Perceptions of Discrimination, Mentors and Role Models, and Motherhood among

Female Elementary and Middle-Level School Band Teachers

by

Xiaotian Xu

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Graduate Supervisory Committee:

Jill M. Sullivan, Chair
Margaret Schmidt
Sandra Stauffer

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ABSTRACT

This study aimed to investigate whether female elementary and middle-level (middle school and junior high school) band teachers in the United States perceive discrimination in their profession of band teaching. Data were collected from 241 female band teachers who completed an online questionnaire on their demographic background and perceptions of discrimination, sexism, sex stereotypes, job isolation, mentors and role models, and working as mothers. The study explored the influence of various independent variables, including age, levels of teaching, level of education, primary instruments, years of music teaching experience, years of band teaching experience, region of school, location of school, and type of school.

Statistical analyses revealed that significant differences in perceptions of discrimination, sexism, sex stereotypes, and job isolation varied according to age, levels of teaching, and years of music and band teaching experience. No significant differences were found in any perceptions by the level of education, primary instrument, region, location, and types of school. In addition, the majority of respondents reported that their mentors and role models were their colleagues rather than through formal mentoring programs. Also, the majority of respondents reported feeling anxious about being a mother while pursuing their careers.

Future research is recommended to interview female elementary and middle/high school band teachers aged 21–30 and 31–40 with 1–5 and 6–10 years of teaching experience to gain a better understanding of their daily work and to identify solutions for working mothers and increased professional mentorship.

DEDICATION

I dedicate this dissertation to the most important people in my life. To my dear parents, I

am endlessly grateful for your love, guidance, and support throughout my entire journey

of education. To my beloved boyfriend, your encouragement and support have been the

driving force behind my pursuit of this academic achievement. Without your love, I

would not have had the courage to pursue my passion for music and academic studies.

ACKNOWLEDGMENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Chapter 1

INTRODUCTION

Women band conductors in North America have struggled to be valued and have

been underrepresented in the male-dominated profession of wind band conducting and

wind band performing (Bovin, 2020; Coen-Mishlan, 2015; Feather, 1980; Fischer-

Croneis, 2016; Fiske, 1997; Gould, 1996, 2001; Grant, 2000; Greaves-Spurgeon, 1998;

Jones, 2010; McKeage, 2002, 2004; Minette, 2011; MTD Research, 2015; Mullan, 2014;

Music Educators National Conference, 2001; Payne, 1996; Sears, 2010, 2014; Shaker,

2020; Sheldon & Hartley, 2012; Sullivan, 2016b). Women music educators report that

their careers as school band directors are challenging due to discrimination, sex

stereotyping, isolation, sexism, and being marginalized (Bovin, 2020; Coen-Mishlan,

2015; Feather, 1980; Fischer-Croneis, 2016; Jones, 2010; Minette, 2011; Mullan, 2014;

Sears, 2010). Encouragingly, Sullivan (2017b), in her edited women's band historical

anthology, revealed that despite the many obstacles women have encountered in

participating in the field, they accomplished magnificence in band conducting and

performing throughout the 1880s until today. The existing studies are evidence that the

field of wind band conducting has been slow to welcome women into the profession. One

of the reasons for this phenomenon could be that wind bands in the U.S. were influenced

by the patriarchal military bands from Europe, which had male-only membership until

World War II (Sullivan, 2017b). From the earliest newspaper reports, "band of musick"

in North America dated back to 1714 in New York, and for a long time, the players in the

bands, including the conductor, were men, while women were not allowed to join

professional bands except as violin, soprano, or harp soloists until they formed their

1

"ladies bands" in the 1890s (Camus, 2001). The U.S. federal government enacted

numerous laws and policies in 1972, including Title VII and Title IX, to eliminate sexual

discrimination in the United States. However, due in part to the systemic patriarchy in the

field of band conducting, the number of female school band directors remains smaller

than that of their male counterparts (Music Educators National Conference, 2001; MTD

Research, 2015; Payne, 1996; Shaker, 2020; Sheldon & Hartley, 2012).

