accounting degree)	-12
Judgment amounts greater than \$400,000	-10
Usable responses	151

Of the 151 responses that make up the sample, 79 did not identify the race of the CFO as expected for the manipulation. Twenty-four respondents identified Matthew as Black rather than white while 55 identified Tyrone as white rather than Black. The mean of the change in the write-down amounts for those who identified the race of the CFO in line with the manipulation was compared to the mean of the change in the write-down amount for those who did not identify the race of the CFO in line with the manipulation. Because the means were not statistically different between the two groups ($p = .10$), the researcher chose to use the data of those who failed this manipulation check. When calculating the results of the hypotheses, the researcher divided the groups based on the race the participant selected for the CFO rather than based on the CFO's name. Since the hypotheses are measuring the effect of implicit bias and the impact of cross-group friendship based on race, the selected CFO race was deemed to be a more accurate representation of the participant's implicit belief about the CFO's race.

Preliminary data preparation steps included checking for accuracy, resolving missing data, computing values for the change in the judgment amount and the CGF score, and checking for outliers. During the accuracy check, as mentioned above, 10 responses were removed from the sample due to them being outside of the relevant range of responses. In addition, the

researcher removed one value from the demographic question regarding the participant's number of years of auditing experience, but left the response within the final sample, because the respondent had input the value as 200. One respondent in the sample omitted answering question two of the CGF scale, "How many close friends do you have outside of work who are Black?" This missing value was imputed based on the median of the 150 responses to that question. No other variables relevant to the testing of the hypotheses were missing.

The change in the judgment values, the dependent variable for H_1 and one of the variables for H_2 , was calculated by subtracting the initial write-down amount from the final write-down amount. Negative values indicate that the respondent reduced their determination of the appropriate value of the write-down based on the information presented by the CFO while positive values indicate the opposite. The CGF score, one of the variables for H_2 , was calculated by finding the mean of the responses to the four scale questions for each respondent.

After removing the 10 extreme outliers discussed previously, the researcher calculated the z-scores for the change in the judgment amount and the CGF score. No z-scores were beyond the acceptable range of ± 3.29 standard deviations (Tabachnick & Fidell, 2019). Finally, the researcher found the four items of the CGF scale to be highly reliable ($\alpha = .87$). The collected data was then analyzed using SPSS Version 27.

Sample Demographic and Descriptive Statistics

Descriptive statistics of the sample demographic characteristics are presented below. Per Table 3 below, participants in the sample primarily identified as male (53.0%) compared to female (44.4%).

Table 3*Sample Descriptive Statistics - Gender*

	Total		White CFO		Black CFO	
	n = 151		n = 105		n = 46	
	n	%	n	%	n	%
Male	80	53.0	59	56.2	21	45.7
Female	67	44.4	44	41.9	23	50.0
Non-binary	2	1.3	0	0.0	2	4.3
No answer	2	1.3	2	1.9	0	0.0

The race and ethnicity data of the sample participants is presented in Table 4 below. Non-Hispanic/non-Latino white individuals comprised the majority of the sample (57.0%) followed by Hispanic/Latino participants (19.2%) and those who identified with two or more races (12.6%). Participants who identified as American Indian or Alaska Native, Asian, Black or African American, and Other each made up less than 10% of the sample.

Table 4*Sample Descriptive Statistics – Race/Ethnicity*

	Total		White CFO		Black CFO	
	n = 151		n = 105		n = 46	
	n	%	n	%	n	%
Ethnicity						
Hispanic/Latino	53	35.1	33	31.4	20	43.5
Not Hispanic/Latino	98	64.9	72	68.6	26	56.5
Race						
American Indian or Alaska Native	10	6.6	8	7.6	2	4.3
Asian	2	1.3	2	1.9	0	0.0
Black or African American	3	2.0	1	1.0	2	4.3
White (not Hispanic/Latino)	86	57.0	63	60.0	23	50.0
White (Hispanic/Latino)	29	19.2	19	18.1	10	21.8
Other	2	1.3	2	1.9	0	0.0
Two or more of the above	19	12.6	10	9.5	9	19.6

As illustrated in Table 5 below, the sample participants were highly qualified to respond to the vignette due to their CPA qualifications (nearly 91% held a CPA license) and to their

current position in a CPA firm. More than 80% work above the junior auditor level, in positions where they have increased decision-making responsibilities. Additionally, the sample has sufficient experience working full-time in auditing (mean of 7.3 years, $n = 135$), as shown in Table 6 below.

Table 5

Sample Descriptive Statistics – CPA License and Firm Position

	Total n = 151		White CFO n = 105		Black CFO n = 46	
	n	%	n	%	n	%
CPA License						
Yes	137	90.7	96	91.4	41	89.1
No	14	9.3	9	8.6	5	10.9
Current Position in CPA Firm						
Junior	12	7.9	9	8.6	3	6.5
Senior	62	41.1	38	36.2	24	52.2
Manager	48	31.8	39	37.1	9	19.6
Partner	13	8.6	9	8.6	4	8.7
No longer work/never worked in public accounting	15	9.9	10	9.5	5	10.9
No answer	1	0.7	0	0.0	1	2.1

Table 6

Summary of Continuous Demographic Variables

Years Working Full-time in Auditing			
	Total n = 135	White CFO n = 95	Black CFO n = 40
Mean	7.3	7.3	7.2
S.D.	5.6	5.4	6.1
Min.	0	0	0
Max.	28	28	22
Years Working as an Accountant			
	Total n = 73	White CFO n = 48	Black CFO n = 25
Mean	7.8	8.2	7.0
S.D.	6.1	6.5	5.1
Min.	0	2	0
Max.	33	33	22

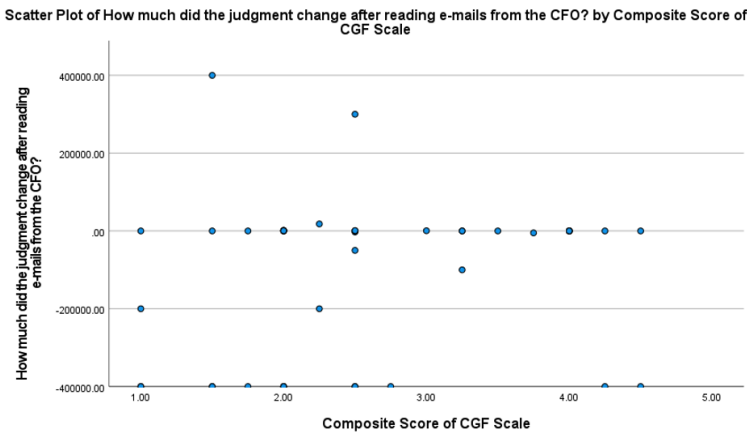
Assumption Testing

The assumptions for each statistical test were assessed prior to running the analysis of the data. For the t-test variable regarding the change in the recommended write-down amount, the assumptions include normality of the data and homogeneity of variance. The results of the Shapiro-Wilk test for normality indicated that the data was not normally distributed ($p = .000$). However, the calculated z-scores for skewness and kurtosis (-1.49 and -1.70, respectively) fell within the acceptable guidelines of ± 2 (George & Mallery, 2010). Therefore, the assumption of normality was met. Levene's Test for Equality of Variance was used to assess the homogeneity of variance. The assumption was met ($p = .46$), indicating that there were equal variances between the two groups. Based on this analysis, the researcher concluded that the use of the t-test to analyze H_1 was appropriate.

The assumptions for correlation, assessing the relationship between the change in the recommended write-down amount and the CGF score for those who indicated that the CFO was Black ($n = 46$), have been debated but are generally agreed to include normality and linearity (Schober et al., 2018). The normality of the change in the recommended write-down amount was recalculated for this subset of the sample. The CGF score was also assessed for normality. Similar to the entire sample, the results of the Shapiro-Wilk test for the change in the write-down amount indicated that the data was not normally distributed ($p = .000$). However, the assumption of normality was met based on the calculated z-scores for skewness and kurtosis (-0.65 and -0.57, respectively). The Shapiro-Wilk test for the CGF score also did not meet the assumption of normality ($p = .01$). The assumption of normality was met based on the z-scores for skewness and kurtosis (1.17 and -1.22, respectively). A visual interpretation of the scatterplot of the data indicated that the relationship between the variables was not linear (see Figure 3 below).

According to Schober et al. (2018), Pearson correlation can be used as a measure of a linear relationship without accounting for any assumptions. In addition, Spearman can be used to assess non-normal and/or nonlinear data (Schober et al., 2018). Therefore, the researcher analyzed the data using both Pearson and Spearman.

Figure 3.



Analysis of Research Hypotheses

Hypothesis 1.

The first hypothesis, which examined the effect on auditor judgment of client-provided explanations offered by a CFO with a Black-sounding name relative to a white-sounding name, was analyzed using an independent samples t-test. The independent variable was the implied race of the CFO based on the participants' answer to the question regarding the race of the CFO and the dependent variable was the difference between the initial and final write-down amount recommended by the participant. There was not a significant difference in judgment between those participants who interacted with a CFO with a Black-sounding name ($M = -109,424$, $SD = 203,965$) and those who interacted with a CFO with a white-sounding name ($M = -119,987$, $SD = 183,922$), $t(149) = 0.31$, $p = .75$. The t-test was also run analyzing responses from only the 72 participants who identified the race of the CFO as expected. There was not a significant

difference in judgment between those participants who interacted with a CFO with a Black-sounding name ($M = -148,991$, $SD = 195,420$) and those who interacted with a CFO with a white-sounding name ($M = -140,420$, $SD = 191,033$), $t(70) = -0.17$, $p = .86$. H_1 was not supported.

