The Effect of Office Discipline Referrals, Race, Gender, and Beginning of the Year Fluency Scores on Reading Comprehension for Fifth Grade Students

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ABSTRACT

This study examined the effect of office discipline referrals (ODR), race, gender, and beginning of the year fluency scores on reading comprehension for fifth grade students at four rural elementary schools in southwest Georgia. Multiple regression analysis was used to determine if the research variables significantly predicted the end of year reading scores. The fifth grade students (N = 517) were classified by race and gender; a beginning of the year oral reading fluency score (BOYORF) and an end of the year oral reading fluency score (EOYORF) were obtained from the *Dynamic Indicators of Basic Early Literacy* program (*DIBELS*). The number of ODRs recorded for each student during the data collection period was retrieved from the student information system (SIS) from each school. BOYORF was a significant predictor of EOYORF scores. When the raw BOYORF and EOYORF scores were coded into the three commonly used *DIBELS* categories (*intensive, strategic,* and *benchmark*) and ODRs were coded into three levels (no ODRs, 1-2 ODRS, and 3 or more ODRs), the Chi-square results showed that ODR level did not have a significant effect on end of year oral reading fluency category for *intensive* and *strategic* students.

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Chapter I

INTRODUCTION

The link between academic difficulties and problem behaviors at school has been well documented (Sanson, Oberklaid, Pedlow, & Prior, 1991; Fleming, Harachi, Cortes, Abbott, & Catalano, 2004). The authors of numerous studies have demonstrated that students who were most frequently the subject of office discipline referrals (ODRs) were usually far behind their peers in reading achievement (Morrison, Anthony, Storino, & Dillon, 2001; Murdock, Anderman & Hodge, 2000; Tobin & Sugai, 1999). In fact, McIntosh (2005) found that reading difficulties in Kindergarten and first grade as measured by the Dynamic Indicators of Basic Early Literacy (*DIBELS*) were predictors of problem behaviors in third and fifth grade. Additionally, as children reached third grade the emphasis turned to *reading to learn* rather than *learning to read* and students who were already struggling in the classroom got further behind and often began exhibiting negative behaviors to avoid class work they found difficult (McIntosh, Sadler, & Brown, 2012).

The discrepancy between what students are expected to know and do at each grade level and their below grade level performance in comparison to their grade-level peers is commonly referred to as the *achievement gap* (Good & Kaminski, 2002). Most often the achievement gap is measured in terms of subgroups based on race/ethnicity and

gender and closing this gap became national policy with the passage of *the No Child Left Behind Act* (NCLB) *of 2001* (NCLB, 2002).

NCLB required schools to disaggregate data from standardized tests in reading and math based on student subgroups (e.g., gender, ethnicity, socio-economic status, and disabilities) and to make concerted efforts to close the existing achievement gaps. Each year performance targets for student achievement in reading and math were specified with an ultimate goal of 100% proficiency by 2014. Schools failing to make Adequate Yearly Progress (AYP) faced increasingly tougher sanctions (Klein, 2011). *Accountability* became the new educational buzzword of the early 21st Century, and student achievement on standardized tests became the primary measure of success or failure (Klein, 2011).

NCLB has not been without its critics and many educators argued that the annual performance objectives for reading and math were unattainable and unrealistic (Klein, 2011). As a result, several states began urging the United States Congress and President Barack Obama to revise the act. While a wholesale revision of NCLB has yet to occur, numerous states received waivers to bypass the act's provisions in 2011. There were strings attached to these waivers, however. States requesting waivers had to meet a number of requirements including the adoption of the Common Core State Standards Initiative (McNeil, 2012). The reform effort driven by the National Governor's Association and the Council of State School Officers has been accepted by 46 states and calls for states to develop *college and career-ready* standards for students (Klein, 2011).

Georgia was one of the states that received a NCLB waiver in 2011, but receiving this waiver has not signaled the end of the accountability movement for any of the 46

states; monitoring the academic achievement and growth on standardized tests for subgroups was still required (Klein, 2011). In fact, Georgia adopted performance targets for a variety of subgroups including Blacks, Whites, Hispanics, Students with Disabilities (SWD), English-Language Learners (ELL), and Economically Disadvantaged (ED) students (Georgia Department of Education, 2012). The performance target for each subgroup increases each year from a baseline year of 2011.

Along with the achievement gap between minorities and non-minorities, Skiba (2003) has demonstrated that a discipline gap exists. Blacks and boys were over-represented in the frequency and amount of discipline referrals, school suspensions, and grade retention (Mendez, Knoff, & Ferron, 2002; Rodney, Crafter, Rodney, & Mupier, 2002; Skiba, Michael, Nardo, & Peterson, 2002). Xia and Kirby (2009) found that a combination of grade retention and frequent suspensions contributed to students deciding to drop out of school altogether.

Verdugo and Glenn (2002) also found that Black students, particularly boys, were referred for ambiguous reasons such as "disrespectful behavior" (p. 13) or because they "appear threatening" (p. 14). Skiba (2003) maintained that White students were most often referred for clear rule violations like smoking, vandalism, truancy, and obscene language, while Black students were commonly referred for subjective reasons like disrespect, excessive noise, and loitering.

Students who missed instruction due to ODRs were typically less successful than students who did not miss instruction because of misbehavior (Xia & Kirby, 2009). Researchers found that many reading comprehension skills such as oral reading fluency (ORF) were only developed through practice and when students were out of the

classroom, they lost the opportunity to sharpen these necessary skills (Good & Kaminski, 2002; Rodney, et al., 2002). Students who lacked ORF skills were likely to struggle in all academic areas (Good & Kaminski, 2002).

Statement of the Problem

Academic difficulties especially with reading comprehension affected all subject areas (Good & Kaminski, 2011b). Students who were already struggling academically got further behind when they missed instructional time due to misbehavior (McIntosh, 2005). Essentially, ODRs contributed to the achievement gap (Gregory, Skiba, & Noguera, 2010). Moreover, multiple researchers have demonstrated that there was an achievement gap and a discipline gap based on race and gender (Arcia, 2007; Miles & Stipek, 2006). Boys and minorities were more frequently the subject of ODRs and they typically lagged behind girls in reading achievement (Moffitt, Caspi, Rutter, & Silva, 2001; Skiba, et al., 2002). Though a link between reading difficulties and missed instructional time has been established, the quantitative relationship between ODRs and reading achievement has not been determined.

Purpose of the Study

The purpose of this study was to examine the effect of office discipline referrals, race, gender, and beginning of the year oral reading fluency (BOYORF) scores on the reading comprehension skills of fifth grade students at four rural elementary schools in southwest Georgia. The impact of ODRs on students classified as *intensive* and *strategic* based on *DIBELS* scores was examined as well. The indicator for reading comprehension was the students' *DIBELS* Oral Reading Fluency (ORF) scores at the end of the 2012-2013 school year. *DIBELS* is a commonly used screening tool to identify the reading and

comprehension skills of students in Kindergarten through sixth grade. Good and Kaminski (2002) found concurrent and predictive validity of *DIBELS*, particularly the measure of oral reading fluency (ORF) with standardized tests which measure comprehension.

In addition to raw ORF scores, many schools categorize students into three groups based on their BOYORF score (*intensive*, *strategic*, and *benchmark*). Good and Kaminski (2002) have determined that *intensive* students read less than 95 words correctly on the BOYORF assessment while *strategic* students read between 96 and 110 words correctly on the BOYORF assessment. *Benchmark* students read more than 111 words correctly on the BOYORF assessment. *Intensive* and *strategic* students normally receive targeted remediation and support (Good & Kaminski, 2002). By the end of the year, students are classified as *intensive* if they read less than 104 words a minute while students are classified as *strategic* if they read between 105 and 129 words a minute; students are classified as *benchmark* if they read more than 130 words a minute (Good & Kaminski, 2002).

The impact of ODRs, race, and gender on reading comprehension for students was analyzed with the ultimate goal of determining whether and to what extent there was an interaction among these variables and which variables predicted the end of the year oral reading fluency score. Student performance on the end of the year *DIBELS* ORF assessments for students who began the year classified as *intensive* and *strategic* was compared to the level of ODRs (no ODRs, 1-2 ODRs, and 3 or more ODRs) they received during the data collection period as well.

Research Questions

The following research questions guided this study:

1. Do office discipline referrals (ODR), race, gender, and BOYORF significantly predict the reading comprehension scores of all fifth grade students on the end of the year (EOY) *DIBELS* assessment?
2. If so, which of these variables have the highest predictive value of EOYORF?
3. For students receiving remediation, is there a statistically significant relationship between office discipline referral categories and end of year reading fluency classification?

Significance of the Study

This study was significant because it examined the link between ODRs, race, gender, and BOYORF scores and the impact on reading comprehension in hopes that educators will recognize the detrimental effect of lost instruction due to ODRs and the importance of early intervention for students with lower BOYORF scores. Additionally, the study attempted to quantify the educational impact of ODRs on reading comprehension; in other words, how did students with varying numbers of ODRs perform from the beginning of the year *DIBELS* assessment to the end of the year assessment? Did students with more ODRs score lower on the EOYORF assessments than students with fewer ODRs and did race, gender, and BOYORF scores play a significant role in student performance? Finally, how did ODRs affect student performance on the EOYORF assessment for those already classified as *intensive* and *strategic*?

Definition of Terms

For the purposes of this study, the following terms are defined.

Office Discipline Referral (ODR). This phrase refers to school-based documentation of a disciplinary incident in which a student violates the student code of conduct and is referred to a school administrator or designee to receive disciplinary consequences. The code of conduct and the consequences for violating the code is specified in the student handbook at each site.

Student Achievement. This is a general term referring to how a student performs compared to other students or against specified criteria. For this study, student achievement will refer to student scores on the *DIBELS* Oral Reading Fluency (ORF) assessment, which is a measure of reading fluency and accuracy. The student is provided three grade level reading passages and is given one minute to read each. The examiner counts the number of words read correctly (WRC). The median number of WRC represents the student's ORF score. The ORF score will be the measure of student achievement.

Reading Comprehension. This phrase refers to the ability to derive meaning and understanding from a passage of text. Reading comprehension includes the ability to recognize words and to read a passage of text with fluency and accuracy. Generally, reading comprehension is the ability to understand what one has read.

Dynamic Indicators of Basic Early Literacy (*DIBELS*). *DIBELS* is a commonly used screening tool for students in Kindergarten through sixth grade. Good and Kaminski developed the program in the late 1980s at the University of Oregon and it has been used in thousands of schools across the United States (Good & Kaminski, 2002). *DIBELS*

contains several assessments that measure skills such as phonemic awareness, nonsense word fluency, segmentation, oral reading fluency, and retell fluency

Oral Reading Fluency (ORF). This term refers to the ability to read a passage aloud with fluency and accuracy. ORF is a component of the reading program *DIBELS* and is administered individually to students at the beginning, middle, and end of the school year by a trained examiner who uses a standardized process to assess the student.

Race. This term refers to the physical characteristics, especially skin color, that distinguishes one group of people from another. In the United States, race is typically a distinction between the majority group (Whites) and minority groups (Black, Hispanic, Asian, and other groups). Race differs from ethnicity in that ethnicity often includes a common region or country of origin, a common language, and a common culture. In this study, race will refer to the classification of Whites as non-minority and all other groups as minority.

Intensive. This term refers to readers who read less than 95 words per minute on the beginning of the year oral reading fluency assessment (BOYORF) and less than 104 words per minute on the end of year oral reading fluency assessment (EOYORF).

Strategic. This term refers to readers who read between 96 and 110 words per minute on the beginning of the year oral reading fluency assessment (BOYORF) and between 105 and 129 words per minute on the end of year oral reading fluency assessment (EOYORF).

Benchmark. This term refers to readers who read more than 111 words per minute on the beginning of the year oral reading fluency assessment (BOYORF) and more than 130 words per minute on the end of year oral reading fluency assessment (EOYORF).

Research Design

Quantitative research was used in this study, specifically a correlation study to determine the impact of ODRs, race, gender, and BOYORF on reading comprehension as measured by *DIBELS*. Multiple regression analysis was used to determine if a correlation existed between the variables. The EOYORF scores were analyzed to determine whether or not the differences in the scores were statistically significant based on the number of ODRs, race, gender, and BOYORF. After regression analysis was conducted, BOYORF and EOYORF scores were coded into the three commonly used categories for *DIBELS* (*intensive*, *strategic*, and *benchmark*). ODRs were coded into three categories as well (no ODRs, 1-2 ODRs, and 3 or more ODRs). A Chi-square test was run to determine the existence of a relationship between the end of year category (EOYCAT) for *intensive* and *strategic* students and ODR level. The Chi-square test is "based on a comparison between expected frequencies and actual, obtained frequencies" (Fraenkel & Wallen, 2009, p. 234).

There were limitations to this type of research, however. A number of factors other than the variables in a study can contribute to relationships that are found to exist in correlational research including the characteristics of the subjects, the location of the study, the instrumentation used in the study, test administration issues (if applicable), data collector characteristics, data collector bias, and mortality (Fraenkel & Wallen, 2009). In any type of research, though, completely removing all internal and external threats to validity is an unattainable goal. Researchers should instead strive to minimize the impact of these threats.

Methodology

Since the purpose of this study was to examine the effect of ODRs, race, gender, and BOYORF on reading comprehension, the independent variables in this study were ODRs, race, gender, and BOYORF while the dependent variable was reading comprehension as measured by the *DIBELS* EOYORF assessment. The sample for this study was the fifth grade students enrolled at four rural elementary schools in southwest Georgia during the 2012-2013 school term. The four schools were chosen because they were similar demographically. Each site had a student population that was between 65% and 78% minority and 70% to 85% economically disadvantaged. Economically disadvantaged students were those eligible for *Free or Reduced Lunch* prices.

The measure of reading comprehension in this study was the student scores on the *DIBELS* EOYORF assessments. Though students were given the *DIBELS* benchmark three times a year, only data from the beginning of the year and end of the year assessment were used in this study. The *DIBELS* data were collected for each of the fifth grade students. Multiple regression analysis was used to determine if a correlation existed between the variables. A Chi-square test was used to assess whether a relationship existed between EOYCAT for *intensiv*e and *strategic* students and ODR level (ODRLEV). For the purposes of confidentiality, the names of the students in the sample were not revealed. In the data collection tables, students were identified as either a boy or girl and as a minority or non-minority.

ODRs were the instrument used to measure student behavior at each site. Teachers and other school personnel generally submitted ODRs when a student violated the school's code of conduct. The principal, assistant principal, or designee administered

consequences. The discipline records were maintained in the electronic student information system (SIS). In this study, the SIS for each of the four schools was the software program Infinite Campus at three sites and Powerschool at one site.

Potential Limitations

There were anticipated limitations to this study. *DIBELS* was designed to measure reading ability in kindergarten through sixth grade, but only fifth grade students were included in the sample. In addition, the students in the study were from four rural elementary schools in southwest Georgia with high rates of poverty and large minority student populations. However, these factors did not have a significant impact on the findings because the sample was directly tied to the purpose of the study: to examine the effect on ODRs by race and gender on the reading comprehension of fifth grade student in a rural, high poverty, high minority school setting. The similar racial, socio-economic, age and academic characteristics of the students in the sample minimized the threats to internal validity as well.

ORF was a reliable and valid measure of reading ability, which was correlated to reading scores on standardized tests (Good & Kaminski, 2002). While ORF was associated with measuring reading comprehension, it actually measured the number of words a student read with accuracy and fluency in one minute. It was possible that a student was able to call words fluently without deriving meaning from the reading passage (Dewitz & Dewitz, 2003).