      The definition of patriarchy has evolved and deepened within specific disciplines

as society has progressed. A famous British feminist scholar, Sylvia Walby (1990),

defines patriarchy as "a system of social structures and practices in which men dominate,

oppress and exploit women" (p. 20). Patriarchy is often defined as a male-dominated

system (Alexandre & Duncan, 2016; Christ, 2016; Lerner, 1986; Walby, 1990). Another

feminist historian Carol P. Christ (2016), redefined patriarchy by interweaving various

threads involving religion, politics, history, and society.

      Lucy Green (1997), a music education scholar and music educator, indicated that

patriarchy involves both sexes' contributions to the practical and symbolic positions with

two-dimensional consent or dissent. In other words, patriarchy results from the agreement

of men and women about the social system. Green (1997) explored the specific

manifestations of patriarchy in the field of music and the forms of women's resistance to

patriarchy. One way to break male dominance is through resistance on the part of women.

As Green (1997) noted,

      In musical patriarchy, collusion involves women's consent to the terms of

      the restrictions placed upon their musical practices. Such consent surfaces

      in subtle and often unnoticeable ways, through the willingness to conform,

through reluctance to deviate, through embarrassment, and, extremely,

fear. As regards to resistance, certain women throughout history have

refused restrictions on their performance activities by breaking structures

and playing taboo instruments in public places. Often such resistance has

been the harbinger of major social changes in women's instrumental

practices. (p. 57)

Male domination in the world of music conducting is a distinctive feature

of patriarchy. In traditional societal expectations, leadership is seen by some as

naturally masculine. While the emergence of women in the roles of music

conductor and leader breaks the feminine norm, available research data revealed

that women's career pursuits in band conducting are slowly gaining in parity,

clearly challenging the "symbolic expression of 'feminine' characteristics"

(Green, 1997, p. 15). However, women are significantly underrepresented in this

field in terms of numbers (Music Educators National Conference, 2001; MTD

Research, 2015; Payne, 1996; Shaker, 2020; Sheldon & Hartley, 2012).

Women occupied fewer full-time and tenure-track U.S. music faculty positions at

the collegiate level than men, with little change in the gender gap between 1993 and

2017. According to Shaker's study (2020), using the 2017–2018 *Directory of Music

Faculties in Colleges and Universities, U.S. and Canada* compiled by the College Music

Society for four-year colleges and universities, women held 32.5% of full-time music

faculty positions. Compared to Payne's results (1996), Shaker's data (2020) revealed that

the number of full-time female music faculty members had increased by only 8.3% after

a quarter-century. Unfortunately, the percentage of female band directors in American

colleges and universities was 11.3%, a very large gap compared to their male counterparts (Payne, 1996). Despite a 6.1% increase in the percentage of female band directors, this staggering sex inequality should be the cause of tremendous embarrassment when considering the number of females who play in bands (Payne, 1996). The lack of women who conduct collegiate bands should inspire music organizations to recruit and retain female band directors.

Women conductors have also been underrepresented in the Midwest Clinic International Band, Orchestra and Music Conference (Shaker, 2020; Sheldon & Hartley, 2012). As the world's largest instrumental music education conference, the Midwest Clinic International Band, Orchestra and Music Conference serve more than 18,000 attendees annually from all 50 states in the United States and more than 40 countries worldwide (The Midwest Clinic, 2022). Sheldon and Hartley (2012) collected data from the Midwest Band and Orchestra Clinic archives from 1947 to 2008 to identify band directors' sex trends (See Figure 1.1). They reported that from 1947 to 2008, 7.56% of the 602 primary conductors who performed at the Midwest Clinic were women, and 92.44% were men. Furthermore, Sheldon and Hartley (2012) indicated that most female band directors at the Midwest Clinic (67% of all female conductors) conducted junior high or middle school bands, but they are still less numerous than their male counterparts. In the same study, Sheldon and Hartley (2012) gathered sex and race information on graduate student members of the College Band Directors National Association (CBDNA) between 1999 to 2008 and participants in conducting workshops or symposia from 1996 to 2008. They found that from 139 institutions between 1999 and 2008, 28% of the conducting students ($N = 570$) were female ($n = 160$), and 72% were male ($n = 410$).