Hypothesis 2.

The second hypothesis, which examined the relationship between the level of intergroup contact with Black individuals and the change in the write-down amount by participants interacting with a CFO with a Black-sounding name, was analyzed using Pearson correlation and Spearman correlation. The variables included the change in the recommended write-down amount and the score on the CGF Scale. The mean and standard deviation of the change in the recommended write-down amount were $-\$109,424$ and $\$203,965$, respectively. For the CGF scale score, the mean and standard deviation were 2.57 and 1.02, respectively. There was not a significant correlation between the CGF score and the recommended write-down amount using either Pearson correlation, $r(44) = .16$, $p = .28$ or Spearman correlation, $r(44) = .07$, $p = .64$. H_2 was not supported.

Supplemental Analysis.

Further analysis was conducted based on additional demographic data collected for the sample and provided in Tables 7 and 8 below. In addition to the race of the CFO in the vignette, these tests separately examined the effect on auditor judgment of the participant's gender, race, age range, and geographic location, both during childhood and adulthood. The results are summarized in Table 9 below.

Table 7*Sample Descriptive Statistics – Age Range*

	Total		White CFO		Black CFO	
	n = 151		n = 105		n = 46	
	n	%	n	%	n	%
20-29	47	31.2	32	30.5	15	32.6
30-39	68	45.0	49	46.6	19	41.3
40-49	25	16.6	18	17.1	7	15.2
50-59	4	2.6	4	3.8	0	0.0
≥ 60	3	2.0	1	1.0	2	4.4
No answer	4	2.6	1	1.0	3	6.5

Table 8*Sample Descriptive Statistics – U.S. Region*

	Total		White CFO		Black CFO	
	n = 151		n = 105		n = 46	
	n	%	n	%	n	%
U.S. Region–Childhood						
Midwest	52	34.4	37	35.2	15	32.6
Northeast	14	9.3	10	9.5	4	8.7
South	40	26.5	26	24.8	14	30.4
West	34	22.5	25	23.8	9	19.6
No answer	11	7.3	7	6.7	4	8.7
U.S. Region–Adult						
Midwest	47	31.1	33	31.4	14	30.4
Northeast	15	9.9	11	10.5	4	8.8
South	44	29.1	30	28.6	14	30.4
West	34	22.5	23	21.9	11	23.9
No answer	11	7.3	8	7.6	3	6.5

Nosek et al. (2007) found that implicit racial bias varies among individuals of different genders, races/ethnicities, and age groups, with males, white individuals, and older individuals exhibiting higher implicit preference for white people. A two-way ANOVA was run with CFO race and participant gender as the independent variables and the change in auditor judgment as the dependent variable. There was not a statistically significant interaction between the effects of

participant gender and CFO race on auditor judgment, $F(1, 145) = 0.92, p = .34$. There was also not a statistically significant difference in the auditor judgment amount by either the CFO race, $F(1) = 0.11, p = .74$ or the participant gender, $F(3) = 0.82, p = .49$.

In order to examine the effect of participant race/ethnicity and CFO race on auditor judgment, a two-way ANOVA was conducted. There was not a statistically significant interaction between the effects of participant race/ethnicity and CFO race on auditor judgment, $F(4, 139) = 0.28, p = .89$. Simple main effects analysis showed that CFO race did not have a statistically significant effect on auditor judgment, $F(1) = 0.46, p = .50$ but that participant race/ethnicity did, $F(6) = 6.29, p = .000$. Post-hoc analysis using the Scheffé post-hoc criterion for significance indicated that the average change in the write down amount was greater for non-Hispanic/Latino white participants ($M = -190,913, SD = 192,997$), compared to both Hispanic/Latino participants ($M = -22,438, SD = 147,336$), $p = .003$ and participants of two or more races ($M = 11,823, SD = 77,028$), $p = .002$. The Scheffé method is appropriate when the sample sizes of the groups are unequal and when the relationships explored are not predetermined (Scheffé, 1953).

The researcher also ran a two-way ANOVA with participant age range and CFO race as the independent variables and the change in judgment as the dependent variable. The results indicated that there was not a statistically significant interaction between the effects of participant age range and CFO race, $F(4, 140) = 0.31, p = .87$. There was also not a statistically significant difference in the auditor judgment amount by either the CFO race, $F(1) = 0.20, p = .65$ or the participant age, $F(5) = 0.33, p = .89$.

The bias of crowds theory (Payne et al., 2017) suggests that “implicit bias may emerge as the aggregate effect of individual fluctuations in concept accessibility that are ephemeral and

context-dependent” (p. 233). One such context relevant to implicit racial bias includes geographic location. The researcher used the zip codes provided by the participants to categorize the sample into U.S. geographic locations based on the Bureau of Labor Statistics Census Regions (U.S. Bureau of Labor Statistics, 2014). Table 8 above summarizes the data for the sample. A two-way ANOVA was run with CFO race and the U.S. region of residence for the majority of the participant’s childhood as the independent variables and the change in auditor judgment as the dependent variable. The results indicated that there was not a statistically significant interaction between the effects of CFO race and U.S. region of residence during childhood, $F(4, 141) = 1.54, p = .19$. Simple main effects analysis showed that CFO race did not have a statistically significant effect on auditor judgment, $F(1) = 0.82, p = .37$ but that U.S. region of residence during childhood did, $F(4) = 2.76, p = .03$. Post-hoc analysis using the Scheffé post-hoc criterion for significance indicated that the average change in the write down amount was greater for participants who spent their childhood in the Midwest ($M = -170,358, SD = 198,814$), compared to those who did not provide this information ($M = 20,173, SD = 120,406$), $p = .003$. The same analysis was run again except that the second independent variable was the U.S. region of residence for the majority of the participant’s adulthood. The results indicated that there was not a statistically significant interaction between the effects of CFO race and U.S. region of residence during adulthood, $F(4, 141) = 1.52, p = .20$. Simple main effects analysis showed that neither CFO race nor U.S. region of residence in adulthood had a statistically significant effect on auditor judgment, $F(1) = 0.46, p = .50$ and $F(4) = 0.47, p = .69$, respectively.

Table 9*Summary Results of Supplemental Analysis Tests*

	Df	F	Sig
CFO Race	1	0.11	.74
Participant Gender	3	0.82	.49
Interaction	1	0.92	.34
CFO Race	1	0.46	.50
Participant Race/Ethnicity	6	6.29	.000*
Interaction	4	0.28	.89
CFO Race	1	0.20	.65
Participant Age	5	0.33	.89
Interaction	4	0.31	.87
CFO Race	1	0.82	.37
Participant U.S. Region–Childhood	4	2.76	.03*
Interaction	4	1.54	.19
CFO Race	1	0.46	.50
Participant U.S. Region–Adult	4	0.47	.69
Interaction	4	1.52	.20

*Significant at the .05 level

This chapter has detailed the results of the study. It has discussed the data collection and preparation processes, the sample demographic and descriptive statistics, the assumption testing conducted, the analysis of the research hypotheses, and supplemental analysis of the sample data.

Chapter 5: Discussion

The purpose of this study is to identify the effect of implicit racial bias and impact of intergroup contact on auditors' judgments by answering two questions: 1) How does the race of the CFO affect the accounting judgments of auditors? 2) How does intergroup contact with Black individuals impact auditors' accounting judgments when working with a Black CFO? In addition to discussing the findings presented in the previous chapter, this chapter will also address limitations, implications, and recommendations for future research.

Findings

The results of the first hypothesis, analyzing the effect on auditor judgment of client-provided explanations offered by a CFO with a Black-sounding name compared to a white-sounding name, were not significant. The null hypothesis that there would be no difference between the two groups was retained.

The results of the second hypothesis, examining the relationship between the level of intergroup contact with Black individuals and the change in the write-down amount by auditors interacting with a CFO with a Black-sounding name, were not statistically significant. The null hypothesis that the level of intergroup contact would not impact the write-down amount was not rejected.

The results of the further analyses exploring the effects on the auditor judgment amount of the participant's gender, race/ethnicity, age group, and geographic location combined with the race of the CFO also did not produce statistically significant results in any of the interactions. However, both the participant's race/ethnicity and the U.S. region where the participants spent their childhood did have a statistically significant effect on the change in the auditor judgment amount. White participants decreased their judgment amount by more than Hispanic/Latino

participants and those who are two or more races. Additionally, participants who spent their childhood in the Midwest decreased their judgment amount by more than those who did not provide information regarding where they spent their childhood.

While some research has indicated that auditor judgments can vary due to unconscious bias (Bazerman et al., 2002), little research has been performed regarding the factors that impact those judgments (Nöteberg & Hunton, 2005). Existing literature has not examined the effects on auditor judgments of demographic factors such as race or the U.S. region where the auditor spent their childhood.

Limitations

The study was limited in a number of ways. The methodology relied on the CFO's name in the vignette activating an implicit response based on race. However, slightly more than half of the participants in the sample (52%) did not identify the race of the CFO as expected based on the name in the vignette. This may indicate that the name alone was not enough to signal the CFO's race. While the name was a strong enough proxy for race in previous studies (Bendick et al., 1994; Bertrand & Mullainathan, 2004; Kline et al., 2021; Nunley et al., 2015; Quillian et al., 2017), this research differs in potentially significant ways. First, the accounting profession is not racially diverse, as was noted previously to support the potential existence of implicit racial bias in accounting. In 2021, 67% of CPAs were white and 2% were Black (American Institute of Certified Public Accountants, 2021). During the same year, 89% of CFO positions at the nearly 700 Fortune 500 and S&P 500 companies were held by white individuals, compared to 3% held by Black individuals (Crist Kolder Associates, 2021). Given the likely experience of interacting more frequently with white CFOs/CPAs than Black CFOs/CPAs and of seeing primarily white CFOs/CPAs in the media, it is probable that many participants had an existing bias that a CFO

who also had their CPA, a master's degree, and 15 years of experience would most likely be white.