Different examiners assessed the students at the four schools in the sample. It was even possible that the students at each site had a different examiner for the beginning of the year and end of year assessment. The time of day and location of the assessments varied within schools and between each of the sites. These were logistic issues that could

not be controlled, but the standardized process associated with the *DIBELS* ORF administration minimized the impact of this potential limitation. To address the threat of mortality, students who were missing either a BOY or EOY ORF score were excluded from the results.

While there was likely a link among ODRs by race and gender and reading comprehension, it cannot be conclusively stated that one or more of the independent variables caused academic difficulties. The purpose of this study was simply to examine the relationship between ODRs, race, gender, BOYORF, and reading comprehension, and to explore the impact of ODRs on struggling readers.

Summary and Overview of the Dissertation

Much has been written on the effect of race and gender on ODRs, but this study examined the effect of these variables on reading comprehension. Researchers have demonstrated that there is an achievement gap and a discipline gap for Blacks and boys (Christle, Jolivette, & Nelson, 2007; Costenbader & Markson, 1998; Gregory, 2008; Skiba, 2008). Researchers have also shown that ODRs contribute to a multitude of short term and long-term problems such as lost instructional time, disengagement from school, retention, dropping out of school, and incarceration as adults (Juel, 1988; Reef, Diamantopoulou, Meurs, Verhulst, & Ende, 2010; Sarkees-Wircenski, & Wircenski, 1994). Therefore, the purpose of this study was to explore the relationship between ODRs, race, gender, BOYORF and reading comprehension in hopes of quantifying the impact of ODRs for all students.

The literature on reading difficulties and problem behavior, the achievement gap and the discipline gap, the validity of using ODRs to measure behavior problems, and the validity of ORF to measure comprehension is presented in Chapter 2 of this study. The

exclusionary nature of ODRs and the future negative outcomes associated with school discipline is summarized also.

The methodology of this study is detailed in Chapter 3. Correlational research, specifically multiple regression analysis was used to determine if a relationship existed between ODRs, race, gender, BOYORF, and reading comprehension. A Chi-square test was also used to determine the relationship between end of year category EOYCAT and ODR level (ODRLEV) for *intensive* and *strategic* students. The results of the study are found in Chapter 4 and a discussion and implication of the results is provided in Chapter 5.

Chapter II

LITERATURE REVIEW

Learning to read with fluency and accuracy is a skill that has implications for all other academic subjects in school (Good & Kaminski, 2011b). Students who learn to read for understanding can apply the same comprehension skills in reading to subjects such as science, social studies, and math (Good & Kaminski, 2002). Those who do not develop this skill in elementary school become increasingly at risk for negative outcomes academically and socially, particularly when academic deficits are accompanied by externalizing behavior problems (Fleming, Harachi, Cortes, Abbott, & Catalano, 2004). Students who struggled with reading fluency early in their schooling were likely to experience frustration, a lack of self-esteem, and ultimately a general disengagement from the learning process (Nelson & Roberts, 2000).

Reading Difficulties and Behavior Problems

Rutter and Yule (1970) offered three hypotheses about the relationship between reading difficulties and the onset of behavior problems. They proposed that behavior problems can occur first and contribute to reading problems, that reading difficulties lead to frustration which manifests itself in externalizing behavior problems, and that there are factors such as low intelligence and socio-economic status (SES) that contribute to both (Rutter & Yule, 1970). Sanson, Oberklaid, Pedlow, and Prior (1991) maintained that the two problems acted as risk factors for each other and that difficulties in either domain impacted the other area. Others suggested that behavior problems were born out of a

cycle of academic failure and that these negative externalizing actions were the result of frustration and continued fear of failure (Benner, Nelson, Smith, & Roberts, 2002; Nelson & Roberts, 2000). Halonen, Aunola, Ahonen, and Nurmi (2006) found that students with early reading difficulties first displayed internalizing behaviors through first grade followed by externalizing behaviors as the child progressed through elementary school. Other studies have shown that motivation, metacognition, and psychological factors have an impact on learning as well (Sideridis, Morgan, Botsas, Padeliadu, & Fuchs, 2006; Smith-Bonahue, Larmore, Harman, & Castillo, 2009).

Horn and Packard (1985) conducted a meta-analysis of 58 studies and found that behavior problems preceded reading difficulties and served as predictors for future academic struggles. Similarly, in a longitudinal study, McGee, Williams, Share, Anderson, and Silva (1986) concluded that behavior problems occurred prior to reading problems and that the manifestation of reading difficulties led to more behavior problems. McIntosh, Horner, Chard, Boland, and Good (2006) found that lacking reading skills such as phonological awareness were significant predictors of non-response to positive behavior support systems. Additionally, McIntosh, Sadler, and Brown (2012) suggested that *DIBELS* data should be analyzed in kindergarten in order to identify students who may develop behavior problems in future years.

Moffitt (1993) observed that students who misbehaved typically paid less attention and received less help from the teacher than students who did not display externalizing behavior problems. Moreover, Koth, Bradshaw, and Leaf (2009) reported in their observational study that disruptive students typically did not improve their

behavior after an initial reprimand by the teacher, leading to more reprimands and more lost instructional time for the entire class.

On the other hand, some researchers have argued that reading problems preceded behavior problems and that early reading difficulties were a significant predictor of future behavior concerns (Fleming et al., 2004). McIntosh, Horner, Chard, Boland, and Good (2006) discovered that struggles with phonological awareness for students in kindergarten was a significant predictor of office discipline referrals (ODR) in later elementary grades. Multiple researchers have also shown that early reading difficulties were directly correlated to the start of antisocial and negative behaviors (Cullinan & Epstein, 2001; Hawkins, Catalano, & Miller, 1992; McEvoy & Welker, 2000). Cornwall and Bawden (1992) found that reading difficulties could be contributing factors to the onset of aggressive behaviors.

Still other researchers have concluded that reading and behavior problems co-exist due to neurological conditions that affect learning and behavior (Greenham, 1999; Rourke & Fuerst, 1991). The research literature contained frequent instances where learning disabilities and attention deficit hyperactivity disorder (ADHD) co-occurred (Greenham, 1999; Spencer, Bierderman, & Wilens, 1999). Children with both reading difficulties and ADHD were considerably more at risk for school failure and social difficulties than students without these diagnoses (Mayes, Calhoun, & Crowell, 2000; Weiner, 2004).

Some studies have shown that improving the reading skills of students led to improvements in behavior (Allyon & Roberts, 1974; Coie & Krehbiel, 1984; Kellam, Rebok, Ialongo, & Mayer, 1994). Still others have argued that reading and behavior

problems were bidirectional and causality was less important than remediating both inter-related problems (Hinshaw, 1992; Lepola, Poskiparta, Laakkonen, & Niemi, 2005; Morgan, Farkas, Tufis, & Sperling, 2008; Onatsu-Arvilommi & Nurmi, 2000). Trzesniewski, Moffitt, Caspi, Taylor, and Maughan (2006) concluded that reading problems and behavior problems, though linked were not necessarily caused by each other; both problems were in effect a consequence of genetic and environmental factors such as home life, parent's education level, socio-economic status, and family size.

The Exclusionary Nature of Discipline

Schools face a *double-edged sword* when it comes to administering disciplinary consequences. Christle, Jolivette, and Nelson (2007) showed that the students who were in the most need of instruction were the ones who typically received more ODRs and suspension from school. Students who were suspended did not typically receive academic support during their suspension; over time this lack of support led to alienation from school, less motivation to succeed, distrust of teachers and school officials, and a host of other negative outcomes associated with delinquency (Gregory, et al., 2010; Skiba & Rausch, 2004). Students themselves even reported that suspension bred contempt toward school personnel and that they considered it an ineffective consequence for the behavior that led to the suspension in the first place (Costenbader & Markson, 1998). In sum, the disciplinary practices of schools may be contributing to the achievement gap while also increasing the risk of future antisocial behavior (Davis & Jordan, 1994; Herrenkohl, Guo, Kosterman, Hawkins, Catalano, & Smith, 2001).

Fields (2003) concluded that ODRs also served as means of relieving pressure or tension that develops between students and teachers. When teachers need *relief* from a

particular student's behavior the child was sent to an administrator for disciplinary consequences; if the incident was severe or the student was frequently the subject of ODRs the administrator may have decided to remove the student from school for a time thereby relieving pressure on the school itself (Gonczi, 2002).

It was not uncommon for half of all students to view their teachers and administrators as adversaries by the end of primary school (Glasser, 1998). If students perceived that their teachers did not like them, they typically behaved in ways that lead their teachers to confirm their suspicions; teachers reacted negatively to the misbehavior, which the child misinterpreted as a negative reaction to him or her (Jones & Jones, 2001). Once a *power struggle* developed between the students and teacher, effective instruction and learning could not take place, and most infractions occurred in classrooms where students reported not liking their teachers (Aspy & Roebuck, 1977).

Varying degrees of patience by teachers and *zero-tolerance* policies contributed to an abundance of ODRs for seemingly trivial matters like not having homework, tardiness, or dress code violations (Safran & Safran, 1984). Skiba (2003) suggested that the disparities in discipline have increased with the advent of *zero-tolerance* policies implemented by most school districts nationwide. Such policies stated that anything that could be used as a weapon *was* a weapon. As an example, Skiba (2003) reported that when a riot broke out at a football game in Decatur, Illinois, in September 1997, seven students, all Black boys, were expelled from school for 2 years for violating the school's zero-tolerance policy. Though this was a first offense for the seven students and no weapons were used the 2 year expulsion was upheld by the Decatur School board and circuit judge, Robert McLosky (Skiba, 2003).

The authors of one 2002 study concluded that "exclusion from the classroom has too often replaced good teaching and classroom management as the first-choice remedy for difficult student behavior" (The Applied Research Center, 2002, p. 3). Following the massacre at Columbine High School in April 1999, schools were becoming increasingly vigilant and much more likely to suspend students who had been referred by the classroom teacher (Skiba, 2003).

How many students have been affected by ODRs and suspensions? Skiba, Michael, Nardo, and Peterson (2002) found that as many as 40% of all public school students received at least one ODR during their school careers. Aud, Fox, and Kewal-Ramani (2010) found that 21.6% of all sixth through twelfth grade students nationwide were suspended at least once and that 42.8% of suspended students were Black.

Behavior Problems in School and Future Negative Outcomes

The research literature is replete with studies demonstrating that children who exhibited externalizing behavior problems in schools were more likely to experience negative outcomes as young adults such as delinquency, school failure, dropping out of school, substance abuse, unemployment, homelessness, and incarceration (Juel, 1988; Reef, Diamantopoulou, Meurs, Verhulst, & Ende, 2010; Sarkees-Wircenski, & Wircenski, 1994). Menting (2011) maintained that children with reading and language difficulties struggled to control their emotions, to understand social nuances, and to communicate effectively with peers and that these deficits contributed to externalizing behaviors. Fleming, Harachi, Cortes, Abbott, and Catalano (2004) found that there was a negative correlation between academic achievement and delinquency.

Reading Difficulties, Behavior Problems, and Gender

In numerous studies and through anecdotal observations, boys have demonstrated more reading and behavior problems than girls have (Moffitt, et al., 2001; Mullis, Martin, Kennedy, & Foy, 2007). Boys were also more likely to be diagnosed with ADHD, which was a strong predictor of reading difficulties and externalizing behavior problems (Hinshaw, 1992). Shaywitz, Shaywitz, Fletcher, and Escobar (1990) reported that boys were four times as likely as girls to be diagnosed with ADHD. Inattentiveness and hyperactivity were strongly associated with poor reading ability regardless of gender (Maughan, Pickles, Hagell, Rutter, & Yule, 1996).

Girls with reading difficulties were more likely to demonstrate internalizing behavior concerns while boys with reading difficulties were much more likely to show aggressive and antisocial behavior (Willcutt, Betjemann, Pennington, Olson, DeFries, & Wadsworth, 2007). Nationwide, boys comprised 71% of all referrals leading to school suspensions in 2002 and that percentage has remained constant for the past 30 years (Skiba & Rausch, 2004). Skiba, Michael, Nardo, and Peterson (2002) reported that every study of gender and school discipline has demonstrated that "boys are referred to the office and receive a range of disciplinary consequences at a significantly higher rate than girls" (p. 4).

To illustrate, the Knox County School System in Tennessee conducted a study and found that boys were twice as likely to be referred and suspended as girls. "Of…11,249 infractions, 70% were male and 30% female. Boys were [more] likely to receive a more severe penalty for similar offenses" than girls (Racial Disparity in School Discipline Task Force, 2007, p. 5). Krueger and Severson (2008) reported similar

findings; in their analysis at a Midwestern middle school boys constituted 74% of discipline referrals compared to 26% for girls. Other researchers also demonstrated that "while teachers are more gentle toward girls, they interact with boys in a more robust way" and "teachers were also likely to believe in the use of more power toward the misbehaving male students than the misbehaving female students" (Erden & Wolfgang, 2003, pp. 8-9).

Disproportionate Discipline

Disproportionate discipline based on race has been explored in multiple studies. Townsend (2000) reported that Black students were suspended three times more than any other ethnic group. Several other researchers have also found that Blacks were the subject of ODRs more frequently than other groups (Christle, Jolivette, & Nelson, 2007; Costenbader & Markson, 1998; Gregory, 2008; Skiba, 2008). Skiba, Michael, Nardo, and Peterson (2002) found that boys and Black students were over-represented in every category of school discipline. In addition, researchers demonstrated that Black students, particularly boys, were referred for ambiguous reasons like "disrespectful behavior" or because they "appear threatening" (Verdugo & Glenn, 2002, p. 13). Skiba (2003) maintained that White students were most often referred for clear rule violations such as smoking, vandalism, truancy, and obscene language, while Black students were commonly referred for subjective reasons like disrespect, excessive noise, and loitering.

Rodney, Crafter, Rodney, and Mupier (2002) argued that Blacks were the subjects of discipline referrals at rates disproportionate to their total enrollment. In some school districts, Blacks were referred three to five times more often than White students were referred (Leary, 2003). For example, in San Diego, California, for the 1999-2000 school

year, over half of the students disciplined were Black, 37% were Latino, and only 24% were White (Applied Research Center, 2002). In nineteen middle schools in urban areas in the upper Mid-West, Skiba (2003) found that though Blacks comprised 60% of the school populations, they accounted for 70% of all referrals, 70% of all suspensions, and 80% of all expulsions.

Vincent (2012) reported that Black students also missed more days of instruction due to discipline than White students; White students were under-represented in all disciplinary actions when compared to their overall enrollment in the school population. Additionally, students with disabilities, particularly minorities, lost more days of instruction due to discipline than their non-disabled White peers (Vincent, 2012).

According to Skiba (2003), both race and gender played a role in discipline referrals and suspensions. In the United States, 53% of all students referred and subsequently suspended were Black boys, though they constituted only 28% of total student enrollment; Black girls accounted for 28.3% of all referrals and suspensions, while White boys and girls comprised only 2.5% and .7% of all referrals and suspensions, respectively (Skiba, 2003).

Research literature on whether the disproportionate discipline of Black boys is the result of some deep-seeded racism is contradictory (Skiba, 2003; Vavrus & Cole, 2002; Verdugo & Glenn, 2002), but Monroe (2006) maintained that the way teachers responded to Black boys was markedly different from their responses to behavior problems by other groups of students. Teachers often tried to control Black boys more rigidly than White boys, believing that they were not sufficiently disciplined at home (Skiba, 2003). Monroe (2006) argued further that Black boys were referred more than other ethnic

groups because White teachers lacked an understanding and/or appreciation of Black culture.