An additional limitation is that the sample size for the test of H_2 was small and likely underpowered. Of the 151 participants in the sample, 77 were in the group who received e-mails from Tyrone. Because the correlation was limited to participants who interacted with the Black CFO and because many participants incorrectly identified the race of the CFO, only the 46 who identified the CFO as Black were included in the sample.

Implications

This research contributes to the existing literature as an early study examining implicit racial bias in auditing. It also provides insight for the accounting profession regarding additional factors that may impact auditors' decisions.

For research/theory. While numerous studies noted previously have successfully used a name as proxy for race when studying implicit racial bias, this study uncovered a context where a first name is not strong enough to denote race. It is possible that this difference in results is due to the file drawer effect (Rosenthal, 1979) leading to the publishing of only those studies where using different names provided statistically significant results. An alternate explanation for this lack of congruity with the literature is that the wrong names were used and Tyrone and Matthew are not the appropriate names to represent Black and white individuals. Although the results of this study do not provide support for the hypotheses, they may provide evidence of one methodology that is not effective at detecting the relationship between implicit racial bias and auditor judgments, if such a relationship exists.

The lack of congruity between the additional findings and existing research regarding the impacts of gender, race/ethnicity, and age on implicit preference for white people and any

potential effect from the bias of crowds theory related to the primary region of residence in adulthood, may also be due to the issues discussed above. The additional findings regarding differences in auditor judgments based on the participants' race/ethnicity and where they spent their childhood may contribute to the scant research regarding the factors that influence auditors' judgments. Future research in this area could uncover the underlying causes for these differences and their effects in the auditing field.

For the profession. This research may provide information regarding the differences in judgments among auditors. The results may indicate that white participants decreased their write-down amount by more than both Hispanic/Latino participants and those of two or more races (\$168,475 and \$202,736, respectively). Additionally, results may indicate that participants who spent their childhoods in the Midwest decreased their judgment amount by \$190,530 more than those who did not provide where they spent their childhood. One of the main goals of an audit is to ensure that the financial statements are free from material misstatements, which means that someone who relies on the financial statements to make decisions will not be negatively impacted by differences between the financial statements and reality. The amount that is considered "material" differs depending on the circumstances of the company undergoing the audit. For many smaller companies, the amount of difference identified in this study may represent material amounts that could make a significant difference in the financial statements.

This supplemental finding may provide support for the accounting profession to continue working to increase the racial/ethnic diversity of accountants. Auditors do not make decisions alone. Instead, they have a team working on the audit with whom they can discuss these types of situations that require judgment. It is possible that input from diverse teams of auditors would result in judgments that are less varied, and potentially, closer to reality. It also indicates a need

for CPAs and auditing professionals to participate in more research to better understand the factors that influence auditor judgments to continue to improve the accuracy and reliability of the audit process.

Recommendations for Future Research

If this study were to be conducted again, a stronger stimulus would need to be employed to elicit any underlying implicit racial bias. One option would be to provide a visual of the CFO in addition to the name. This could be achieved by showing a realistic image of the e-mail that includes the CFO's picture, similar to how Gmail shows a small picture of the sender with the body of the e-mail.

Additionally, this study found a significant difference may exist in the judgments made by participants of different races/ethnicities. Future research should further examine the presence of this difference and any underlying causes. Are accountants of some racial/ethnic backgrounds more/less conservative than others? If so, is the difference because of mindsets and experiences influenced by their race/ethnicity? How much of these differences in judgment amounts can be decreased if auditors work on diverse teams of individuals from different racial/ethnic backgrounds?

Conclusion

The purpose of the study is to determine if the implicit racial bias present in the U.S. also exists in the auditing profession and affects auditor judgments. While the results of the study do not provide support for the effect of Black- or white-sounding name or impact of intergroup contact on auditor judgments, the study was limited by a number of factors that may have impacted the results. The research may provide additional support for the theory that auditors are influenced by general implicit bias resulting in differences in judgment amounts, in this case

potentially based on the race/ethnicity of the participant and the U.S. region where they spent their childhood. While the reality is that implicit racial bias has negative effects in society, the hopeful news is that it can be detected and decreased. Future research should continue to explore the presence and impacts of implicit bias generally, and implicit racial bias specifically, in the auditing field.

References

- Aberson, C. L., & Haag, S. C. (2007). Contact, perspective taking, and anxiety as predictors of stereotype endorsement, explicit attitudes, and implicit attitudes. *Group Processes & Intergroup Relations*, 10(2), 179-201. <https://doi.org/10.1177/1368430207074726>
- Aberson, C. L., Shoemaker, C., & Tomolillo, C. (2004). Implicit bias and contact: The role of interethnic friendships. *The Journal of Social Psychology*, 144(3), 335-347. <https://doi.org/10.3200/SOCP.144.3.335-347>
- Adedoyin, O. (2022). Race on campus: Should the 'B' in 'Black' be capitalized? *The Chronicle of Higher Education*. Retrieved June 30, 2022, from <https://www.chronicle.com/newsletter/race-on-campus/2022-06-28>
- Agan, A., & Starr, S. (2018). Ban the box, criminal records, and racial discrimination: A field experiment. *The Quarterly Journal of Economics*, 133(1), 191-235. <https://doi.org/10.1093/qje/qjx028>
- Alles, M., & Gray, G. L. (2019). Will the medium become the message? A framework for understanding the coming automation of the audit process. *The Journal of Information Systems*, 34(2), 109-130. <https://doi.org/10.2308/isys-52633>
- Allport, G. W. (1935). Attitudes. In C. Murchison (Ed.), *A handbook of social psychology*. Clark University Press.
- Allport, G. W. (1954). *The nature of prejudice*. Addison-Wesley Publishing Company.
- American Institute of Certified Public Accountants. (2019). *2019 Trends in the supply of accounting graduates and the demand for public accounting recruits*. <https://www.aicpa.org/content/dam/aicpa/interestareas/accountingeducation/newsandpublications/downloadabledocuments/2019-trends-report.pdf>

- American Institute of Certified Public Accountants. (2021). *2021 Trends: A report on accounting education, the CPA exam and public accounting firms' hiring of recent graduates*.
<https://www.aicpa.org/professional-insights/download/2021-trends-report>
- Annisette, M. (2003). The colour of accountancy: Examining the salience of race in a professionalisation project. *Accounting, Organizations and Society*, 28(7), 639-674.
[https://doi.org/10.1016/S0361-3682\(02\)00030-2](https://doi.org/10.1016/S0361-3682(02)00030-2)
- Annisette, M., & Trivedi, V. U. (2013). Globalization, paradox and the (un) making of identities: Immigrant chartered accountants of India in Canada. *Accounting, Organizations and Society*, 38(1), 1-29. <https://doi.org/10.1016/j.aos.2012.08.004>
- Banks, R. R., Eberhardt, J. L., & Ross, L. (2006). Discrimination and implicit bias in a racially unequal society. *California Law Review*, 94(4), 1169-1190.
<https://doi.org/10.2307/20439061>
- Bazerman, M. H., Loewenstein, G., & Moore, D. A. (2002). Why good accountants do bad audits. *Harvard Business Review*, 80(11), 97-102.
- Bendick, M., Jackson, C. W., & Reinoso, V. A. (1994). Measuring employment discrimination through controlled experiments. *Review of Black Political Economy*, 23(1), 25-48.
<https://doi.org/10.1007/BF02895739>
- Benjamin, R. (2019). *Race after technology: Abolitionist tools for the new Jim Code*. Polity.
- Berndt Rasmussen, K. (2020). Implicit bias and discrimination. *Theoria*, 86(6), 727-748.
<https://doi.org/10.1111/theo.12227>
- Bertrand, M., & Duflo, E. (2017). Field experiments on discrimination. In A. V. Banerjee & E. Duflo (Eds.), *Handbook of economic field experiments* (Vol. 1, pp. 309-393). North-Holland.