Skiba, et al., (2002) contended that the reasons Black boys were most often referred (e.g., disrespect, loitering, excessive noise, and threats) were highly subjective; the individual referring agent defined the behavior based on perception. Additionally, the researchers argued that no evidence existed that Black boys were more disruptive than White students. His extensive research on the subject convinced Skiba (2003) that racial bias was present in American classrooms and that teachers who over-referred minorities were doing so out of a cultural misunderstanding. According to Vavrus and Cole (2002), referrals were generally the result of singling out one disruptive behavior among many, and that often the process of identifying disruptive behavior affected students who were of a different race and or gender than the teacher.

It could be suggested that school administrators were to blame for the disproportionate discipline of Black students since ultimately they decided the fate of referred students. Skiba, et al., (2002), however, held that school administrators were not the source of disproportionate discipline because they only dealt with the referrals that were sent to them by classroom teachers. Monroe (2006) argued that charges of *racial profiling* were groundless because in school districts where administrators were minorities, the disciplinary statistics remained at or above the national mean.

Nevertheless, Monroe (2006) found that minority students often contended that rules were enforced arbitrarily to remove students that teachers did not like, and that the over-representation of Blacks in student referrals was both conscious and deliberate on the part of White teachers. Some Black students even maintained that they were

provoked into hostility by an inconsistent enforcement of classroom and school rules (Monroe, 2006).

Validity of using ODRs to Measure Discipline

ODRs were frequently used to assess behavior in schools and have the potential to shape school policy (McIntosh, Frank, & Spaulding, 2010; Sugai, et al., 2000). ODRs have also been used to identify school wide patterns in student behavior and to monitor progress for students receiving behavior interventions (Jolivette & Nelson, 2010; Taylor-Green & Kartub, 2000). Others have found that ODRs possessed strong predictive validity as they related to future negative outcomes (McIntosh, Flannery, Sugai, Braun, & Cochrane, 2008). In addition, ODRs were considered a valid and reliable index of student behavior even though their use varied from school to school and across the nation (Irvin, 2004).

Studies on the use of ODRs in elementary schools have yielded interesting results. Wright (1998) found that the percentages of ODRs in one elementary school were stable, but their use was quite different at another elementary school in the same district. Other researchers found a wide variety in the use of ODRs in different schools at the elementary level with the percentages of students receiving one referral ranging from 10% to 39% (Sugai, et al., 2000). Moreover, several researchers have shown that the amount of ODRs increased as the child aged with the largest number of referrals belonging to fifth grade students (Putnam, Luiselli, Handler, & Jefferson, 2003; Rusby, 2007).

DIBELS ORF as an Indicator of Reading Ability

The Dynamic Indicators of Basic Early Literacy Skills (*DIBELS*) was designed to measure various reading skills for students in Kindergarten through sixth grade. Multiple skills are assessed by *DIBELS* such as initial sounds fluency, phonemic segmentation fluency, nonsense word fluency, oral reading fluency, and retell fluency. Oral reading fluency (ORF) is the primary measure of reading comprehension (Good & Kaminski, 2011b).

The ability to read fluently, defined as the ability to read smoothly, accurately, and with expression, was a vital component of reading comprehension (Hasbrouck & Tindal, 2006; Kuhn & Stahl, 2003). Non-fluent readers often read slowly, without expression, and ignore punctuation; a lack of fluency was correlated with a failure to comprehend what they have read leading students to lose interest in reading altogether over time (Gibson, 2011). Since fluency was associated with practice, readers who did not like to read typically did not develop their fluency skills (Hasbrouck, Ihnot, & Rogers, 1999).

ORF has consistently been found to be a strong predictor of reading comprehension (Fuchs, Fuchs, Hosp, & Jenkins, 2001; Hintze, Shapiro, Conte, & Basile, 1997). Good and Kaminski (2002) reported predictive and concurrent validity coefficients for third and fourth grade students over thirteen separate assessments; the researchers also found that ORF scores were correlated to the Iowa Test of Basic Skills (ITBS) for third grade students.

Buck and Torgeson (2003) compared ORF to the Florida Comprehensive Assessment Test (FCAT) and found high rates of correlation between the scores.

Additionally, the researchers found that neither socio-economic status (SES) nor ethnicity appeared to influence ORF (Free and reduced lunch, $r = .70$; Paid lunch, $r = .69$; White, $r = .70$; Black, $r = .62$; Hispanic, $r = .78$).

Moscovitch (2004) found ORF to be a significant predictor of reading achievement on the Stanford Achievement Test-Tenth Edition (SAT-10). His research also demonstrated that reading classifications based on ORF (*intensive, strategic*, and *benchmark*) did not change for most students after first grade (Moscovitch, 2004). Moscovitch also suggested that ethnicity and SES did have a significant impact on ORF, which is in direct contrast to the work of Buck and Torgeson (2003).

Numerous researchers have found that low SES was often correlated with low reading achievement (Au, 2000; Chall, Jacobs, & Baldwin, 1990; Guthrie & Greaney, 1991; Molfese, Modglin, & Molfese, 2003). Home environment for lower income students may have affected reading achievement as well since many of these students had less access to reading materials in the home and fewer verbal and reading interactions with their parents (Desimone, 2001; Heath, 1991). Bowey (1995) found that lower SES pre-school students were less phonologically aware than wealthier students were. Duncan and Seymour (2000) reported that low SES was correlated with deficits in letter and word identification.

Summary

Reading difficulties affected the other subjects in school, and students who struggled in that area displayed negative internalizing and externalizing behaviors as a result (Fleming et al., 2004; Greenham, 1999; Halonen, et al., 2006). Miles and Stipek (2006) found a link between elementary students with low literacy skills and aggressive

behavior in third and fifth grades. Patterns of negative behavior displayed in elementary school normally continued as low achieving students progressed through middle and high school (Choi, 2007).

Researchers suggested that race and gender were associated with academic and behavior problems with Black students being more at risk than White students and boys being more at risk than girls (Christle, et al., 2007; Costenbader & Markson, 1998; Gregory & Ripski, 2008; Moffitt, et al., 2001; Mullis, et al., 2007; Skiba, 2008). Black boys in particular were more likely than any other demographic group to receive an ODR (Skiba, et al., 2002).

Researchers have shown that ODRs were a valid measure of student behavior (McIntosh, et al., 2010; Sugai, et al., 2000; Taylor-Green, et al., 2000). There was also a predictive element to ODRs related to future behavior problems in school and deviant behavior as an adult (McIntosh, et al., 2008).

The authors of several studies indicated that *DIBELS* ORF was a valid measure of reading comprehension (Fuchs et al., 2001; Hasbrouck & Tindal, 2006; Hintze, et al., 1997; Kuhn & Stahl, 2003). There was a correlation between ORF scores and standardized tests that measured reading achievement (Buck & Torgeson, 2003; Good and Kaminski, 2002; Moscovitch, 2004).

Chapter III

METHODOLOGY

The purpose of this study was to examine the effect of office discipline referrals (ODRs), race, gender, and beginning of the year oral reading fluency (BOYORF) scores on reading comprehension as measured by *DIBELS* end of the year oral reading fluency scores (EOYORF). The effect of ODRs on struggling readers was also explored. The research variables for this study were ODRs, race, gender, and the *DIBELS* ORF for fifth grade students over two administrations of *DIBELS* at four rural elementary schools in southwest Georgia. The assessments were given at the beginning and end of the 2012-2013 school year. ODRs were issued when a student violated the student code of conduct and the behavior was documented by the teacher and placed in the student's permanent record and/or student information system (SIS).

Research Questions

The following research questions guided this study:

1. Do office discipline referrals (ODR), race, gender, and BOYORF significantly predict the reading comprehension scores of all fifth grade students on the end of the year (EOY) *DIBELS* assessment?
2. If so, which of these variables have the highest predictive value of EOYORF?
3. For students receiving remediation, is there a statistically significant relationship between office discipline referral categories and end of year reading fluency classification?

Research Design

Since the purpose of this study was to investigate the possibilities of a relationship between two or more variables, in this case the relationship between ODRs, race, gender, BOYORF and reading comprehension scores, correlation research was used. Correlational research yields a correlational coefficient when a relationship is found to exist between or among the variables in a study (Fraenkel & Wallen, 2009). The coefficient is a decimal number that ranges from -1.00 to + 1.00. Coefficients that are close to + 1.00 indicate that the relationship is positive (high scores on one variable accompany high scores on another variable). A negative coefficient indicates that the relationship is negative (high scores on one variable correlates to low scores on another variable). If the coefficient is .00, there is no relationship between the variables.

Correlational research and the resulting coefficients are used to determine the extent of a relationship between variables and as a means of predicting outcomes (Fraenkel & Wallen, 2009). These coefficients are often used to check the validity and reliability of instruments used in research projects as well (Fraenkel & Wallen, 2009).

Multiple regression analysis was used to determine if there was a correlation between the variables. In this study, ODRs, race, gender, and the beginning of the year ORF scores were the predictor or independent variables and the end of the year ORF scores was the criterion or dependent variable.

There are assumptions associated with multiple regression analysis (Osborne & Waters, 2002). When these assumptions are not met, the results and conclusions of research studies may be invalid and or biased. For example, it is assumed that variables are normally distributed when the points are plotted on a graph; a normal distribution of

variables is commonly referred to as a *bell-shaped curve* (Osborne & Waters, 2002). In SPSS, the normal scatterplot will show if the data are normally distributed. This does not suggest however that all variables will fall within the normal distribution on the histogram. Outliers are those scores that fall well outside the normal distribution indicating that they are an exception to the pattern demonstrated by the normal curve (Fraenkel & Wallen, 2009). Removing outliers may reduce the likelihood that overestimation or underestimation errors will occur, thus making the results more accurate (Osborne & Waters, 2002).

Another assumption is that there is a linear relationship between the independent and dependent variables (Osborne & Waters, 2002). If the relationship is nonlinear then the true relationship between the variables will be underestimated while also increasing the risks that the relationship between other independent variables that share the same variance will be overestimated (Osborne & Waters, 2002). Using Statistical Package for the Social Sciences (SPSS) 18.0, it is easy to determine whether a linear relationship exists among the variables. If the scatterplots are found to be non-linear, either the data must be transformed or a non-linear analysis such as Pearson's correlation should be run using SPSS (Osborne & Waters, 2002).

The addition of independent variables with reliability estimates less than .70 can also lead to inaccurate representations of the *true* relationships between variables (Nunnally, 1978). Variables with lower reliability levels can affect other independent variables causing the variance to be overestimated (Osborne & Waters, 2002). Overestimation errors make the results less accurate and more difficult to generalize.

When two independent variables are highly correlated, the problem of multicollinearity occurs making it difficult to determine which variable more accurately explains the variance found in the dependent variable (Lynch, 1999). This issue can be remedied by either eliminating one of the highly correlated independent variables or combining these variables (Lynch, 1999).

It is also important to have a dependent variable that is measured on a continuous scale. In this study, the dependent variable was the *DIBELS* EOYORF score, which ranged from zero to 200 words read correctly in one minute. During each administration of the *DIBELS* assessment, the student was given three passages to read for one minute each; the examiner counted the number of words read correctly and the median number of words correct and the median number of errors in the three assessments represented the ORF score for the student (Good & Kaminski, 2002).

Two of the independent variables (race and gender) were categorical (minority and non-minority and boy or girl); though *minority* and *non-minority* are not racial groups, the terms will be used to describe non-White students and White students respectively. The independent variable of ODRs was continuous; ODRs were the actual number of discipline referrals (if any) a student received during the data collection. A student who did not receive an ODR during this study had an ODR value of "0."

There is an assumption of homoscedasticity in multiple regression analysis (Osborne & Waters, 2002). Homoscedasticity suggests that the variance of errors is the same across all independent variables (Osborne & Waters, 2002). If the variance error is slightly different then the results should not be significantly impacted, but clear or obvious differences can seriously damage the reliability of the findings (Berry &

Feldman, 1985; Tabachnick & Fidell, 1996). According to Osborne and Waters (2002), visual inspection of the scatter plots and Levene's test in SPSS 18.0 will indicate whether the variables in this study violate the assumption of homoscedasticity.

Sample

The population for this study was all students enrolled at four rural elementary schools in southwest Georgia. During the 2012-2013 school term, the four schools were similar demographically in that 65-78% of the students were minorities, 24-35% of the students were non-minorities. Each school was located in a rural, high minority, high poverty school setting in southwest Georgia.

The schools were also similar in terms of poverty rate in that 70-85% of the students at each site were economically disadvantaged (ED). The number of students who were eligible for *Free or Reduced Lunch* in the National School Lunch Program determined ED status. For the purposes of privacy and confidentiality, the actual names of the schools and towns in which the schools were located were not used.

The sample consisted of all students in the fifth grade at each of the four sites. For the purposes of confidentiality, the names of the students in the sample were not revealed. In the data collection tables, students were classed by ODRs, ORF scores, race, and gender.

Instrumentation

Pas, Bradshaw, and Mitchell (2011) found that ODRs were a valid and reliable measure of problem behavior among students. ODRs were also predictive agents in that students who received multiple ODRs were more likely to experience negative

educational outcomes such as suspension and dropping out of school than students with fewer or no ODRs (McIntosh, et al., 2008).

Discipline data were stored in the school's student information system (SIS) and the four schools in the study used either Powerschool or Infinite Campus to store student data. The data included demographic information, attendance and discipline records, and assessment results for each child.

According to K-12 Solutions (2013), the developers of Infinite Campus, the program is the largest American-owned student information system product in the country, serving 5.3 million students in 43 states. Powerschool is owned by Pearson and the company's website claims that data for over 10 million students in all 50 states and 65 countries are contained in the system (Pearson School Systems, 2013). The pros and cons of these two SIS were not addressed in this study. Demographic, attendance, and discipline data can be collected from either program.

Discipline referrals were recorded by the classroom teachers and sent to an administrator when misbehaviors occurred. Behaviors that led to a discipline referral were specified in the student handbook of each site. The administrator then disciplined the student, generally following the prescribed punishment for the referred behavior, and entered a resolution for the behavior event in Infinite Campus or Powerschool.

Reading comprehension was the dependent variable in this study and measured by the ORF scores on the end of the year *DIBELS* assessment. According to Good and Kaminski (2011b), ORF measures the phonics, word attack skills, reading fluency and accuracy, and reading comprehension of students. The ORF assessment was administered individually to students who had one minute to read a passage aloud while

the examiner recorded the number of errors, pauses, or deletions. Three passages were given to students and the median score on the three readings was used as the ORF score for the assessment. Good and Kaminski (2011b) found that ORF scores have a criterion-related validity ranging from .52 to .91.

ORF has been found to be an efficient measure of comprehension and a consistent predictor of reading achievement on standardized tests (Fuchs, et al., 2001). Some researchers have expressed concern about the reliability of ORF as a measure of reading comprehension, however. Samuels (2006) maintained that during the read aloud the student could be more focused on reading the words quickly and accurately rather than comprehending the passage. Still, there was enough research to uphold the use of ORF as a means of measuring reading comprehension (Samuels, 2006). In addition, reading ability, regardless of the measure used to assess it, was a widely used indicator for student achievement at the elementary school level since reading skills were less contingent on specific state curriculum than other subjects (Fleming, et al., 2004).

Procedure

Since archival data was used, this study was exempt from approval by the Valdosta State University Institutional Review Board (see Appendix A). The principals at each of the four schools were contacted to secure permission to conduct this study (see Appendix B). The schools provided demographic data, ODRs, and ORF scores for all fifth grade students. The fifth grade students at each site were classified as either minority or non-minority and by gender in the data table. In this study, *non-minority* refers to White students and *minority* refers to Black, Hispanic, Asian, or Mixed students. In the data file under Race, non-minority students were coded as *0* and minority students

were coded as *1*. In the gender column, girls were coded as *0* and boys were coded as *1*. The number of ODRs in the discipline column represented the actual number of referrals the student received during the data collection period regardless of the severity of the incident(s). Since ORF was a measure of the number of words a student read correctly in one minute the number in the BOYORF column and EOYORF column represented the median number of words the student read correctly during these assessments. The discipline data was retrieved from the SIS at each site.

Data Analysis

The *DIBELS* ORF scores for the students at the end of the school year were examined in order to determine whether a relationship existed between ODRs, race, gender, and BOYORF scores and the EOYORF score. The statistical software SPSS 18.0 was used to analyze the data. Prior to analysis, the data were checked to determine adherence to statistical assumptions. Following the data collection period of one full academic year, all fifth grade students at each site were classified into one of two classifications: minority or non-minority. The genders, the beginning of the year and end of the year ORF scores, and the number of ODRs for each subject were included in the data collection table as well.

Multiple regression analysis was used to assess the relationship between the end of year ORF score and the predictor variables. This procedure was used to try to predict outcomes on some dependent variable from a combination of independent variables (Mertler & Vannatta, 2005). All independent variables were entered into the regression equation and analyzed in order to determine what effect each variable had on predicting the dependent variable (Tabachnick & Fidell, 1996).

After regression analysis was done, BOYORF and EOYORF scores were coded into the three commonly used categories for *DIBELS* (*intensive*, *strategic*, and *benchmark*) and ODRs were also coded into three levels (0 = no ODRs, 1 = 1-2 ODRs, 2 = 3 or more ODRs). A Chi-square test was then done to determine the effect ODR level had on EOY category for *intensive* and *strategic* students.

Ethical Considerations

This study was exempt from approval by the Valdosta State University Institutional Review Board (IRB) since archival data were used (see Appendix A). Permission to conduct this study was secured from the principal at each school site (see Appendix B). The researcher did not have direct contact with any of the student participants. Therefore, informed consent from parents to include their child(ren) in the study was not necessary.

Data collection consisted of receiving archival data including demographic information, discipline records, and ORF scores of the students in the sample during the 2012-2013 school term from authorized school personnel at each site. Accordingly, no physical or emotional harm came to the subjects. To maintain the privacy of the students included in the sample, neither the names of the students nor the real names of the schools or towns in which the schools were located were identified. The race and gender of each student was the primary means of identification in the data collection tables.

The four sites from which the sample was drawn were chosen because of the similar demographic composition of the student population and the rural classification of the community. The U.S. Census Bureau (2012) defines *rural* as territory, persons, or housing units not classified as *urban* and with a population less than 50,000 people.

None of the sites was chosen solely due to convenience or ease of access to data. None of the sites received financial benefits or other compensation for participation in the study.

Summary

This chapter provided an overview of the methodology that was used in this research study. In Chapter 4, the results of data analysis are presented. These results are discussed in detail in Chapter 5. Implications and recommendations for future study are offered in Chapter 5 as well. References are provided and all related documents are included in the appendices.

Chapter IV

RESULTS

The purpose of this study was to examine the effect of office discipline referrals (ODR), race, gender, and the beginning of the year oral reading fluency (BOYORF) scores on reading comprehension of fifth grade students. The effect of ODRs on struggling readers was also explored. Reading comprehension was measured using the *DIBELS* end of the year oral reading fluency scores (EOYORF). Accordingly, the effects of four independent variables (race, gender, ODRs, and BOYORF) on a dependent variable (EOYORF) were examined using multiple regression analysis. Multiple regression analysis is defined as "a prediction equation using two or more variables that individually predict a criterion to make a more accurate prediction" (Gay, Mills, & Airasian 2006, p. 202). A Chi-square test was used to determine whether a relationship existed between ODR level and EOY category for *intensive* and *strategic* students. The research variables for this study are included in Table 1.

Table 1

Description and Coding of Study Variables (N = 517)

Variable	Description	Data Level
Gender	0 = girls 1 = boys	Nominal
Ethnicity	0 = non-minority 1 = minority	Nominal
Beginning of the year Oral Reading Fluency	Number of words read correctly (*M* = 118, *SD = 34.75*)	Continuous
End of the year Oral Reading Fluency	Number of words read correctly (*M* = 128.62, *SD = 34.72*)	Continuous
Office Discipline Referrals	Number of behavior incidents that led to office discipline referral (*M* = .99, *SD = 1.64*)	Continuous
BOYORF Category	1 = 0-95 words read correctly 2 = 96-110 words read correctly 3 = 111 through highest number of words read correctly	Categorical
EOYORF Category	1 = 0-104 words read correctly 2 = 105-129 words read correctly 3 = 130 through highest number of words read correctly	Categorical
ODR Level	0 = No ODRs 1 = 1-2 ODRs 2 = 3 or more ODRs	Categorical

Research Questions

The following research questions guided this study:

1. Do office discipline referrals (ODR), race, gender, and BOYORF significantly predict the reading comprehension scores of all fifth grade students on the end of the year (EOY) *DIBELS* assessment?
2. If so, which of these variables have the highest predictive value of EOYORF?
3. For students receiving remediation, is there a statistically significant relationship between office discipline referral categories and end of year reading fluency classification?

Data were collected from four demographically similar elementary schools in southwest Georgia during the 2012-2013 school year. Students were identified as either minority or non-minority in the race/ethnicity category and as either girl or boy in the gender category. A BOYORF score, EOYORF score, and the number of ODRs for each student was provided by the four schools. The demographics of the students are included in Table 2.

Table 2

Demographics of the Fifth Grade Students (N = 522)

School	*N*	% Minority	% Non-minority	Boys	Girls
Rockmine	173	67.2	32.7	56.4	43.5
Lorraine	182	78.5	21.4	49.4	51.0
Ridgetown	100	65.0	35.0	50.0	50.0
Cotton Hill	67	76.1	23.8	53.7	46.2

Five hundred and twenty-two students were included in the study. Three hundred and forty students (65.2%) were classified as minority and 147 (28.2%) were classified as non-minority. Two hundred and seventy-three students (52.2%) were boys and 249 (47.8%) were girls. ODRs ranged from zero to seven once outliers were excluded. Five hundred and seventeen ODRs were recorded involving 214 students. One hundred and sixty-eight of the students receiving an ODR were minority and 46 were non-minority; minorities represented 86.9% of the students who received at least one ODR though they represented 65.2% of the population. One hundred and twenty-eight of the students who received at least one ODR were boys and 86 were girls. Three hundred and eight students received no ODRs.

Data Screening

Missing Data and Outliers.

Five hundred and twenty-two students were enrolled in the fifth grade at the four sites during the 2012-2013 school year. Data screening was done using SPSS to identify

outliers and to eliminate variables with missing values. Regression analysis was used to calculate Mahalanobis' Distance. Five cases were eliminated due to extreme values in either the ODR category or the BOYORF or EOYORF category. No data were missing for any of the students at the four sites.

Homoscedasticity and Normality.

Tests for normality were run and there was a normal distribution of EOYORF scores as scores were clustered around zero on the scatterplot (see Appendix C). On the histograms for girls, boys, non-minorities, and minorities there was also a normal distribution (see Appendix C). Scores were clustered evenly along the regression line for girls, boys, non-minorities, and minorities in the Normal Q-Q Plot for EOYORF (see Appendix C). These plots showed a linear relationship between the independent variables and the dependent variables, therefore the assumption of homoscedasticity was met.

Tests for multicollinearity were done (see Table 5). Tolerance is "one measure of collinearity among independent variables, where possible values range from zero to 1" (Mertler & Vannatta, 2005, p. 169). The tolerance values of each of the variables exceeded 0.1, which has been established as a typical cut point in statistical analysis (Mertler & Vannatta).

Another method to test for multicollinearity is to examine the variance inflation factor (VIF) for each variable. VIF values over 10 typically indicate issues with multicollinearity (Mertler & Vannatta, 2005). As shown in Table 5, the VIF values for each variable were well below 10.

A Pearson product-moment correlation coefficient was computed to access the relationship between EOYORF and each of the four independent variables (see Table 3).

Table 3

Bivariate Correlations among All Study Variables (N = 517)

Variable	1	2	3	4	5
EOYORF	-				
Gender	-.11*	-			
Race	-.01	-.03	-		
BOYORF	.79	-.12	-.00	-	
ODR	-.24	.17	.13	-.22	-

*$p < .01$

When data from all schools were combined girls performed better than boys on the EOYORF assessment and the correlation was statistically significant. Non-minority students outperformed minority students but this correlation was not statistically significant. Students with higher BOYORF scores typically had a higher EOYORF score than those students with lower BOYORF scores. Increases in ODRs were typically correlated with lower EOYORF scores.

Descriptive Statistics

Since there was a negative correlation between EOYORF and ODRs, the mean EOYORF score by the number of ODRs was calculated. The EOYORF by ODRs are included in Table 4.

Table 4

End of Year Oral Reading Fluency (EOYORF) scores by Office Discipline Referrals (ODR)

# of ODRs	*N*	*M*	*SD*
0	188	136.17	37.66
1	66	127.76	34.88
2	37	127.46	33.73
3	21	109.48	28.94
4	14	109.29	43.91
5	10	101.20	41.61
6	3	124.33	20.65
7	4	77.25	39.76

Only one student received eight ODRs and one student received nine ODRs. The EOYORF was constant for these students and the data were omitted. Students with increasing numbers of ODRs typically scored lower on the EOYORF assessment than students with fewer or no ODRs. As shown in Table 4, students with one ODR had a mean EOYORF score that was 8 points lower than students with no ODRs. There was no marked difference in scores for students with one and two ODRs but students with three and four ODRs scored over 18 points lower than students with one or two ODRs and over 27 points lower than students with no ODRs. Students with five ODRs scored 8 points lower than students with three and four ODRs, 26 points lower than students with two ODRs, and 35 points lower than students with no ODRs.

Students with six ODRs outperformed those with three, four, and five ODRs but this only represented three students out of 517. Due to the small number of students in this category, drawing the conclusion that six ODRs does not impact students is not likely to be accurate when applied to a larger population.

Four students received seven ODRs and they performed the lowest of any ODR number. These students scored 24 points lower than students with five ODRs, 32 points lower than students with three and four ODRs, 50 points lower than students with one and two ODRs, and 59 points lower than students with no ODRs.

Results of Multiple Regression Analysis

To address Research Questions 1 and 2, multiple regression analysis was used with EOYORF as the dependent variable and race, gender, BOYORF, and ODRs as the independent variables. The regression results indicated that the model explained 62% of the variance. The standard error of the estimate measures the accuracy of the variables as predictors on the dependent variable. In a regression line, the smaller the standard error of the estimate is the more accurate are the predictions. In the model summary, the standard error of the estimate was large which suggested that some of the variables were not accurate predictors of EOYORF scores. The regression results are presented in Table 5.

Table 5

Regression Results

	Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics	
	B	*SE*	Beta	*P*	Tolerance	VIF
(Constant)	43.86	4.60		< .01**		
Race	.17	2.11	.00	.93	.98	1.02
Gender	-.99	1.92	-.01	.61	.96	1.04
BOYORF	.76	.03	.76	< .01**	.94	1.07
ODRs	-1.55	.60	-.07	.01*	.91	1.10

** $p < .01$

The regression equation for predicting EOYORF scores was as follows:

EOYORF = 43. 86 + .17(Race) - .99(Gender) + .76(BOYORF) - 1.55(ODR)

The analysis demonstrated that BOYORF scores and ODRs were significant predictors of EOYORF scores with $p < .01$. Girls ($M = 133.78$, $SD = 34.29$) outperformed boys ($M = 124.83$, $SD = 34.73$) and non-minorities ($M = 129.19$, $SD = 38.72$) outperformed minorities ($M = 128.39$, $SD = 33.03$) on the EOYORF assessment.

Regression analysis was also done separately at each of the four sites in order to check the consistency of the results. The regression results for Rockmine Elementary are found in Table 6.

Table 6

Regression Results for Rockmine Elementary

	Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics	
	B	*SE*	Beta	*p*	Tolerance	VIF
(Constant)	94.70	8.71		< .01**		
Race	-5.95	4.20	-.10	.16	.96	1.04
Gender	3.63	3.98	.07	.36	.97	1.02
BOYORF	.33	.07	.35	< .01**	.98	1.02
ODRs	-2.04	1.22	-.12	.09	.95	1.06

The findings from Rockmine Elementary differed greatly from the combined model. The model could explain only 17% of the variance and ODRs were not a significant predictor of EOYORF scores. Boys (M = 129.95, SD = 25.33) outperformed girls (M = 125.50, SD = 30.40) and non-minorities (M = 134.21, SD = 30.99) outperformed minorities (M = 124.85, SD = 25.32) on the EOYORF assessment. Rockmine was the only school with a negative coefficient value for race, which also predicted that nonminority students would score almost six points higher on the EOYORF than minority students if all other variables were held constant. The coefficient value for gender was larger than the other three schools. ODRs were correlated with predicted EOYORF scores that were two points lower as the number of ODRs increased if all other variables were held constant.

The regression results for Lorraine Elementary are found in Table 7.

Table 7

Regression Results for Lorraine Elementary

	Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics	
	B	*SE*	Beta	*p*	Tolerance	VIF
(Constant)	12.88	5.35		< .01**		
Race	3.91	2.89	.04	.17	.96	1.05
Gender	-1.98	2.47	-.04	.42	.87	1.14
BOYORF	.94	.04	.91	< .01**	.84	1.19
ODRs	.84	.75	.04	.26	.87	1.15

The model could explain eighty-three percent of the variance. This is much higher than the results from Rockmine despite having similar demographics. Like Rockmine, BOYORF was a significant predictor of EOYORF but ODRs were not. At Lorraine, girls (*M* = 146.46, *SD* = 31.96) outperformed boys (*M* = 125.39, *SD* = 39.62) and minorities (*M* = 140.01, *SD* = 32.70) outperformed non-minorities (*M* = 122.05, *SD* = 48.90) on the EOYORF assessment. Girls and minorities were predicted to have higher EOYORF scores than boys and nonminorities if all other variables were held constant. ODRs were correlated with predicted EOYORF scores that were almost one point higher as the number of ODRs increased if all other variables were held constant.

The regression results for Ridgetown Elementary are found in Table 8.

Table 8

Regression Results for Ridgetown Elementary

	Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics	
	B	*SE*	Beta	*p*	Tolerance	VIF
(Constant)	26.19	7.30		< .01**		
Race	.43	3.45	.01	.90	.97	1.04
Gender	-2.29	3.26	-.03	.48	.99	1.02
BOYORF	.89	.05	.81	< .01**	.85	1.18
ODRs	-4.69	1.07	-.21	< .01**	.82	1.22

The results from Ridgetown Elementary showed that the model could explain 83% of the variance. BOYORF and ODRs were significant predictors of EOYORF, which was consistent with the combined model. Like Lorraine Elementary, girls (*M* = 128.90, *SD* = 38.47) outperformed boys (*M* = 121.59, *SD* = 38.21) on the EOYORF assessment. At this site, non-minorities (*M* = 131.51, *SD* = 36.17) outperformed minorities (*M* = 121.75, *SD* = 39.28) on the EOYORF assessment. Girls and minorities were predicted to have higher EOYORF scores than boys and nonminorities if all other variables were held constant.

The regression results for Cotton Hill Elementary are found in Table 9.