- Bertrand, M., & Mullainathan, S. (2004). Are Emily and Greg more employable than Lakisha and Jamal? A field experiment on labor market discrimination. *American Economic Review*, 94(4), 991-1013. <https://doi.org/10.1257/0002828042002561>
- Bird, A., Li, C., Madsen, P. E., & Ruchti, T. G. (2016). University-level recruiting and black underrepresentation in the auditing profession. *SSRN Electronic Journal*.
<https://doi.org/10.2139/ssrn.2864003>
- Boss, H. (2019). *Assessing the impact of intergroup contact and diversity training on employers' hiring attitudes, intentions and behaviours toward refugees*. University of Calgary. Calgary, AB.
- Broockman, D., & Kalla, J. (2016). Durably reducing transphobia: A field experiment on door-to-door canvassing. *Science*, 352(6282), 220-224.
<https://doi.org/10.1126/science.aad9713>
- Butler, D. M., & Homola, J. (2017). An empirical justification for the use of racially distinctive names to signal race in experiments. *Political Analysis*, 25(1), 122-130.
<https://doi.org/10.1017/pan.2016.15>
- Camargo, B., Stinebrickner, R., & Stinebrickner, T. (2010). Interracial friendships in college. *Journal of Labor Economics*, 28(4), 861-892. <https://doi.org/10.1086/653831>
- Campbell, D. T., Stanley, J. C., Gage, N. L., Stanley, J. C., & Gage, N. L. (1966). *Experimental and quasi-experimental designs for research*. R. McNally.
- Castilla, Emilio J. (2008). Gender, race, and meritocracy in organizational careers. *American Journal of Sociology*, 113(6), 1479-1526. <https://doi.org/10.1086/588738>

- Charlesworth, T. E. S., & Banaji, M. R. (2022). Patterns of implicit and explicit attitudes: IV. change and stability from 2007 to 2020. *Psychological Science*, 33(9), 1347-1371.
<https://doi.org/10.1177/09567976221084257>
- Choi, M. S., & Jarrott, S. E. (2021). Application of intergroup contact theory to managing age-diverse teams. *Journal of Intergenerational Relationships*, 19(3), 377-391.
<https://doi.org/10.1080/15350770.2020.1753621>
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (Third edition. ed.). SAGE Publications, Inc.
- Crist Kolder Associates. (2021). *Crist/Kolder Associates volatility report 2021*.
<https://www.cristkolder.com/media/2819/volatility-report-2021-americas-leading-companies.pdf>
- D'Rosario, M., & D'Rosario, C. (2020). Beyond robodebt: The future of robotic process automation. *International Journal of Strategic Decision Sciences*, 11(2), 1-24.
<https://doi.org/10.4018/IJSDS.2020040101>
- Datta, A., Tschantz, M. C., & Datta, A. (2014). Automated experiments on ad privacy settings: A tale of opacity, choice, and discrimination. *Proceedings on Privacy Enhancing Technologies*, 2015(1), 92-112. <https://doi.org/10.48550/arXiv.1408.6491>
- Devine, P. G., Forscher, P. S., Austin, A. J., & Cox, W. T. L. (2012). Long-term reduction in implicit race bias: A prejudice habit-breaking intervention. *Journal of Experimental Social Psychology*, 48(6), 1267-1278. <https://doi.org/10.1016/j.jesp.2012.06.003>
- Di Bernardo, G. A., Vezzali, L., Birtel, M. D., Stathi, S., Ferrari, B., Giovannini, D., & Pettigrew, T. F. (2021). The role of optimal conditions and intergroup contact in promoting positive intergroup relations in and out of the workplace: A study with ethnic

- majority and minority workers. *Group Processes & Intergroup Relations*, 1-18.
<https://doi.org/10.1177/13684302211010929>
- Dovidio, J. F., Kawakami, K., & Gaertner, S. L. (2002). Implicit and explicit prejudice and interracial interaction. *Journal of Personality and Social Psychology*, 82(1), 62-68.
<https://doi.org/10.1037/0022-3514.82.1.62>
- Dwork, C., Hardt, M., Pitassi, T., Reingold, O., & Zemel, R. (2012). Fairness through awareness. Proceedings of the 3rd innovations in theoretical computer science conference.
- Eligon, J. (2020). A debate over identity and race asks, are African-Americans 'Black' or 'black'? *The New York Times*. Retrieved July 7, 2022, from
<https://www.nytimes.com/2020/06/26/us/black-african-american-style-debate.html>
- EY. (2018). *Can you combine the power of human and machine through robotics and intelligent automation?* <https://eyfinancialservicesthoughtgallery.ie/combine-human-and-machine-through-intelligent-automation/>
- Fasbender, U., & Wang, M. (2017). Intergenerational contact and hiring decisions about older workers. *Journal of Managerial Psychology*, 32(3), 210-224.
<https://doi.org/10.1108/JMP-11-2016-0339>
- Fazio, R. H. (1986). How do attitudes guide behavior. In R. M. Sorrentino & T. E. Higgins (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (Vol. 1, pp. 204-243). The Guildford Press.
- Fazio, R. H. (1990). Multiple processes by which attitudes guide behavior: The MODE model as an integrative framework. *Advances in Experimental Social Psychology*, 23(C), 75-109.
[https://doi.org/10.1016/S0065-2601\(08\)60318-4](https://doi.org/10.1016/S0065-2601(08)60318-4)

- Fazio, R. H. (1995). Attitudes as object-evaluation associations: Determinants, consequences, and correlates of attitude accessibility. In *Attitude strength: Antecedents and consequences* (Vol. 4, pp. 247-282).
- Fazio, R. H., Jackson, J. R., Dunton, B. C., & Williams, C. J. (1995). Variability in automatic activation as an unobtrusive measure of racial attitudes: A bona fide pipeline? *Journal of Personality and Social Psychology*, 69(6), 1013. <https://doi.org/10.1037/0022-3514.69.6.1013>
- Fazio, R. H., & Olson, M. A. (2003). Implicit measures in social cognition research: Their meaning and use. *Annual Review of Psychology*, 54(1), 297-327. <https://doi.org/10.1146/annurev.psych.54.101601.145225>
- Finseraas, H., & Kotsadam, A. (2017). Does personal contact with ethnic minorities affect anti-immigrant sentiments? Evidence from a field experiment. *European Journal of Political Research*, 56(3), 703-722. <https://doi.org/10.1111/1475-6765.12199>
- Fowler, F. J. (1988). *Survey research methods* (Rev. ed. ed.). Sage Publications. <http://www.gbv.de/dms/bowker/toc/9780803932937.pdf>
- Frey, C. B., & Osborne, M. A. (2017). The future of employment: How susceptible are jobs to computerisation? *Technological Forecasting & Social Change*, 114(January), 254-280. <https://doi.org/10.1016/j.techfore.2016.08.019>
- George, D., & Mallery, P. (2010). *SPSS for Windows step by step: A simple guide and reference, 17.0 update* (10a ed.). Pearson.
- Giuliano, L., Levine, David I., & Leonard, J. (2009). Manager race and the race of new hires. *Journal of Labor Economics*, 27(4), 589-631. <https://doi.org/10.1086/605946>

- Goldenfein, J. (2019). Algorithmic transparency and decision-making accountability: Thoughts for buying machine learning algorithms. In C. Bertram, A. Gibson, & A. Nugent (Eds.), *Closer to the machine: Technical, social, and legal aspects of AI* (pp. 41-61). Office of the Victorian Information Commissioner.
- Gotthardt, M., Koivulaakso, D., Paksoy, O., Saramo, C., Martikainen, M., & Lehner, O. (2020). Current state and challenges in the implementation of smart robotic process automation in accounting and auditing. *ACRN Journal of Finance and Risk Perspectives*, 9(1), 90-102. <https://doi.org/10.35944/jofrp.2020.9.1.007>
- Graf, P., & Schacter, D. L. (1985). Implicit and explicit memory for new associations in normal and amnesic subjects. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 11(3), 501-518. <https://doi.org/10.1037/0278-7393.11.3.501>
- Green, A. R., Carney, D. R., Pallin, D. J., Ngo, L. H., Raymond, K. L., Iezzoni, L. I., & Banaji, M. R. (2007). Implicit bias among physicians and its prediction of thrombolysis decisions for black and white patients. *Journal of General Internal Medicine*, 22(9), 1231-1238. <https://doi.org/10.1007/s11606-007-0258-5>
- Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychological Review*, 102(1), 4-27. <https://doi.org/10.1037/0033-295X.102.1.4>
- Greenwald, A. G., & Banaji, M. R. (2017). The implicit revolution: Reconceiving the relation between conscious and unconscious. *The American Psychologist*, 72(9), 861-871. <https://doi.org/10.1037/amp0000238>

- Greenwald, A. G., Banaji, M. R., Rudman, L. A., Farnham, S. D., Nosek, B. A., & Mellott, D. S. (2002). A unified theory of implicit attitudes, stereotypes, self-esteem, and self-concept. *Psychological Review*, 109(1), 3-25. <https://doi.org/10.1037/0033-295X.109.1.3>
- Greenwald, A. G., Dasgupta, N., Dovidio, J. F., Kang, J., Moss-Racusin, C. A., & Teachman, B. A. (2022). Implicit-bias remedies: Treating discriminatory bias as a public-health problem. *Psychological Science in the Public Interest*, 23(1), 7-40. <https://doi.org/10.1177/15291006211070781>
- Greenwald, A. G., & Lai, C. K. (2020). Implicit social cognition. *Annual Review of Psychology*, 71(1), 419-445. <https://doi.org/10.1146/annurev-psych-010419-050837>
- Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The Implicit Association Test. *Journal of Personality and Social Psychology*, 74(6), 1464-1480. <https://doi.org/10.1037/0022-3514.74.6.1464>
- Greenwald, A. G., Oakes, M. A., & Hoffman, H. G. (2003). Targets of discrimination: Effects of race on responses to weapons holders. *Journal of Experimental Social Psychology*, 39(4), 399-405. [https://doi.org/10.1016/S0022-1031\(03\)00020-9](https://doi.org/10.1016/S0022-1031(03)00020-9)
- Hahn, A., & Gawronski, B. (2018). Implicit social cognition. In J. T. Wixted & S. Ghetti (Eds.), *Stevens' handbook of experimental psychology and cognitive neuroscience* (Fourth edition. ed., Vol. 4). Wiley.
- Hammond, T. (1997). From complete exclusion to minimal inclusion: African Americans and the public accounting industry, 1965–1988. *Accounting, Organizations and Society*, 22(1), 29-53. [https://doi.org/10.1016/0361-3682\(95\)00047-X](https://doi.org/10.1016/0361-3682(95)00047-X)
- Hammond, T. (2002). *A white-collar profession: African American certified public accountants since 1921*. University of North Carolina Press.

Testimony of Theresa A. Hammond. Hearing on diversity in the financial services industry and access to capital for minority-owned businesses: Challenges and opportunities,

Subcommittee on Oversight and Investigations Committee on Financial Services (2004).

<https://archives-financialservices.house.gov/media/pdf/071504th.pdf>

Hammond, T., & Streeter, D. W. (1994). Overcoming barriers: Early African-American certified public accountants. *Accounting, Organizations and Society*, 19(3), 271-288.

[https://doi.org/10.1016/0361-3682\(94\)90035-3](https://doi.org/10.1016/0361-3682(94)90035-3)

Helman, E., Flake, J. K., & Calanchini, J. (2018). Disproportionate use of lethal force in policing is associated with regional racial biases of residents. *Social Psychological and Personality Science*, 9(4), 393-401. <https://doi.org/10.1177/1948550617711229>

Hewstone, M., Judd, C. M., & Sharp, M. (2011). Do observer ratings validate self-reports of intergroup contact?: A round-robin analysis. *Journal of Experimental Social Psychology*, 47(3), 599-609. <https://doi.org/10.1016/j.jesp.2010.12.014>

Huang, G., Baskerville, R. F., & Fowler, C. (2016). Entering the accounting profession: The operationalization of ethnicity-based discrimination. *Accounting, Auditing & Accountability Journal*, 29(8), 1342-1366. <https://doi.org/10.1108/AAAJ-07-2015-2153>

Jackson, J. R. (1997). *Automatically activated racial attitudes*. Indiana University.

Jacoby, L. L. (1982). Knowing and remembering: Some parallels in the behavior of Korsakoff patients and normals. In L. S. Cermak (Ed.), *Human memory and amnesia* (pp. 97-122). Lawrence Erlbaum Associates.

Jacoby, L. L., & Witherspoon, D. (1982). Remembering without awareness. *Canadian Journal of Psychology*, 36(2), 300-324. <https://doi.org/10.1037/h0080638>

- James, K., & Otsuka, S. (2009). Racial biases in recruitment by accounting firms: The case of international Chinese applicants in Australia. *Critical Perspectives on Accounting*, 20(4), 469-491. <https://doi.org/10.1016/j.cpa.2008.02.005>
- Johnson, J. H., Bienenstock, E. J., & Stoloff, J. A. (1995). An empirical test of the cultural capital hypothesis. *Review of Black Political Economy*, 23(4), 7-27. <https://doi.org/10.1007/BF02689909>
- Jost, J. T., Rudman, L. A., Blair, I. V., Carney, D. R., Dasgupta, N., Glaser, J., & Hardin, C. D. (2009). The existence of implicit bias is beyond reasonable doubt: A refutation of ideological and methodological objections and executive summary of ten studies that no manager should ignore. *Research in Organizational Behavior*, 29((2009)), 39-69. <https://doi.org/10.1016/j.riob.2009.10.001>
- Kim, S. N. (2004). Imperialism without empire: Silence in contemporary accounting research on race/ethnicity. *Critical Perspectives on Accounting*, 15(1), 95-133. [https://doi.org/10.1016/S1045-2354\(03\)00004-2](https://doi.org/10.1016/S1045-2354(03)00004-2)
- Kline, P. M., Rose, E. K., & Walters, C. R. (2021). *Systemic discrimination among large US employers*. National Bureau of Economic Research.
- Koschate, M., Oethinger, S., Kuchenbrandt, D., & Van Dick, R. (2012). Is an outgroup member in need a friend indeed? Personal and task-oriented contact as predictors of intergroup prosocial behavior. *European Journal of Social Psychology*, 42(6), 717-728. <https://doi.org/10.1002/ejsp.1879>
- Larcker, D. F., & Tayan, B. (2020). Diversity in the C-suite: The dismal state of diversity among Fortune 100 senior executives. *Rock Center for Corporate Governance at Stanford*

- University Closer Look Series: Topics, Issues and Controversies in Corporate Governance No. CGRP-82, Available at SSRN: <https://ssrn.com/abstract=3587498>.*
- Lewis, A. (2020). *'Counting black and white beans': Critical race theory in accounting*. Emerald Group Publishing.
- Liebkind, K., Haaramo, J., & Jasinskaja-Lahti, I. (2000). Effects of contact and personality on intergroup attitudes of different professionals. *Journal of Community & Applied Social Psychology*, 10(3), 171-181. [https://doi.org/10.1002/1099-1298\(200005/06\)10:3<171::AID-CASP557>3E3.0.CO;2-I](https://doi.org/10.1002/1099-1298(200005/06)10:3<171::AID-CASP557>3E3.0.CO;2-I)
- Marmaros, D., & Sacerdote, B. (2006). How do friendships form? *The Quarterly Journal of Economics*, 121(1), 79-119. <https://doi.org/10.1162/qjec.2006.121.1.79>
- McConahay, J. B., Hardee, B. B., & Batts, V. (1981). Has racism declined in America? It depends on who is asking and what is asked. *The Journal of Conflict Resolution*, 25(4), 563-579. <https://doi.org/10.1177/002200278102500401>
- McConnell, A. R., & Leibold, J. M. (2001). Relations among the Implicit Association Test, discriminatory behavior, and explicit measures of racial attitudes. *Journal of Experimental Social Psychology*, 37(5), 435-442. <https://doi.org/10.1006/jesp.2000.1470>
- Miller, C. C. (2015, August 10, 2015). Algorithms and bias: Q. and A. with Cynthia Dwork. *New York Times*. <https://www.nytimes.com/2015/08/11/upshot/algorithms-and-bias-q-and-a-with-cynthia-dwork.html>
- Miller, E. (2015). Bridging boundaries of difference: Intergroup contact between immigrants and natives in the context of work. In *Immigration and Work* (Vol. 27, pp. 289-313). Emerald Group Publishing Limited.

- Miller, K. (2019). A matter of perspective: Discrimination, bias and inequality in AI. In C. Bertram, A. Gibson, & A. Nugent (Eds.), *Closer to the machine: Technical, social, and legal aspects of AI* (pp. 23-39). Office of the Victorian Information Commissioner.
- Miranti, P. J. (1988). Professionalism and nativism: The competition of securing public accountancy legislation in New York during the 1890s. *Social Science Quarterly*, 69(2), 361-380.
- Mock, B. (2020). What it will take to close the race gap in home appraisals. *Bloomberg CityLab*.
<https://www.bloomberg.com/news/articles/2021-03-03/appraisers-acknowledge-bias-in-home-valuations>
- Moyes, G. D., Williams, P. A., & Quigley, B. Z. (2000). The relation between perceived treatment discrimination and job satisfaction among African-American accounting professionals. *Accounting Horizons*, 14(1), 21-48.
<https://doi.org/10.2308/acch.2000.14.1.21>
- National Association of State Boards of Accountancy. (2021). *How Many CPAs Are There?* Retrieved July 21, 2022 from <https://nasba.org/licensure/howmanycpas/>
- Nix, J., Campbell, B. A., Byers, E. H., & Alpert, G. P. (2017). A bird's eye view of civilians killed by police in 2015. *Criminology & Public Policy*, 16(1), 309-340.
<https://doi.org/10.1111/1745-9133.12269>
- Noble, S. U. (2018). *Algorithms of oppression: How search engines reinforce racism*. New York University Press.
- Nosek, B. A., Hawkins, C. B., & Frazier, R. S. (2012). Implicit social cognition. In S. T. Fiske & C. N. Macrae (Eds.), *The SAGE handbook of social cognition*. SAGE.

Nosek, B. A., Smyth, F. L., Hansen, J. J., Devos, T., Lindner, N. M., Ranganath, K. A., . . .

Banaji, M. R. (2007). Pervasiveness and correlates of implicit attitudes and stereotypes.

European Review of Social Psychology, 18(1), 36-88.

<https://doi.org/10.1080/10463280701489053>

Nöteberg, A., & Hunton, J. E. (2005). Client inquiry via electronic communication media: Does the medium matter? *Advances in Accounting Behavioral Research*, 8, 87-112.

[https://doi.org/10.1016/S1475-1488\(04\)08004-4](https://doi.org/10.1016/S1475-1488(04)08004-4)

Novak, J., Feyes, K. J., & Christensen, K. A. (2011). Application of intergroup contact theory to the integrated workplace: Setting the stage for inclusion. *Journal of Vocational Rehabilitation*, 35(3), 211-226. <https://doi.org/10.3233/JVR-2011-0573>

Rehabilitation, 35(3), 211-226. <https://doi.org/10.3233/JVR-2011-0573>

Novak, J. A., & Rogan, P. M. (2010). Social integration in employment settings: Application of intergroup contact theory. *Intellectual and Developmental Disabilities*, 48(1), 31-51.

<https://doi.org/10.1352/1934-9556-48.1.31>

Nunley, J. M., Pugh, A., Romero, N., & Seals, R. A. (2015). Racial discrimination in the labor market for recent college graduates: Evidence from a field experiment. *The B.E. Journal of Economic Analysis & Policy*, 15(3), 1093-1125. <https://doi.org/10.1515/bejeap-2014-0082>

O'Neil, C. (2016). *Weapons of math destruction: How big data increases inequality and threatens democracy* (First ed.). Crown.

Pagotto, L., Voci, A., & Maculan, V. (2010). The effectiveness of intergroup contact at work:

Mediators and moderators of hospital workers' prejudice towards immigrants. *Journal of Community & Applied Social Psychology*, 20(4), 317-330.