Table 9

Regression Results for Cotton Hill Elementary

	Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics	
	B	*SE*	Beta	*P*	Tolerance	VIF
(Constant)	13.28	6.25		< .01**		
Race	2.93	3.51	.04	.41	.97	1.03
Gender	-.33	2.99	-.01	.91	.97	1.03
BOYORF	.97	.05	.97	< .01**	.90	1.11
ODRs	3.32	1.04	.15	< .01**	.91	1.10

The model could explain 88% of the variance for Cotton Hill Elementary. BOYORF and ODRs were significant predictors of EOYORF scores. Consistent with the findings from Lorraine and Ridgetown, girls (M = 116.19, SD = 30.17) outperformed boys (M = 114.31, SD = 37.38); non-minorities (M = 122.88, SD = 42.43) outperformed minorities (M = 112.76, SD = 30.99) on the EOYORF assessment which was consistent with Ridgetown and Rockmine. Also similar to Lorraine and Ridgetown, girls and minorities were predicted to have higher EOYORF scores than boys and nonminorities if all other variables were held constant.

Analyzing the data from each site indicated that BOYORF was a significant predictor of EOYORF at all four schools. ODRs were a significant predictor at two of the schools. The model summaries for Lorraine, Ridgetown, and Cotton Hill revealed that the models could explain over 80% of the variances. Girls outperformed boys and

non-minorities outperformed minorities on the EOYORF assessment at these three sites as well. Differing scores were predicted based on race and gender, but neither variable was a significant predictor and the high standard error of the estimate suggested that these variables were not strong predictors of EOYORF.

The regression analysis for Rockmine Elementary differed greatly from the other three schools in that the model could explain only 17% of the variance. Boys outperformed girls on the EOYORF assessment, which was the opposite of the other three schools. Rockmine was also the only school where nonminorities were predicted to outscore minorities on the EOYORF assessment if all other variables were held constant. BOYORF was correlated with much lower growth on the EOYORF at Rockmine (Beta = .33); the coefficient values at the other three schools were close to 1.

The separate analyses of the schools suggested that the results from Rockmine Elementary were quite different from the other schools despite having similar demographics. The standard error of the estimate was also much larger (*SE* = 25.44). The large population size of Rockmine (N = 173) appeared to have skewed the results of the combined model indicating that boys outperformed girls on the EOYORF assessment; these findings were not consistent with the separate analyses of Lorraine, Ridgetown, and Cotton Hill. Therefore, a separate combined model excluding Rockmine Elementary was done. The regression results for the adjusted model summary that included Lorraine Elementary, Ridgetown Elementary, and Cotton Hill Elementary are found in Table 10.

Table 10

Regression Results for Lorraine, Ridgetown, and Cotton Hill

	Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics	
	B	*SE*	Beta	*P*	Tolerance	VIF
(Constant)	17.83	3.63		< .01**		
Race	2.27	1.95	.03	.25	.99	1.01
Gender	-1.29	1.75	-.02	.46	.94	1.06
BOYORF	.92	.02	.90	< .01**	.91	1.11
ODRs	-.61	.55	-.03	.27	.89	1.13

The model summary showed that the adjusted model could explain 83% of the variance. BOYORF remained a significant predictor of EOYORF but ODRs did not. Removing the students from Rockmine Elementary from the model contributed to ODRs no longer being a significant predictor of EOYORF. ODRs were significant predictors of EOYORF at Ridgetown Elementary and Cotton Hill Elementary, however. Girls and minorities were predicted to have higher EOYORF scores if all other factors were held constant. There was a negative correlation between ODRs and EOYORF.

The regression equation in the adjusted model for predicting EOYORF scores was as follows:

$$EOYORF = 17.83 + 2.27(Race) – 1.29(Gender) + .92(BOYORF) - .61(ODR)$$

Findings Related to Research Questions 1 and 2

In the adjusted model, girls (*M* = 135.95, *SD* = 35.55) outperformed boys (*M* = 121.98, *SD* = 38.77) and minorities (M = 129.95, SD = 42.88) outperformed non-minorities (*M* = 125.92, *SD* = 42.87). The findings from the original model (see Table 5) based on gender were consistent but they were not consistent based on race. In both the original model and the adjusted model, BOYORF was a significant predictor of EOYORF scores.

In the original model, the analysis showed that there was a negative relationship between gender and EOYORF (Beta = -.01, $p = .61$) and between ODRs and EOYORF (Beta = -.07, $p = .01$); the relationship between EOYORF and gender was not significant but the relationship between ODRs and EOYORF was significant. There appeared to be no relationship between race and EOYORF in the original model (Beta = .00, $p = .93$). There was a significant relationship between BOYORF and EOYORF scores and there was a positive correlation between these variables (Beta = .76, $p < .001$).

In the adjusted model (see Table 10), the analysis also showed that there was a negative relationship between gender and EOYORF (Beta = -.02, $p = .46$) and between ODRs and EOYORF (Beta = -.03, $p = .27$); neither relationship was statistically significant. There was a positive correlation between race and EOYORF (Beta = .03, $p = .25$) and between BOYORF and EOYORF (Beta = .90, $p < .001$) though only the relationship between BOYORF and EOYORF was significant. There was a stronger correlation between BOYORF and EOYORF scores in the adjusted model than in the original model. Of all the research variables BOYORF was the highest predictor of EOYORF scores.

Findings Related to Research Question 3

Once the results from the adjusted model established that BOYORF was a significant predictor of EOYORF scores, the raw BOYORF and EOYORF scores were coded into three categories (see Table 1). The categories are based on the findings of Good and Kaminski (2002) who developed the *DIBELS* manual. Additionally, most schools use these categories to classify students as *intensive*, *strategic*, or *benchmark* on the BOYORF and EOYORF assessments.

ODRs were also coded into three levels (see Table 1). The three levels were no ODRs, 1-2 ODRs, and 3 or more ODRs.

Since two categorical variables were used, (end of year category and ODR level) a Chi-square test was run to determine if a relationship existed between the variables. Only students classified as *intensive* and *strategic* at the beginning of the year were included in this test since *benchmark* students are those who are already reading at or above grade-level expectations.

Chi-square Results

Eighty-one students began the year in the *intensive* category while 49 students were classified as *strategic* and 215 students were classified as *benchmark.* Twenty-nine girls were classified as *intensive,* 31 were classified as strategic, and 111 were classified as *benchmark*. Fifty-two boys were classified as *intensive,* 18 were classified as *strategic*, and 104 were classified as *benchmark*. Twenty-three non-minorities were classified as *intensive*, 11 were classified as *strategic*, and 55 were classified as *benchmark*. Fifty-eight minorities were classified as *intensive*, 38 were classified as *strategic*, and 160 were classified as *benchmark.*

Non-minority boys performed much lower than all other groups regardless of ODR level (ODRLEV). With the exception of non-minority boys, students with three or more ODRs performed lower than students with no ODRs. Overall, girls outperformed boys at each ODRLEV. Minority students also outperformed non-minority students at each ODRLEV.

To answer Research Question 3, a Chi-square test was performed and no significant relationship was found between end of year category (EOYCAT) and ODRLEV for *intensive* and *strategic* students, X^2 (4, N = 130) = 4.30, p = .37. Despite this lack of statistical significance, the test yielded some interesting results (see Table 11).

Table 11

End of the Year Category (EOYCAT) and Office Discipline Referral Level (ODRLEV) Crosstabulation

EOYCAT	ODR LEV			Total
	No ODR	1-2 ODR	3 or more ODR	
Intensive	31	27	24	82
Strategic	24	12	8	44
Benchmark	1	2	1	4

Students who ended the year in the *intensive* category had more ODRs than those who ended the year in either the *strategic* or *benchmark* categories. Sixty-two percent of the students in the *intensive* category received at least ODR compared to 45% of the students in the *strategic* category. Three out of four of the students who ended the year in

the *benchmark* category received at least one ODR but the small sample size makes it difficult to generalize these findings.

Fourteen students who began the year in the *intensive* category progressed to the *strategic* category by the end of the year; nine of these students had no ODRs, three students had 1-2 ODRs, and two had 3 or more ODRs. Eight of the 14 students who progressed were girls and eleven students were non-minority. Sixty-seven students classified as *intensive* at the beginning of the year remained in the same category at the end of the year. Forty-four of these students were girls and 47 were non-minority. No *intensive* students at the beginning of the year progressed to the *benchmark* category by the end of the year.

Only four students who began the year as *strategic* progressed to the *benchmark* category by the end of the year; all four students were girls and three were non-minority students. Thirty students who began the year in the *strategic* category remained in that category at the end of the year; exactly half of these students had no ODRs while nine students had 1-2 ODRs and six students had 3 or more ODRs. Twenty of these students were boys and 24 were non-minority students. Fifteen students who began the year as *strategic* fell into the *intensive* category by the end of the year; five of these students had no ODRs, five students had 1-2 ODRs, and five students had 3 or more ODRs. Ten of the 15 students were boys and 10 were non-minority.

Summary

The data analysis demonstrated that BOYORF and ODRs were significant predictors of EOYORF when data was used from all four sites. The correlation between BOYORF and EOYORF was positive and statistically significant. The correlation

between EOYORF and ODRs was negative and statistically significant. In general, students with increasing numbers of ODRs scored lower on both the BOYORF and EOYORF assessments by large margins. The regression equation showed that 62% of the variance was attributed to the predictor variables.

Though not statistically significant, more minorities and more boys received ODRs compared to non-minorities and girls during the data collection period when the four schools were combined. These findings are consistent with the research literature (Rodney, et al., 2002; Skiba, et al., 2002; Townsend, 2000).

To test the combined model, regression analyses were done at each of the four schools. BOYORF was a significant predictor of EOYORF scores at each site. ODRs were significant predictors of EOYORF scores at Ridgetown and Cotton Hill.

Results from Rockmine Elementary appeared to have shewed the combined data however since boys outperformed girls at that site only. Rockmine also had a much lower adjusted r^2 value than the other three schools. The adjusted r^2 values for Lorraine, Ridgetown, and Cotton Hill were similar. Accordingly, regression analysis was done combining Lorraine, Ridgetown, and Cotton Hill. The results from this adjusted model showed that the model could explain 83% of the variance. BOYORF remained a significant predictor of EOYORF scores but ODRs did not. Girls outperformed boys and minorities outperformed non-minorities on the EOYORF assessment; the latter finding is not consistent with the research literature (Moffitt, et al., 2001; Skiba, et al., 2002). Based on the results of this study, BOYORF is the greatest predictor of EOYORF performance.

When BOYORF and EOYORF scores were coded into three categories (*intensive*, *strategic*, and *benchmark*) and ODRs were coded into three levels (no ODRs, 1-2 ODRs, and 3 or more ODRs), a Chi-square test was done. No significant relationship was found between EOYCAT and ODRLEV for *intensive* and *strategic* students.

The implications of these findings are discussed in Chapter 5 of this study.

Chapter V

DISCUSSION

A summary of this study and a discussion of the results found in Chapter 4 are presented in this chapter. The implications of the findings and recommendations for further study are also discussed.

Summary of the Dissertation

Academic difficulties in reading often affect all other subjects in school (Fleming, et al., 2004; Nelson & Roberts, 2000). When struggling readers receive office discipline referrals (ODR) for misbehavior, they make even less progress than students who do not receive ODRs (Vincent, 2012; Skiba, et al., 2002). In addition, an achievement gap and a discipline gap exists based on race and gender with non-minorities and girls typically outperforming minorities and boys (Moffitt, et al., 2001; Mullis, Martin, Kennedy, & Foy, 2007). Therefore, the purpose of this study was to examine the effect of ODRs, race, gender, and the beginning of the year oral reading fluency score (BOYORF) on the reading comprehension skills of fifth grade students at four rural elementary schools in southwest Georgia.

I addressed the following research questions in this study:

1. Do office discipline referrals (ODR), race, gender, and BOYORF significantly predict the reading comprehension scores of all fifth grade students on the end of the year (EOY) *DIBELS* assessment?

2. If so, which of these variables have the highest predictive value of EOYORF?
3. For students receiving remediation, is there a statistically significant relationship between office discipline referral categories and end of year reading fluency classification?

This was a correlation study and multiple regression analysis was used to determine if a relationship existed between ODRs, race, gender, and BOYORF and the reading comprehension scores of fifth grade students. The sample consisted of 517 fifth grade students from four rural elementary schools in southwest Georgia during the 2012-2013 school year. At each of the schools, minority students represented at least 65% of the student population and 70% or more of all the students were classified as economically disadvantaged.

In the data collection table, girls were coded as *0* and boys were coded as *1*. Non-minorities were coded as *0* and minorities were coded as *1*. The BOYORF and the end of year oral reading fluency (EOYORF) scores for each student was the median number of words read correctly (WRC) in one minute. The number of ODRs for each student was included as well.

When the mean EOYORF scores were examined by ODRs, the results showed that scores typically decreased for students with increasing numbers of ODRs. Students with no ODRs outperformed those with one or more ODRs; to illustrate further, students with seven ODRs scored over 50 points lower on average on the EOYORF assessment than students did with no ODRs.

The regression analysis results showed that 62% of the variance in EOYORF scores could be attributed to the research variables. When all four schools were

combined and included in the results, BOYORF and ODRs were significant predictors of EOYORF scores. Girls outperformed boys and non-minorities outperformed minorities on the EOYORF assessment as well.

In order to check these findings for consistency, a separate regression analysis was done at each of the four sites. BOYORF remained a significant predictor of EOYORF at all four schools, but ODRs was only a significant predictor at two of the sites. The analysis also revealed that the results from Rockmine Elementary differed greatly from the other three schools; the model could explain only 17% of the variance and boys outperformed girls and non-minorities outperformed minorities on the EOYORF assessment. The coefficient for race was the largest of all the schools and predicted almost a six-point difference in scores between non-minorities and minorities; Rockmine was the only school in which non-minorities were predicted to outscore minorities on the EOYORF assessment if all other variables were held constant.

Since the results from Rockmine Elementary appeared to skew the results for the entire model, another regression analysis was done with Cotton Hill Elementary, Lorraine Elementary, and Ridgetown Elementary combined; Rockmine Elementary was excluded from this analysis. The results showed that the model could explain 83% of the variance in scores. BOYORF remained a significant predictor of EOYORF scores, but ODRs were not, even though they were a significant predictor at Ridgetown and Cotton Hill. In the adjusted model, girls outperformed boys, and minorities outperformed non-minorities on the EOYORF assessment. Though not significant, there was a negative correlation between ODRs and EOYORF.

The measure for both BOYORF and EOYORF scores was the Dynamic Indicators of Basic Early Literacy Skills (*DIBELS*) oral reading fluency assessments. Students were assessed on the number of words read correctly (WRC) in one minute at the beginning, middle, and end of the school year. Good and Kaminski (2002) also developed three levels of cut scores to measure students' progress at each grade level based on the number of WRC—*intensive*, *strategic*, and *benchmark*. Most schools use these labels to provide necessary interventions if students fall into the *intensive* or *strategic* categories. Students who are labeled as *benchmark* typically do not require additional support.

In order to examine the effect of ODRs on struggling readers, the BOYORF and EOYORF scores were re-coded into the three *DIBELS* categories. The results showed that there was no significant relationship between ODR level and EOY category for *intensive* and *strategic* students.

Findings Related to the Literature

McIntosh (2005) and Gregory, Skiba, and Noguera (2010) found that students with academic difficulties began to struggle even more when they missed instructional time due to office discipline referrals (ODR). Researchers from the literature field have also shown that there is an achievement and discipline gap between minorities and non-minorities and between boys and girls (Arcia, 2007; Miles & Stipek, 2006; Moffitt, Caspi, Rutter, & Silva, 2001; Skiba, et al., 2002). It was the goal of this study to support or refute these contentions using students from high minority, high poverty, and rural areas in southwest Georgia.