<https://doi.org/10.1002/casp.1038>

- Paluck, E. L., & Green, D. P. (2009). Prejudice reduction: What works? A review and assessment of research and practice. *Annual Review of Psychology*, 60(1), 339-367.
<https://doi.org/10.1146/annurev.psych.60.110707.163607>
- Paluck, E. L., Green, S. A., & Green, D. P. (2019). The contact hypothesis re-evaluated. *Behavioural Public Policy*, 3(2), 129-158. <https://doi.org/10.1017/bpp.2018.25>
- Payne, B. K., & Gawronski, B. (2010). A history of implicit social cognition: Where is it coming from? Where is it now? Where is it going? In B. Gawronski & B. K. Payne (Eds.), *Handbook of implicit social cognition: Measurement, theory, and applications* (pp. 1-15). Guilford Publications.
- Payne, B. K., Vuletich, H. A., & Lundberg, K. B. (2017). The bias of crowds: How implicit bias bridges personal and systemic prejudice. *Psychological Inquiry*, 28(4), 233-248.
<https://doi.org/10.1080/1047840X.2017.1335568>
- Pettigrew, T. F. (1997). Generalized intergroup contact effects on prejudice. *Personality & Social Psychology Bulletin*, 23(2), 173-185. <https://doi.org/10.1177/0146167297232006>
- Pettigrew, T. F. (1998). Intergroup contact theory. *Annual Review of Psychology*, 49(1), 65-85.
<https://doi.org/10.1146/annurev.psych.49.1.65>
- Pettigrew, T. F., & Tropp, L. R. (2006). A Meta-Analytic Test of Intergroup Contact Theory. *Journal of Personality and Social Psychology*, 90(5), 751-783.
<https://doi.org/10.1037/0022-3514.90.5.751>
- Pettigrew, T. F., & Tropp, L. R. (2008). How does intergroup contact reduce prejudice? Meta-analytic tests of three mediators. *European Journal of Social Psychology*, 38(6), 922-934.
<https://doi.org/10.1002/ejsp.504>

- Pettigrew, T. F., Tropp, L. R., Wagner, U., & Christ, O. (2011). Recent advances in intergroup contact theory. *International Journal of Intercultural Relations*, 35(3), 271-280.
<https://doi.org/10.1016/j.ijintrel.2011.03.001>
- Quillian, L., Pager, D., Hexel, O., & Midtbøen, A. H. (2017). Meta-analysis of field experiments shows no change in racial discrimination in hiring over time. *Proceedings of the National Academy of Sciences - PNAS*, 114(41), 10870-10875.
<https://doi.org/10.1073/pnas.1706255114>
- Reingold, E. M., & Merikle, P. M. (1988). Using direct and indirect measures to study perception without awareness. *Perception & Psychophysics*, 44(6), 563-575.
<https://doi.org/10.3758/BF03207490>
- Rosenthal, R. (1979). The file drawer problem and tolerance for null results. *Psychological Bulletin*, 86(3), 638-641. <https://doi.org/10.1037/0033-2909.86.3.638>
- Scacco, A., & Warren, S. S. (2018). Can social contact reduce prejudice and discrimination? Evidence from a field experiment in Nigeria. *The American Political Science Review*, 112(3), 654-677. <https://doi.org/10.1017/S0003055418000151>
- Scheffé, H. (1953). A method for judging all contrasts in the analysis of variance. *Biometrika*, 40(1-2), 87-110. <https://doi.org/10.1093/biomet/40.1-2.87>
- Schober, P., Boer, C., & Schwarte, L. A. (2018). Correlation coefficients: Appropriate use and interpretation. *Anesthesia & Analgesia*, 126(5), 1763-1768.
<https://doi.org/10.1213/ANE.0000000000002864>
- Schuette, R. A., & Fazio, R. H. (1995). Attitude accessibility and motivation as determinants of biased processing: A test of the MODE Model. *Personality and Social Psychology Bulletin*, 21(7), 704-710. <https://doi.org/10.1177/0146167295217005>

- Shook, N. J., & Fazio, R. H. (2008). Interracial roommate relationships: An experimental field test of the contact hypothesis. *Psychological Science, 19*(7), 717-723.
<https://doi.org/10.1111/j.1467-9280.2008.02147.x>
- Sian, S. (2007). Patterns of prejudice: Social exclusion and racial demarcation in professional accountancy in Kenya. *Accounting Historians Journal, 34*(2), 1-42.
<https://doi.org/10.2308/0148-4184.34.2.1>
- Stephens, K., & Baskerville, R. L. (2020). The impact of implicit bias on business-to-business marketing. *The Journal of Business & Industrial Marketing, 35*(10), 1517-1525.
<https://doi.org/10.1108/JBIM-01-2019-0019>
- Swart, H., Hewstone, M., Christ, O., & Voci, A. (2010). The impact of crossgroup friendships in South Africa: Affective mediators and multigroup comparisons. *Journal of Social Issues, 66*(2), 309-333. <https://doi.org/10.1111/j.1540-4560.2010.01647.x>
- Swart, H., Hewstone, M., Christ, O., & Voci, A. (2011). Affective mediators of intergroup contact: A three-wave longitudinal study in South Africa. *Journal of Personality and Social Psychology, 101*(6), 1221-1238. <https://doi.org/10.1037/a0024450>
- Tabachnick, B. G., & Fidell, L. S. (2019). *Using multivariate statistics* (Vol. 7). Pearson.
- Towles-Schwen, T., & Fazio, R. H. (2006). Automatically activated racial attitudes as predictors of the success of interracial roommate relationships. *Journal of Experimental Social Psychology, 42*(5), 698-705. <https://doi.org/10.1016/j.jesp.2005.11.003>
- Turner, R. N., Hewstone, M., & Voci, A. (2007). Reducing explicit and implicit outgroup prejudice via direct and extended contact: The mediating role of self-disclosure and intergroup anxiety. *Journal of Personality and Social Psychology, 93*(3), 369-388.
<https://doi.org/10.1037/0022-3514.93.3.369>

- Turner, R. N., Hewstone, M., Voci, A., & Vonofakou, C. (2008). A test of the extended intergroup contact hypothesis: The mediating role of intergroup anxiety, perceived ingroup and outgroup norms, and inclusion of the outgroup in the self. *Journal of Personality and Social Psychology*, 95(4), 843-860. <https://doi.org/10.1037/a0011434>
- U.S. Bureau of Labor Statistics. (2014). *Geographic information by census region*. Retrieved January 22, 2023 from <https://www.bls.gov/regions/>
- United States Census Bureau. (2020). *QuickFacts*.
<https://www.census.gov/quickfacts/fact/table/US/PST045221>
- Upton, D. R., & Arrington, C. E. (2012). Implicit racial prejudice against African-Americans in balanced scorecard performance evaluations. *Critical Perspectives on Accounting*, 23(4-5), 281-297. <https://doi.org/10.1016/j.cpa.2012.01.002>
- Vezzali, L., & Capozza, D. (2011). Reducing explicit and implicit prejudice toward disabled colleagues: Effects of contact and membership salience in the workplace. *Life Span and Disability*, 14(2), 139-162.
- Vezzali, L., & Giovannini, D. (2011). Intergroup contact and reduction of explicit and implicit prejudice toward immigrants: A study with Italian businessmen owning small and medium enterprises. *Quality & Quantity*, 45(1), 213-222. <https://doi.org/10.1007/s11135-010-9366-0>
- Voci, A., & Hewstone, M. (2003). Intergroup contact and prejudice toward immigrants in Italy: The mediational role of anxiety and the moderational role of group salience. *Group Processes & Intergroup Relations*, 6(1), 37-54.
<https://doi.org/10.1177/1368430203006001011>

Weisenfeld, L. W., & Robinson-Backmon, I. B. (2001). Minority accountants' views on gender and race biases, career limitations and suggestions for undergraduate educational institutions. *Journal of Accounting Education*, 19(3), 163-187.

[https://doi.org/10.1016/S0748-5751\(01\)00017-3](https://doi.org/10.1016/S0748-5751(01)00017-3)

Weisenfeld, L. W., & Robinson-Backmon, I. B. (2007). Upward mobility and the African American accountant: An analysis of perceived discrimination, perceived career advancement curtailment, and intent to remain. *Accounting and the Public Interest*, 7, 26-49. <https://doi.org/10.2308/api.2007.7.1.26>

Williams, R. M., Jr. (1947). *The reduction of intergroup tensions: A survey of research on problems of ethnic, racial, and religious group relations*. Social Science Research Council.

Zhang, C. (2019). Intelligent process automation in audit. *Journal of Emerging Technologies in Accounting*, 16(2), 69-88. <https://doi.org/10.2308/jeta-52653>

Zippia: The Career Expert. *Audit Manager Demographics and Statistics In The US*. Retrieved July 20, 2022 from <https://www.zippia.com/audit-manager-jobs/demographics/>

Zippia: The Career Expert. *Audit Partner Demographics and Statistics In The US*. Retrieved January 23, 2023 from <https://www.zippia.com/audit-partner-jobs/demographics/>

Zippia: The Career Expert. *Audit Senior Demographics and Statistics In The US*. Retrieved October 27, 2022 from <https://www.zippia.com/senior-auditor-jobs/>

Zippia: The Career Expert. *Audit Staff Demographics and Statistics In The US*. Retrieved November 1, 2022 from <https://www.zippia.com/staff-auditor-jobs/demographics/>

Appendix A

Study Materials

CFO with a Black-Sounding Name Manipulation

Please assume the role of audit manager for a client called 'MicroClone Inc.', a manufacturer of IBM-compatible personal computers.

The senior on your audit who reports directly to you, has extensively analyzed the company's finished goods inventory. 25% (2,000 units) of the finished goods inventory is comprised of 4th generation computers and the remaining 75% (6,000 units) is represented by 5th generation computers (the latest microprocessor chip available on the market). MicroClone's inventory of 2,000 units of 4th generation computers is presently valued at cost (\$1,000 per unit), for a total of \$2,000,000.

The senior on the audit, who reports to you, has identified what might be a problem concerning the 4th generation inventory: During the fourth quarter, MicroClone began shipping personal computers using the 5th generation chips. The senior is therefore concerned that the value of the 4th generation computers remaining in the inventory might be overstated.

After listening to these issues, you are also concerned about a potential over-valuation problem because 4th generation computers will eventually become obsolete by industry standards. Current analyses suggest that each 4th generation computer in the inventory should be valued at \$800, not \$1,000. Thus, you believe that MicroClone's estimate of 4th generation computers could be overstated by as much as \$200 per unit, yielding a potential over-valuation of \$400,000—at most.

You have decided to take the inventory issue directly to Tyrone, the chief financial officer (CFO) of MicroClone. Tyrone possesses a CPA and a Master's degree, and he has 15 years of accounting experience.

Your aim is to discuss with Tyrone the appropriate over-valuation estimate, which can range from \$0 to \$400,000.

You have asked Tyrone to explain his point of view regarding the 4th generation issue by sending him an e-mail message with the following content:

Dear Tyrone,

I have some questions about the finished goods inventory. Specifically, I want to ask you about the \$2 million valuation of the 4th generation microcomputers. By industry standards, the 4th generation computers will likely become obsolete as the new, faster 5th generation models become more widely adopted.

According to your records, about 25 percent (2,000 units) of your company's finished goods inventory is in 4th generation models, which are valued at \$1,000 each, for a total inventory valuation of \$2,000,000.

Based on my preliminary analysis, your 4th generation computers might be over-valued by around \$200 per unit. Therefore, the finished goods inventory appears to be overvalued by \$400,000 at the most, which means that your pre-tax profits also could be overstated by that amount.

Although \$400,000 is not material to your financial statements as a whole, I am nevertheless very concerned about this potential over-valuation situation.

Yours sincerely,

Please go to the next screen after you have carefully read the case.
Continue button

Summary

Based on your preliminary analysis, MicroClone values their 4th generation computers at \$1,000 per unit. However, the senior on the audit and you believe the 2,000 units of 4th generation computers could be overstated by as much as \$200 per unit. Accordingly, please respond to the following statement.

Given the available information and realizing that you have yet to receive a response from Tyrone, if you had to make a recommendation at this point, by how much would you recommend MicroClone write down their 4th generation inventory (between \$400,000 and \$0)?
\$ _____

Please continue to the next screen after you have responded to this question.

Continue button.

Responses from the CFO

You have just received Tyrone's responses to the issues that you raised in your initial communication.

The following pages will display the e-mail responses by Tyrone, where he provides evidence in favor of a lower write-down than the one you may have just suggested. Please read these e-mails carefully and then respond to the following questions.

Continue button.

Please read the e-mail message carefully. You may read the message as many times as you like.

From: Tyrone

The 5th generation computers are not stable yet. Our marketing manager confirms in an internal memo that the 5th generation computers seem to suffer from an overheating problem, and suggests to advise customers to continue buying 4th generation computers. As a result, I don't expect sales volume for the 4th generation computers to be affected by the introduction of 5th generation computers, thus 4th generation sales should remain stable over the next year.

Please click the below button to continue after you have carefully read the message.
Continue button.

Please read the e-mail message carefully. You may read the message as many times as you like.

From: Tyrone

There are export markets for the 4th generation computers where we can sell them at our existing selling price. Our head of customer service confirms in an internal memo that orders for 4th generation computers in secondary markets are expected to grow in the coming year.

Please click the below button to continue after you have carefully read the message.
Continue button.

Please read the e-mail message carefully. You may read the message as many times as you like.

From: Tyrone

Our 4th generation computers can soon be upgraded with 5th generation chips, which will increase 4th generation performance to an equivalent of 5th generation computers. In a recent internal memo, our technical manager confirms that the technical means might soon be available to update 4th generation machines to 5th generation computers at a minimal cost. Given the upgradeability, we should be able to sell these computers at the same price as 5th generation computers.

Please click the below button to continue after you have carefully read the message.
Continue button.

Please read the e-mail message carefully. You may read the message as many times as you like.

From: Tyrone

We estimate that 65% of our customers primarily use the Microsoft Office Suite. However, our sales manager writes in a recent internal memo that the Microsoft Office Suite has not yet been fully upgraded for 5th generation computers. Hence, the potential of the new processors cannot be fully realized yet and heavy Microsoft Office users will likely continue buying the less expensive 4th generation computers.

Please click the below button to continue after you have carefully read the message.
Continue button.

Please read the e-mail message carefully. You may read the message as many times as you like.

From: Tyrone

One of our competitors—MilleniCom—is currently out of stock of 4th generation computers. MilleniCom is considering buying a large number of our 4th generation computers at our current selling price. My sales manager told me that a memo from MilleniCom's Purchasing Manager just arrived to inquire how many computers we have in stock.

Please click the below button to continue after you have carefully read the message.
Continue button.

You have now received the additional information from Tyrone.

Recall that MicroClone's inventory consists, in part, of 2,000 units of 4th generation computers currently valued at \$1,000 each, for a total valuation of \$2,000,000.

Based on the information received from Tyrone, it is your task to provide a final judgment concerning the amount that should be written down by MicroClone (between \$0 and \$400,000).

Please respond to the following question.

Having read Tyrone's position on this matter, by how much would you recommend MicroClone to write down their 4th generation inventory (between \$400,000 and \$0)?

(Recall, the CFO, Tyrone has a CPA and a Master's degree, and he has 15 years of accounting experience.)

\$_____

Continue button.

CFO with a White-Sounding Name Manipulation

Please assume the role of audit manager for a client called 'MicroClone Inc.', a manufacturer of IBM-compatible personal computers.

The senior on your audit who reports directly to you, has extensively analyzed the company's finished goods inventory. 25% (2,000 units) of the finished goods inventory is comprised of 4th generation computers and the remaining 75% (6,000 units) is represented by 5th generation computers (the latest microprocessor chip available on the market). MicroClone's inventory of 2,000 units of 4th generation computers is presently valued at cost (\$1,000 per unit), for a total of \$2,000,000.

The senior on the audit, who reports to you, has identified what might be a problem concerning the 4th generation inventory: During the fourth quarter, MicroClone began shipping personal computers using the 5th generation chips. The senior is therefore concerned that the value of the 4th generation computers remaining in the inventory might be overstated.

After listening to these issues, you are also concerned about a potential over-valuation problem because 4th generation computers will eventually become obsolete by industry standards. Current analyses suggest that each 4th generation computer in the inventory should be valued at \$800, not \$1,000. Thus, you believe that MicroClone's estimate of 4th generation computers could be overstated by as much as \$200 per unit, yielding a potential over-valuation of \$400,000—at most.

You have decided to take the inventory issue directly to Matthew, the chief financial officer (CFO) of MicroClone. Matthew possesses a CPA and a Master's degree, and he has 15 years of accounting experience.

Your aim is to discuss with Matthew the appropriate over-valuation estimate, which can range from \$0 to \$400,000.

You have asked Matthew to explain his point of view regarding the 4th generation issue by sending him an e-mail message with the following content:

Dear Matthew,

I have some questions about the finished goods inventory. Specifically, I want to ask you about the \$2 million valuation of the 4th generation microcomputers. By industry standards, the 4th generation computers will likely become obsolete as the new, faster 5th generation models become more widely adopted.

According to your records, about 25 percent (2,000 units) of your company's finished goods inventory is in 4th generation models, which are valued at \$1,000 each, for a total inventory valuation of \$2,000,000.

Based on my preliminary analysis, your 4th generation computers might be over-valued by around \$200 per unit. Therefore, the finished goods inventory appears to be overvalued by

\$400,000 at the most, which means that your pre-tax profits also could be overstated by that amount.

Although \$400,000 is not material to your financial statements as a whole, I am nevertheless very concerned about this potential over-valuation situation.

Yours sincerely,

Please go to the next screen after you have carefully read the case.
Continue button

Summary

Based on your preliminary analysis, MicroClone values their 4th generation computers at \$1,000 per unit. However, the senior on the audit and you believe the 2,000 units of 4th generation computers could be overstated by as much as \$200 per unit. Accordingly, please respond to the following statement.

Given the available information and realizing that you have yet to receive a response from Matthew, if you had to make a recommendation at this point, by how much would you recommend MicroClone write down their 4th generation inventory (between \$400,000 and \$0)?
\$ _____

Please continue to the next screen after you have responded to this question.

Continue button.

Responses from the CFO

You have just received Matthew's responses to the issues that you raised in your initial communication.

The following pages will display the e-mail responses by Matthew, where he provides evidence in favor of a lower write-down than the one you may have just suggested. Please read these e-mails carefully and then respond to the following questions.

Continue button.

Please read the e-mail message carefully. You may read the message as many times as you like.

From: Matthew

The 5th generation computers are not stable yet. Our marketing manager confirms in an internal memo that the 5th generation computers seem to suffer from an overheating problem, and suggests to advise customers to continue buying 4th generation computers. As a result, I don't expect sales volume for the 4th generation computers to be affected by the introduction of 5th generation computers, thus 4th generation sales should remain stable over the next year.

Please click the below button to continue after you have carefully read the message.
Continue button.