The findings were consistent with the literature in that boys and minorities received more ODRs than girls and non-minorities, and students with at least one ODR scored lower than students with no ODRs on the EOYORF assessment (Gregory, et al., 2010; McIntosh, 2005; Rodney, et al., 2002; Skiba, et al., 2002). Once Rockmine Elementary was removed from the model, girls outperformed boys on the EOYORF, and minorities outperformed non-minorities; the latter finding was not consistent with the literature (Moffitt, et al., 2001; Mullis, et al., 2007; Skiba, et al., 2002; Townsend, 2000). Regardless, BOYORF appeared to be the most significant predictor of EOYORF scores.

Unanticipated Results

The results did contain some surprises. The divergent findings from Rockmine Elementary, despite having nearly identical demographics as the other three schools, were not anticipated; I assumed that the similar composition of the four schools would yield comparable results. Rockmine Elementary proved to be different than the other three schools in that boys outperformed girls on the EOYORF assessment; girls outperformed boys at all of the other schools in this study. If all other predictors were held constant, a boy's predicted score was almost four points higher than a girl's score at Rockmine Elementary.

Race was also a much higher predictor of EOYORF score at Rockmine Elementary as well. Holding all other predictors constant, a nonminority student would have a predicted score that was almost six points higher than a minority student's score. Rockmine Elementary was the only school with a negative coefficient value for race.

These discrepancies made Rockmine an outlier and it was removed from the model. Despite the exclusion of Rockmine, the data does raise some interesting

questions. Why did boys outperform girls at this school and why was race such a strong predictor of EOYORF scores if all factors were held constant? Though significant, why was the predicted growth from the BOYORF assessment to the EOYORF assessment so much lower at Rockmine? Answers to these questions would require further study, but I believe the discrepancies at Rockmine underline the importance of treating each school as a separate entity. While demographics and other factors may suggest that schools are similar, it is important to recognize that every school has its own culture and climate that impact academics and behavior.

There were discrepancies among the other three schools as well. Though there was a positive, significant correlation between BOYORF and EOYORF, a negative, non-significant correlation between gender and EOYORF, and a positive, non-significant correlation between race and EOYORF at each school, the coefficient values for race were much higher at Lorraine and Cotton Hill. The coefficient values for gender were higher at Lorraine and Ridgetown. Lorraine was the only school where minorities outperformed non-minorities on the EOYORF assessment. Cotton Hill had the smallest gap between the scores for girls and boys.

Despite the discrepancies at Lorraine, Ridgetown, and Cotton Hill, neither race nor gender were significant predictors of EOYORF scores at any of the schools. Even though girls outperformed boys at each school, the gap was much larger on average at Lorraine and Ridgetown. At the two schools where non-minorities outperformed minorities, on average the gap was approximately the same. The gap could be attributed to several factors such as school size, class size, experience levels of the teachers, and

instructional programs at each school, but determining why scores differed at the individual schools is beyond the scope of this study.

I expected the results of this study to be consistent with the research literature with girls significantly outperforming boys, non-minorities significantly outperforming minorities, and students with no ODRs significantly outperforming students with one or more ODRs (Moffitt, et al., 2001; Monroe, 2006; Mullis, et al., 2007; Skiba, 2003). After the number of ODRs were disaggregated by race and gender it seemed that ODRs would indeed have a significant effect on EOYORF scores for minorities and boys; minority students accounted for 87% of the ODRs and boys accounted for 60% of the ODRs in this study. Regression analysis however showed that neither ODRs, nor gender, nor race were significant predictors of EOYORF scores in the combined model.

I expected ODRs to have a negative impact on EOYORF scores, but that was not the case when the schools were examined separately. Though there was a negative correlation between ODRs and EOYORF on the combined model and the adjusted model, there was actually a positive coefficient value for ODRs at Lorraine Elementary and Cotton Hill Elementary. These findings suggest that if all other factors were held constant then students with increasing numbers of ODRs would have a predicted EOYORF score that was almost one point higher than students with no or fewer ODRs at Lorraine Elementary and a predicted score over three points higher than students with no or fewer ODRs at Cotton Hill Elementary.

The small size of the sample from Cotton Hill Elementary could have influenced these results, however. Several researchers have found that smaller schools typically have higher attendance rates and fewer discipline problems than larger schools (Gardner,

Ritblatt, & Beatty, 2000; Raywid, 2001; Hill, 2001). There were only 67 students in the fifth grade at Cotton Hill and 26 of the students received at least one ODR; students from Cotton Hill only represented 12% of all students from the four schools who received at least one ODR and only 10% of the total number of ODRs that were issued during the data collection period. The number of students receiving ODRs and the total number of ODRs was the lowest at Cotton Hill.

Conversely, Lorraine Elementary had the highest number of students receiving at least one ODR and the highest number of total ODRs. Lorraine Elementary students receiving at least one ODR represented 41% of all students receiving an ODR and they accounted for 44% of all ODRs.

The current principals of Lorraine Elementary and Cotton Hill Elementary were contacted and the findings from this study were shared with them. Both administrators reported that a behavior system that emphasized positive reinforcement rather than punishment was in place currently and during the 2012-2013 school year when the data was collected. They contended that ODRs did not seem to have a pronounced negative impact on EOYORF scores because school discipline was based on removing or delaying rewards rather than removing students from class for misbehavior and issuing consequences.

Neither principal at Rockmine Elementary nor Ridgetown Elementary reported having a positive behavior support system in place during the 2012-2013 school year. Students at both schools had a predicted score that decreased by two points as ODRs increased at Rockmine and a predicted score that decreased by almost five points as ODRs increased at Ridgetown if all other factors were held constant.

Even though ODRs were not significant predictors of EOYORF on the adjusted model, ODRs was a significant predictor on the combined model and at Ridgetown and Cotton Hill. These two schools were the smallest of the four schools in the combined model. Perhaps if the *N* size was larger in the adjusted model sample, then ODRs might have been a significant predictor.

I expected that ODRs would have a significant effect on EOY scores for *intensive* and *strategic* students as well. Since these students already had difficulties with reading fluency I assumed that the lost instruction resulting from ODRs would have a greater impact on their EOY fluency category. Furthermore, researchers have shown that reading problems and behavior problems often co-exist (Greenham, 1999; Rourke & Fuerst, 1991). Though only four of the 130 *intensive* and *strategic* students progressed to the *benchmark* category, and 57% of the students received at least one ODR, the ODR level did not have a significant effect on scores. In general, students who began the year in either the *intensive* or *strategic* category remained in the same category at the end of the year regardless of the level of ODRs.

Implications for Action

The results of this study provide practical implications for teachers and school officials particularly in rural areas. Since BOYORF was a significant predictor of EOYORF scores, schools should use the data to provide reading remediation to struggling students in order for them to be more successful on the EOY assessment. Students who begin the year classified as either *intensive* or *strategic* need additional instructional support, and where these students begin the year is the greatest predictor of where they will end the year in terms of reading comprehension.

BOYORF should be the determining factor in identifying the students who need extra support. This support could take the form of small group instruction from a reading interventionist several days a week or computer-assisted instruction in fluency and comprehension. Financial constraints continue to plague public schools, particularly those in rural, high poverty areas, but Federal Title I funds are available to schools with a high percentage of students from low-income families. All of the schools in this study received Title I funds. These funds can be used to pay the salaries of intervention teachers, paraprofessionals, and reading specialists; the funds can be used to purchase reading support programs like *DIBELS* (Good & Kaminski, 2002).

Though ODRs were not a significant predictor of EOYORF, the data showed that higher numbers of ODRs were correlated with lower EOYORF scores (see Table 3 and Table 4). ODRs were a significant predictor at two of the schools, so their importance cannot be totally discounted. Academic support can be provided to struggling students as described previously, but behavior support should also be implemented. Sixty-two percent of the students who finished the year in the *intensive* category, and 45% of the students who finished the year in the *strategic* category received at least one ODR. This suggests that the lowest performing students are the most likely to receive an ODR and more likely to miss instruction they need as a result.

A system based on positive behavior support could reduce the number of ODRs (Bradshaw, Koth, Bevans, Ialongo, & Leaf, 2008; Bradshaw, Mitchell, O'Brennan, & Leaf, 2010). The Positive Behavioral Interventions and Supports (PBIS) model is a proactive approach to improving behavior rather than reactive and punishment-driven. Researchers have demonstrated the effectiveness of PBIS, particularly at the elementary

school level, in improving student behavior and school climate and in reducing ODRs and suspensions. Perhaps PBIS could be a remedy for addressing behavior and academic problems for students who need support in both areas. When the individual schools were examined, the two schools that had implemented some form of positive behavior support during the 2012-2013 school year had higher predicted scores for students with increasing numbers of ODRs. The principals of these schools attributed the results to the positive impact of the PBIS model since consequences were based on withholding rewards instead of issuing consequences.

To be sure, equity and access by gender are critical in American public schools but it appears that boys are more at risk than girls are in terms of academics and behavior. Researchers have shown that boys were also more likely to be diagnosed with ADHD, which would certainly affect reading skills and student behavior (Hinshaw, 1992; Shayritz, et al., 1990). Young students, especially boys, are more likely to perform and behave better when they are interested in what they are learning (Mayes, et al., 2000; Weiner, 2004). What may be considered attention deficits and hyperactivity by some observers may actually be boredom with the material; boredom can in turn lead to misbehavior and ODRs (Hinshaw, 1992). As a result, boys who are already performing lower than girls in reading comprehension miss classroom instruction, which further contributes to the achievement gap based on gender (Weiner, 2004).

Schools could consider changing the ways they teach boys the necessary reading skills by increasing their motivation to read. Henry, Lagos, and Berndt (2012) suggested that boys were more motivated to read when they had books for boys, when they were able to share the book with a friend, when they had a male mentor who encouraged them

to read, and when technology was incorporated into reading. These recommendations are relatively inexpensive to implement and could lead to an increase in reading scores for boys.

Recommendations for Further Research

This study could be improved upon by analyzing different student populations. The findings of this study were based on students who attended rural schools with high minority and economically disadvantaged populations. Future research could be conducted in more affluent communities and those in urban and suburban areas in order to determine if the sample affected the results. In other words, would BOYORF remain the greatest predictor of EOYORF using a different population and would any of the other variables be a significant predictor of EOYORF? Additionally, these findings were for fifth grade students only. It would be interesting to see if the results were consistent for students in different grades. Finally, this study initially included 517 students. A larger sample could yield different results.

Future researchers could also choose to correlate the findings with standardized state assessments that purport to measure reading comprehension. Using EOYORF as an independent variable and the achievement scores from a standardized reading assessment as the dependent variable could generate some interesting results; it is the scores on state assessments that often determine if children are promoted to the next grade level and if the school is considered a *failing* school or not. It is the scores on state assessments that are typically given a position of preeminence over all other assessments even though the *DIBELS* data are useful and provide a better picture of what students know and are able to do; *DIBELS* scores are not tied to accountability indicators for schools and they are not

considered *high-stakes*. Attempting to correlate ODRs, race, gender, and fluency scores with end of the year state assessments in reading could lead policy makers to examine the impact of various factors on reading achievement rather than blaming teachers or schools in general for underperforming students.

Conclusion

Reading comprehension is perhaps the most important academic skill that students can learn in school since reading has an impact on all other subjects (Good & Kaminski, 2002). The authors of related research literature have demonstrated that there is an achievement gap and a discipline gap between minorities and non-minorities and between boys and girls (Moffitt, et al., 2001; Mullis, et al., 2007). Under the *No Child Left Behind Act of 2002* and now under the waivers granted to states, public schools are required to close the achievement gap based on subgroups or face increasingly tougher sanctions. Therefore, a study examining the impact of race, gender, beginning of the year reading skills, and discipline on end of the year reading skills is both timely and appropriate.

This study demonstrated that BOYORF is the greatest predictor of EOYORF at four rural elementary schools in rural, southwest Georgia. When the BOYORF and EOYORF scores were re-coded into the commonly used DIBELS categories of *intensive, strategic,* and *benchmark,* and ODRs were coded into three levels (no ODRs, 1-2 ODRs, and three or more ODRs) the findings showed there was no significant relationship between EOY category and ODR level. Fourteen *intensive* students progressed into the *strategic* category but none progressed to the *benchmark* category. Only four *strategic*

students progress to the *benchmark* category while fifteen *strategic* students fell into the *intensive* category.

Often in public schools, teachers and administrators are inundated with data that they either cannot understand or cannot use. These results are quite simple to interpret and provide a direction for reading interventions. Students' beginning of the year reading scores significantly predict their end of the year scores; students with lower BOYORF scores do not perform as well as students with higher BOYORF scores on the EOYORF assessment. In addition, gender and ODRs impact EOYORF scores since girls outperform boys and students with no or fewer ODRs outperform those with more ODRs. This is powerful data. If school officials know who is the most at risk for behavior and academic struggles at the beginning of the year then it simply becomes a matter of providing the necessary academic and behavior supports for these students proactively rather than reactively. Remediating a known problem is better than lamenting the results.

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APPENDIX A

Institutional Review Board Oversight Screening Form

for Graduate Student Research

Valdosta State University Graduate School

Institutional Review Board Oversight Screening Form for Graduate Student Research

RECEIVED
FEB 06 2014
VALDOSTA STATE UNIVERSITY GRADUATE SCHOOL

Project Title: The Effect of Office Discipline Referrals by Race and Gender on Reading Comprehension

Name: Matthew Cullifer

Faculty Advisor: Dr. Gerald Siegrist

Department: Leadership

E-mail: mgcullifer@valdosta.edu

Telephone: (229) 942-3318

Please indicate the academic purpose of the proposed research:
- ☒ Doctoral Dissertation
- ☐ Master's Thesis
- ☐ Other:

1. ☐ YES ☒ NO **Will you utilize *existing identifiable private* information about living individuals?** "Existing" information is data that were previously collected for some other purpose, either by the researcher or, more commonly, by another party. "Identifiable" means that the identities of the individuals can be ascertained by the researcher by name, code number, pattern of answers, or in some other way, regardless of whether or not the researcher needs to know the identities of the individuals for the proposed research project. "Private" information includes information about behavior that occurs in a context in which an individual can reasonably expect that no observation or recording is taking place or information provided for specific purposes that the individual can reasonably expect will not be made public (e.g., a medical record or student record).

   Note: If you are using data that: (1) are publicly available; (2) were collected from individuals anonymously (i.e., no identifying information was included when the data were first collected); (3) will be de-identified before being given to the researcher, (i.e., the owner of the data will strip identifying information so that the researcher cannot ascertain the identities of individuals); or (4) do not include any private information about the individuals, regardless of whether or not the identities of the individuals can be ascertained, your response to Question 1 should be NO.

2. ☐ YES ☒ NO **Will you *interact* with individuals to obtain data?** "Interaction" includes communication or interpersonal contact between the researcher and the research participant, such as testing, surveying, interviewing, or conducting a focus group. It does not include observation of public behavior when the researcher does not participate in the activities being observed.

3. ☐ YES ☒ NO **Will you *intervene* with individuals to obtain data?** "Intervention" includes manipulation of the individual or his/her environment for research purposes, as well as using physical procedures (e.g., measuring body composition, using a medical device, collecting a specimen) to gather data for research purposes.

If you answered YES to ANY of the above questions, your research is subject to Institutional Review Board oversight. Please discard this form and complete and submit an IRB application. Do not begin your research until your application has been reviewed by the IRB and you are informed of the outcome of the review.