Please read the e-mail message carefully. You may read the message as many times as you like.

From: Matthew

There are export markets for the 4th generation computers where we can sell them at our existing selling price. Our head of customer service confirms in an internal memo that orders for 4th generation computers in secondary markets are expected to grow in the coming year.

Please click the below button to continue after you have carefully read the message.
Continue button.

Please read the e-mail message carefully. You may read the message as many times as you like.

From: Matthew

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Please click the below button to continue after you have carefully read the message.
Continue button.

Please read the e-mail message carefully. You may read the message as many times as you like.

From: Matthew

We estimate that 65% of our customers primarily use the Microsoft Office Suite. However, our sales manager writes in a recent internal memo that the Microsoft Office Suite has not yet been fully upgraded for 5th generation computers. Hence, the potential of the new processors cannot be fully realized yet and heavy Microsoft Office users will likely continue buying the less expensive 4th generation computers.

Please click the below button to continue after you have carefully read the message.
Continue button.

Please read the e-mail message carefully. You may read the message as many times as you like.

From: Matthew

One of our competitors—MilleniCom—is currently out of stock of 4th generation computers. MilleniCom is considering buying a large number of our 4th generation computers at our current

selling price. My sales manager told me that a memo from MilleniCom's Purchasing Manager just arrived to inquire how many computers we have in stock.

Please click the below button to continue after you have carefully read the message.
Continue button.

You have now received the additional information from Matthew.

Recall that MicroClone's inventory consists, in part, of 2,000 units of 4th generation computers currently valued at \$1,000 each, for a total valuation of \$2,000,000.

Based on the information received from Matthew, it is your task to provide a final judgment concerning the amount that should be written down by MicroClone (between \$0 and \$400,000).

Please respond to the following question.

Having read Matthew's position on this matter, by how much would you recommend MicroClone to write down their 4th generation inventory (between \$400,000 and \$0)?

(Recall, the CFO, Matthew has a CPA and a Master's degree, and he has 15 years of accounting experience.)

\$ _____

Continue button.

Questionnaire

(Questions appear in random order)

Please respond to the following questions:

1. Check one of the two items:
The CFO was Black.
The CFO was white.
2. The vignette was about which of the following situations:
The proper classification of a leased asset
The potential write-down amount for inventory
The correct reporting of a contingent liability
3. Do you have your CPA license?
Yes
No
4. Do you have experience working full-time in an auditing context?
Yes
No
5. How many years' experience do you have working full-time in auditing? _____
6. How many close friends do you have at work who are Black?
None
One
Between two and five
Between five and ten
More than ten
7. How many close friends do you have outside of work who are Black?
None
One
Between two and five
Between five and ten
More than ten
8. How often do you spend time with Black friends while you are at work?
Never
Occasionally
Sometimes
Quite a lot
All the time

9. How often do you spend time with Black friends outside of work?

- Never
- Occasionally
- Sometimes
- Quite a lot
- All the time

10. What is your age? _____

11. What zip code did you primarily live in from birth to age 18? _____

12. What zip code have you primarily lived in since the age of 18? _____

13. To which gender identity do you most identify?

- Female
- Male
- Non-binary
- Prefer not to answer

14. Which of the following best describes your current position level in the CPA firm?

- Junior
- Senior
- Manager
- Partner
- No longer work/never worked in public accounting

15. Are you of Hispanic, Latino, or Spanish origin?

- Yes
- No

16. How would you describe yourself (you may select more than one, if applicable)?

- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- White
- Other _____

17. Do you have a bachelor's degree in accounting?

- Yes
- No

18. How many years' experience do you have working full-time as an accounting professional?

Continue button.

This research actually focuses on implicit racial bias. The more specific focus is the effect of black- or white-sounding name and impact of intergroup contact with Black individuals on auditor judgments. The research is being conducted in an effort to determine whether the race of the CFO, signaled by use of either a Black-sounding name or a white-sounding name, affects the auditors' judgments in the case. In addition, the research seeks to determine the impact of auditors' contact with Black individuals on the auditors' judgments in the case. To try to obtain unbiased responses, the researcher had to withhold some information at the beginning of the study.

The researcher is analyzing the data on an aggregate, rather than an individual, basis. Therefore, the researcher is not attempting to determine if you specifically have implicit racial bias toward Black individuals. However, if you would like to learn more about implicit bias, you can visit [Project Implicit](#) which will give you the opportunity to take an assessment and explore the topic further.

Now that you understand the true nature of the study, you have the chance to refuse the use of the data collected from you for research purposes. You are free to ask the researcher not to use your data in the study analysis. If you decline to let the researcher use your data, you will still be eligible for the drawing for a \$100 Amazon gift card just as you would if the researcher used your data in the analysis. This is entirely voluntary, but the researcher hopes to analyze as much data as possible to better understand the potential impacts of implicit racial bias within an auditing context. Because this experiment is ongoing, the researcher requests that you not share the true nature and purpose of this experiment with others who might potentially participate in the study.

Check box for withhold consent. Do not use my data.

Check box for provide consent. Use my data.

Thank you for your participation! If you would like to be entered in a drawing for one of five \$100 Amazon gift cards, please e-mail a blank message to Tijerina.Research@gmail.com. Your drawing entry will not compromise your anonymity as it is separate from and cannot be linked to your data submission.

Appendix B

Solicitation E-mail

Hello,

My name is Vanessa Tijerina. I am a doctoral student at George Fox University's Doctor of Business Administration program. I am kindly requesting your participation in a doctoral research study I am conducting to increase our understanding of how auditors make judgments in the course of their work. Eligible participants include those who have obtained a bachelor's degree in accounting.

The study involves completing an experiment that will take approximately 5-10 minutes and will be followed by various demographic and survey questions that should take no more than an additional 5 minutes. Your responses to the questions will remain confidential and anonymous. The collected data will only be used for this study. Participation is completely voluntary and you may withdraw from the study at any time.

As a thank you for participating in the research, you will have the opportunity to be entered in a drawing to receive one of five \$100 Amazon gift cards. Instructions for entering the drawing will be provided at the conclusion of the study. Should you choose to participate, please do not discuss the experiment details with other potential participants.

If you are willing to participate, please read the informed consent letter below. Then click the survey link.

Thanks you for your time and participation!

Vanessa Tijerina
Doctoral candidate
George Fox University

Informed Consent

You are invited to take part in a research study about how auditors make judgments in the course of their work. The researcher is inviting those who have obtained a bachelor's degree in accounting to be in the study. This form is part of a process called "informed consent" to allow you to understand this study before deciding whether to take part.

This study is being conducted by a researcher named Vanessa Tijerina, who is a doctoral student at George Fox University.

Background Information:

The purpose of the study is to better understand the factors that influence the judgments auditors make in the course of their work. For scientific reasons, this consent form does not include all of the information about the research questions being tested. The researcher will give you more information when your participation in the study is over.

Procedures:

If you agree to be in this study, you will be asked to:

- Complete an experiment that will take approximately 5-10 minutes.
- Complete a short survey and some demographic questions, which will likely take less than 5 minutes.
- Refrain from discussing the study details with other potential participants.

Voluntary Nature of the Study:

This study is completely voluntary. Everyone will respect your decision of whether or not you choose to be in the study. No one associated with the study will treat you differently if you decide not to be in the study. Additionally, this study is completely anonymous. No one associated with the study will know if you did or did not participate. If you decide to start the study, you can change your mind later. You can stop at any time.

Risks and Benefits of Being in the Study:

There are no known risks of participating in the study which are greater than those ordinarily encountered in daily life.

The benefits of participation in the study include being a part of furthering the understanding of how auditors make judgments in the course of their work.

Payment:

All participants who complete the study will be eligible to enter a drawing to win one of five \$100 Amazon gift cards. Entering the drawing will not compromise your anonymity as the process to enter the drawing is separate from the collection of study data.

Privacy:

Any information you provide will be kept anonymous. The researcher will not use your personal information for any purposes outside of this research project. Also, the researcher will not include your name or anything else that could identify you in the study reports. Data will be kept secure by password protection and data encryption.

Contacts and Questions:

If you have questions now or at a later time, you may contact the researcher, Vanessa Tijerina, via vtijerina17@georgefox.edu. You can ask any questions you have before you begin the study.

Please print or save this consent form for your records.

Statement of Consent

I have read the above information. I feel I understand the study well enough to make a decision about my involvement. By clicking the link below, I affirm that I meet the eligibility requirements and that I understand and agree to the terms described above. Please indicate your consent by clicking the link below.

Link to Study:

LINK

Appendix C**Institutional Review Board (IRB) Approval**

2221124

6

GEORGE FOX UNIVERSITY HSRC INITIAL REVIEW QUESTIONNAIRE

Title: Effect of Black- or White-Sounding Name and Impact of Intergroup Contact with Black Individuals on Auditor Judgments

Principal Researcher(s): Vanessa Tijerina

Date application completed: October 31, 2022

(The researcher needs to complete the information above on this page.)


COMMITTEE FINDING:

☒ (1) The proposed research makes adequate provision for safeguarding the health and dignity of the subjects and is therefore approved.

☐ (2) Due to the assessment of risk being questionable or being subject to change, the research must be periodically reviewed by the **HSRC** on a _____ basis throughout the course of the research or until otherwise notified. This requires resubmission of this form, with updated information, for each periodic review.

☐ (3) The proposed research evidences some unnecessary risk to participants and therefore must be revised to remedy the following specific area(s) on non-compliance:

☐ (4) The proposed research contains serious and potentially damaging risks to subjects and is therefore not approved.



Chair or designated member

10/31/22

Date