* * * * * * * * * * * *

If you answered NO to ALL of the above questions, your research is not subject to Institutional Review Board oversight. Stop here, sign below, secure your faculty advisor's signature, and submit this form to the Graduate School. Please remember that, even though your project is not subject to IRB oversight, you should still observe ethical principles in the conduct of your research.

STUDENT CERTIFICATION: I certify that my responses to the above questions accurately describe my proposed research.

Student's Signature: _____ **Date:** 1/24/14

FACULTY ADVISOR CERTIFICATION: I have reviewed the student's proposed research and concur that it is not subject to Institutional Review Board oversight.

Faculty Advisor's Signature: _____ **Date:** 2/3/14

APPENDIX B

Sample Principal Letter

Principal Letter

March 5, 2014,

FROM: Matthew Cullifer,
Principal, Early County Elementary School

TO: [redacted]
Principal, [redacted]

I am pursuing a Doctor of Education degree (Ed. D) in Educational Leadership from Valdosta State University (VSU) and my dissertation topic is the effect of office discipline referrals (ODRs) by race and gender on the reading comprehension scores of fifth grade students at four rural elementary schools in southwest Georgia. The indicator for reading comprehension will be the beginning of the year and end of the year *DIBELS* Oral Reading Fluency scores from the 2012-2013 school term.

I would like your permission to use your school's disciplinary records and ORF scores for all fifth grade students during the 2012-2013 school year for this study. It will be sufficient to identify only the number of office discipline referrals (if any) a student received and the consequences administered to the student during the data collection period. A detailed description of the incident will not be necessary. Since disciplinary records are tracked through your student information system, (SIS) and *DIBELS* data can be retrieved electronically, there would be no disruption of the school day and participants in the study would miss no instructional time. The personal data of students will be kept confidential; none of the student's names will appear in the study. Neither your school nor the community will be identified by name in this study.

I hope you will allow me to use your data so that I may conduct this study. If you have any questions, comments, or concerns please call me at (229) 942-3318 or email me

at mcullifer@early.k12.ga.us. If you allow me to use your data, you may submit it electronically to the email address above. Microsoft Excel is the preferred format, but I will make whatever adjustments are needed for my data collection tables. In the *DIBELS* data spreadsheet, students will need to be identified by race and gender. Following the study, all data pertaining to your school will be destroyed.

If you will allow your school's data to be used in this study, please sign below and return to me using the enclosed self-addressed stamped envelope.

Thank you,
Matthew Cullifer

I, _____ give my permission for my school's disciplinary and *DIBELS* Oral Reading Fluency data from the 2012-2013 school year to be used in this study.

Printed name: _____ Title: _____

Signature: _____

APPENDIX C

Figures 1-9

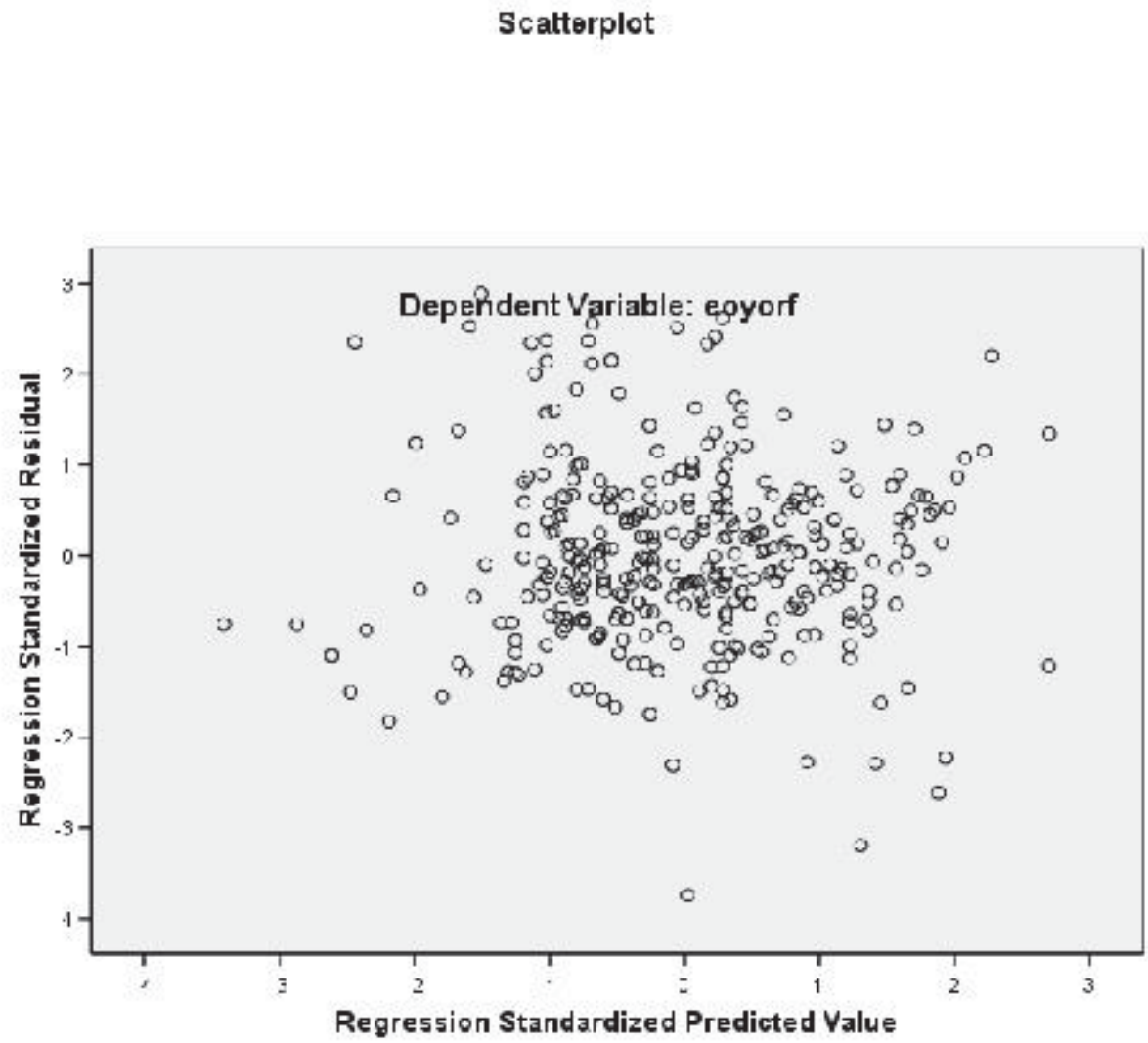

Figure 1

EOYORF Scatterplot

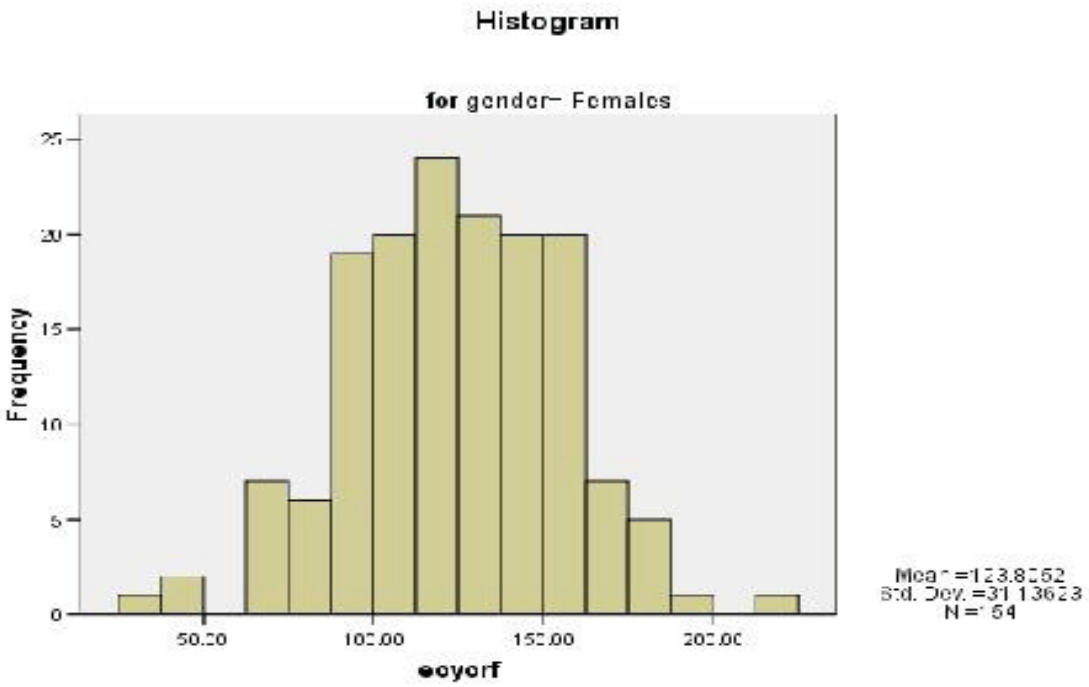

Figure 2

Histogram for EOYORF for Females

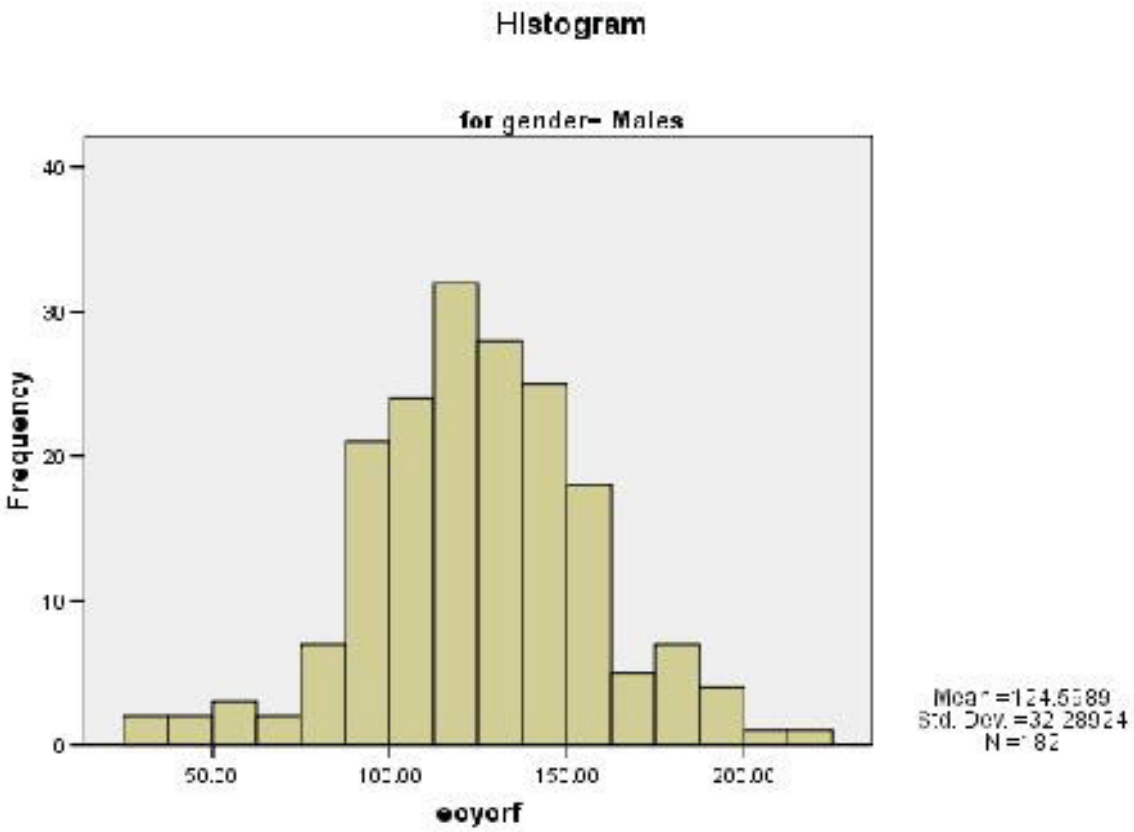

Figure 3

Histogram for EOYORF for Males

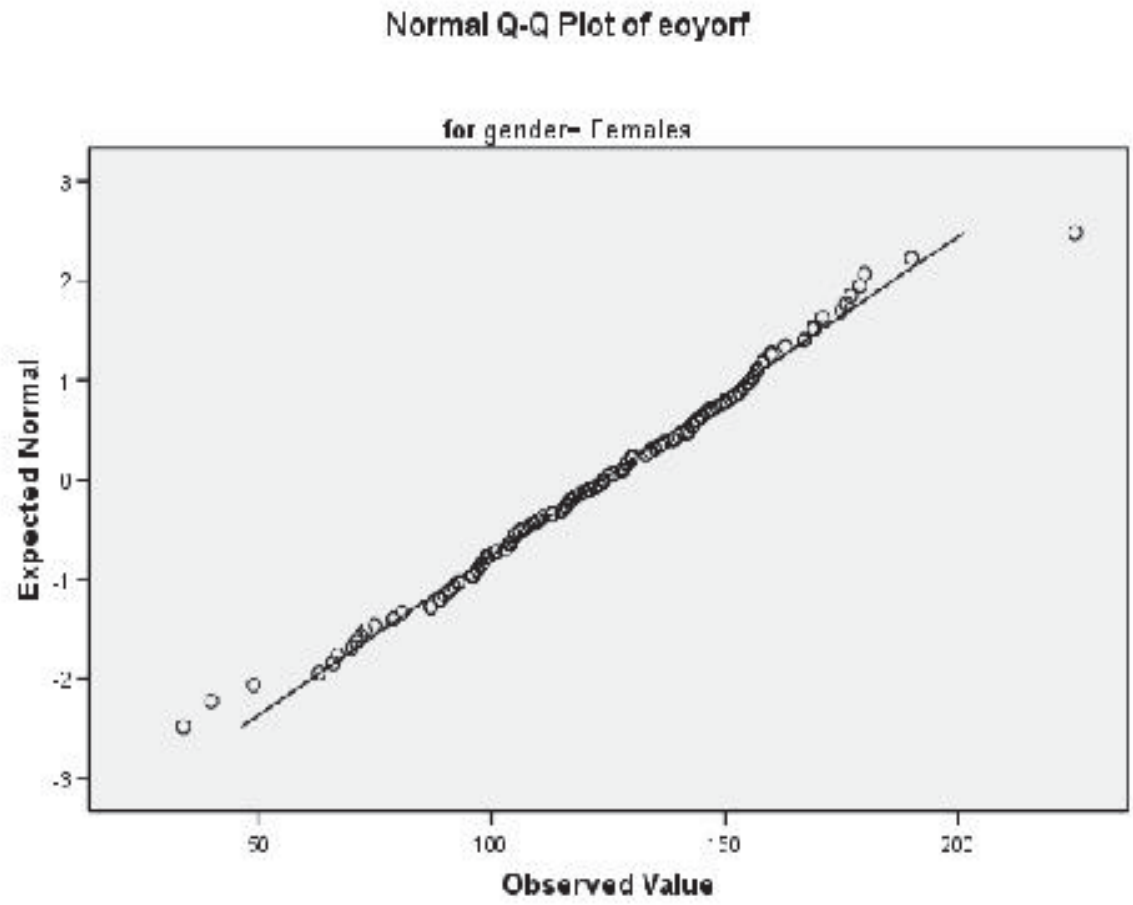

Figure 4

Normal Q-Q Plot of EOYORF for Females

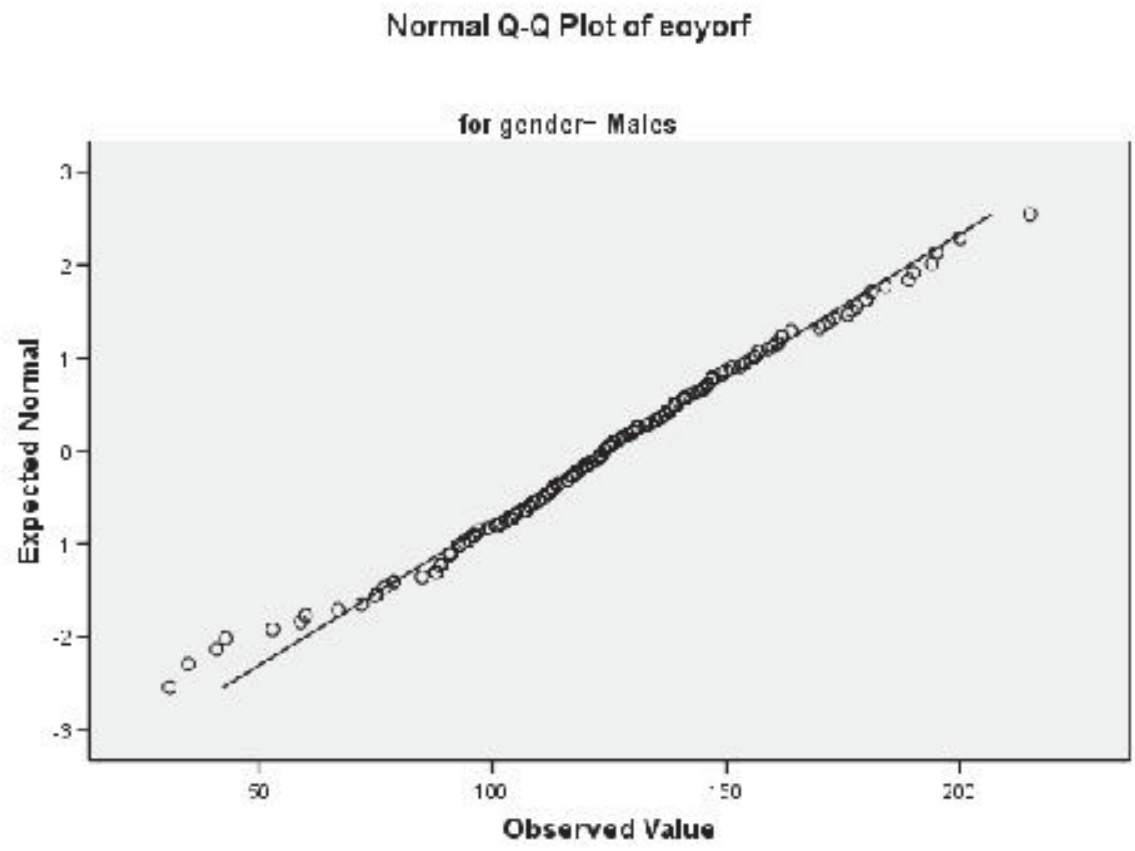

Figure 5

Normal Q-Q Plot of EOYORF for Males

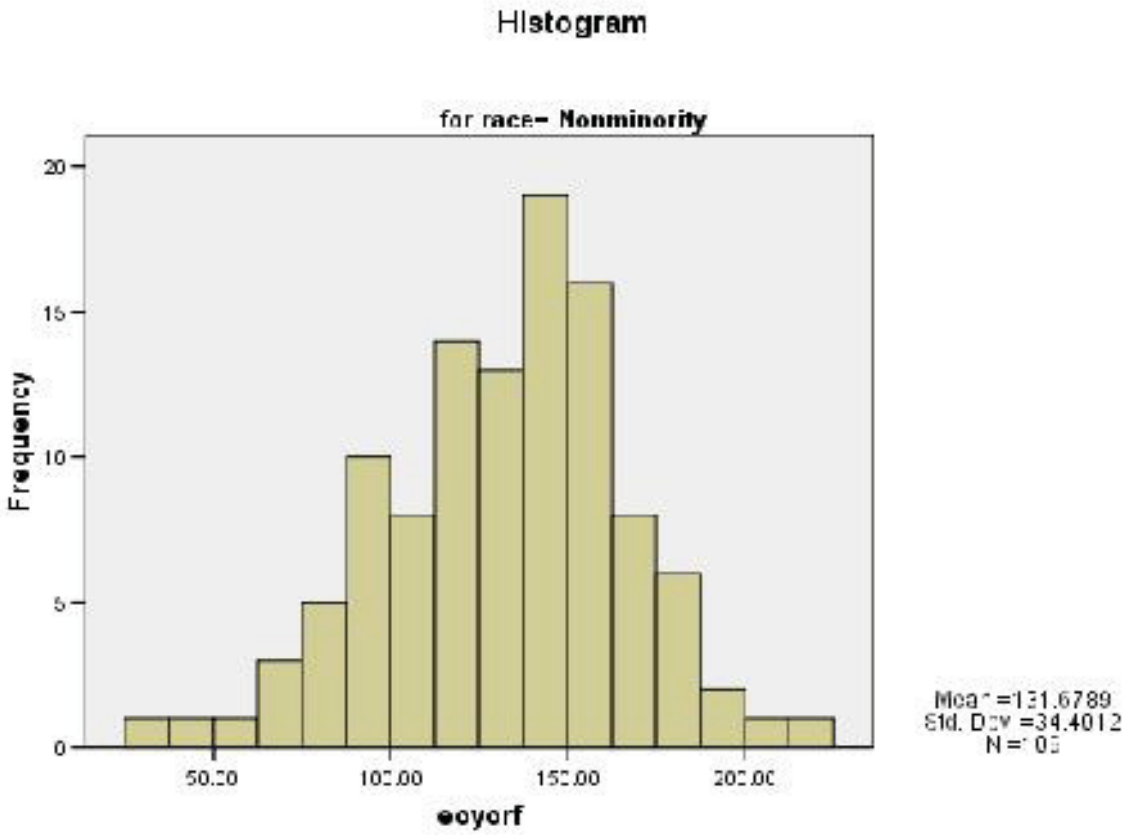

Figure 6

Histogram for EOYORF for Non-minorities

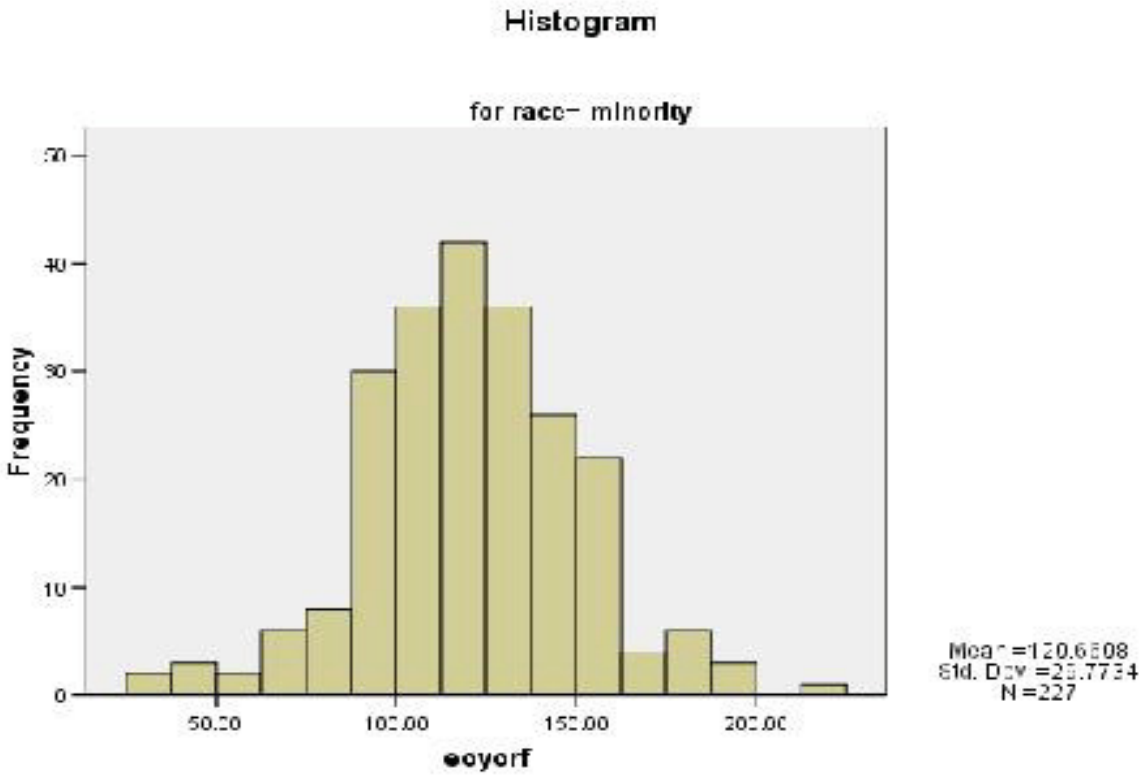

Figure 7

Histogram for EOYORF for Minorities

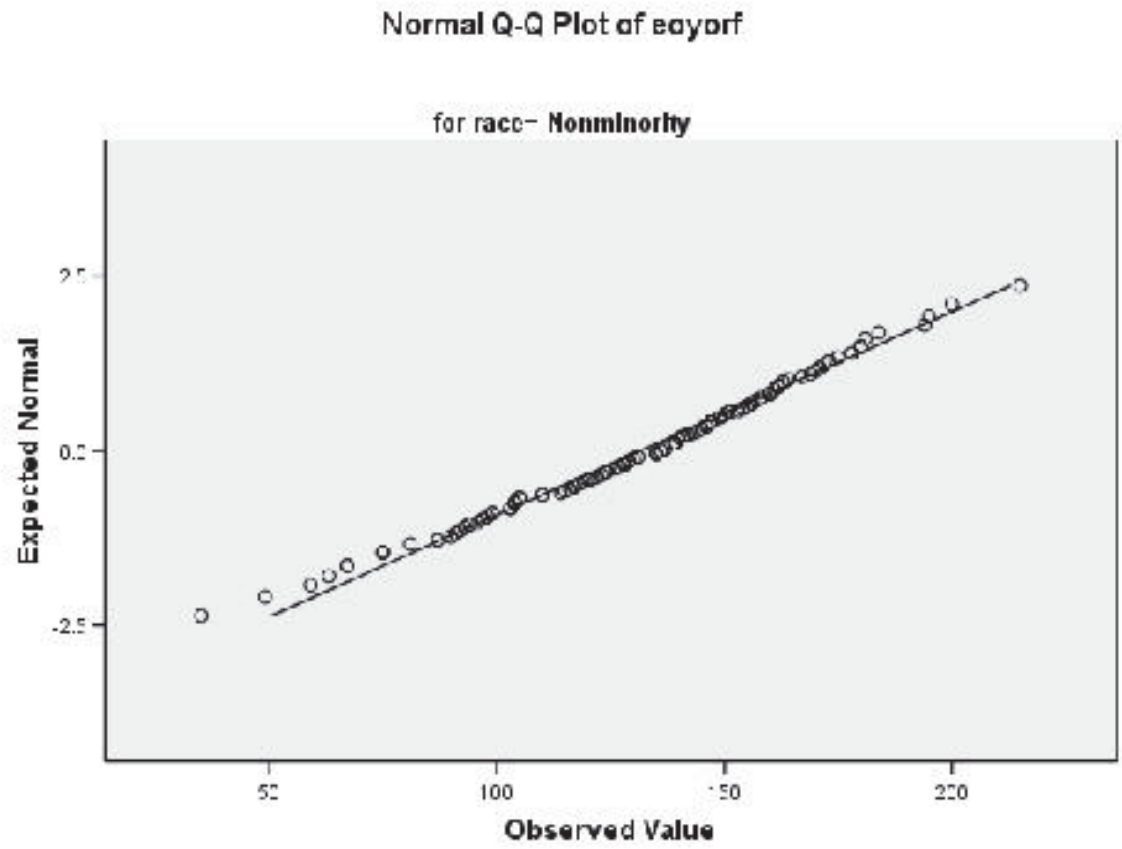

Figure 8

Normal Q-Q Plot of EOYORF for Non-minorities

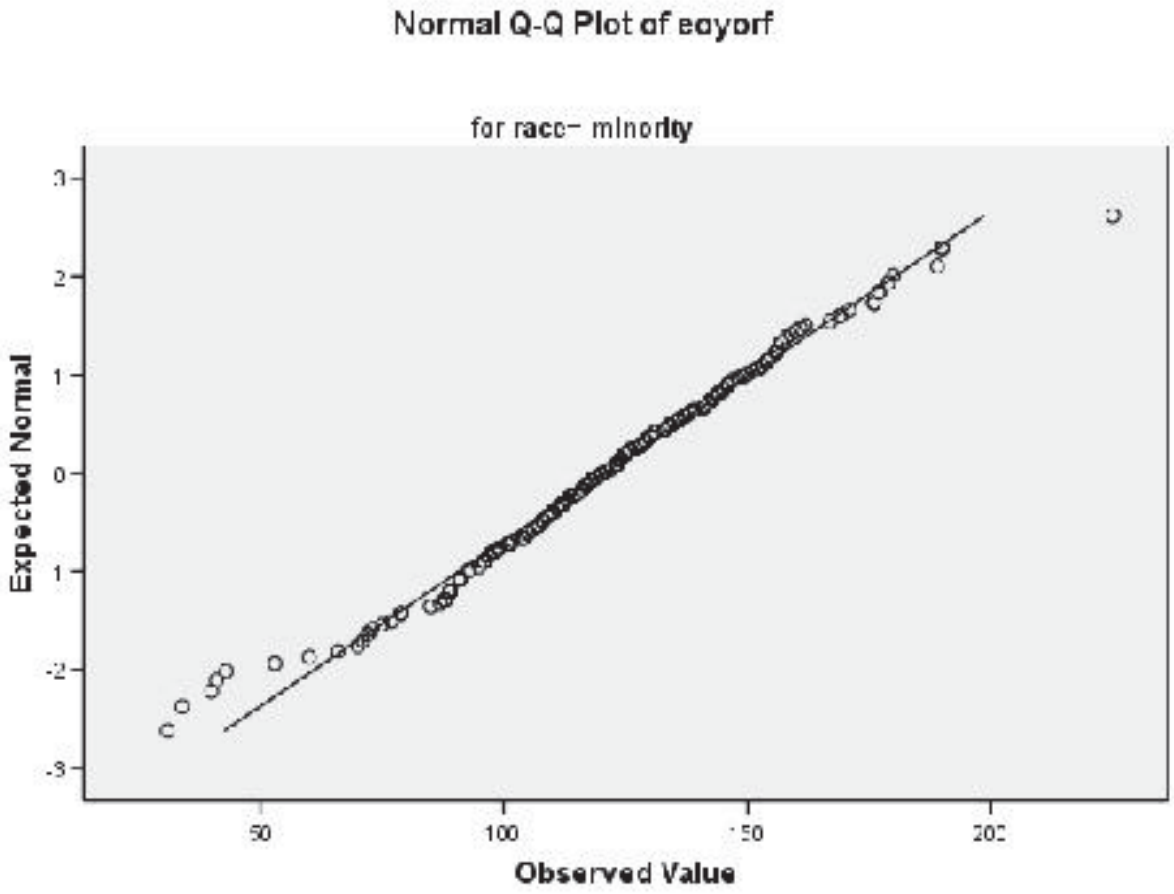

Figure 9

Normal Q-Q Plot of EOYORF for Minorities