Data showed that 1,316 participants in conducting workshops or symposia included 426 (32.37%) females and 890 (67.63%) males (Sheldon and Hartley, 2012).

Figure 1.1

Sex Distribution of Primary Band Conductors at the Midwest Band and Orchestra Clinic from 1947–2008 (Sheldon & Hartley, 2012) and 2009–2018 (Shaker, 2020)
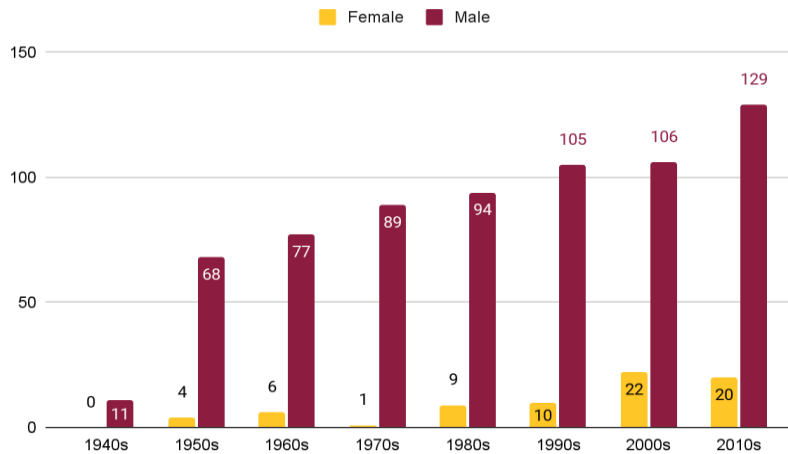
In 2020, Shaker updated Sheldon's and Hartley's work (2012) on the sex distribution of primary band conductors at the Midwest Clinic (See Figure 1.1). She collected and analyzed programs from archives of the Midwest Clinic from 2009 to 2018. Shaker (2020) reported that women conducted 20 (13.4%) of 149 concert band performances at the Midwest Clinic from 2009 to 2018, a slight improvement from the previous study (Sheldon & Hartley, 2012). Women serving as primary band conductors have increased in the 72 years of the Clinic's history, but not by much. Four female conductors performed in the 1950s, six conducted in the 1960s, one in the 1970s, nine in the 1980s, ten in the 1990s, twenty-two in the 2000s (Sheldon & Hartley, 2012), and twenty in the 2010s (Shaker, 2020). From 1947 to 2008, women serving as primary conductors directed 52 ensembles at the Midwest Clinic: 35 middle school bands, 15 high

school bands, one elementary band, and one adult band (Sheldon & Hartley, 2012). From 2009 to 2018, women served as primary conductors for 20 ensembles at the Midwest Clinic: 11 middle school bands, four high school bands, three college bands, and two adult bands (Shaker, 2020). According to Shaker (2020) and Sheldon and Hartley (2012), combined total women band directors conducted one elementary school band, 46 middle school bands, 19 high school bands, three college bands, one adult band, and zero military bands over 72 years at the Midwest Clinic (See Figure 1.2). Shaker (2020) also collected data from the College Band Directors National Conference Program Archives. She reported that seven of the 125 college bands at the CBDNA national biennial conference between 1993 and 2019 were directed by women (5.3%), who conducted only in 2001, 2015, 2017, and 2019 (Shaker, 2020). Female band directors continued to lag behind males in directing bands at this conference. It seems that professional efforts for diversity and inclusion are not increasing the number of women in the profession.

Figure 1.2

Sex Distribution of Primary Band Conductors by Ensemble at the Midwest Clinic, 1947–2018 (Shaker, 2020; Sheldon & Hartley, 2012)
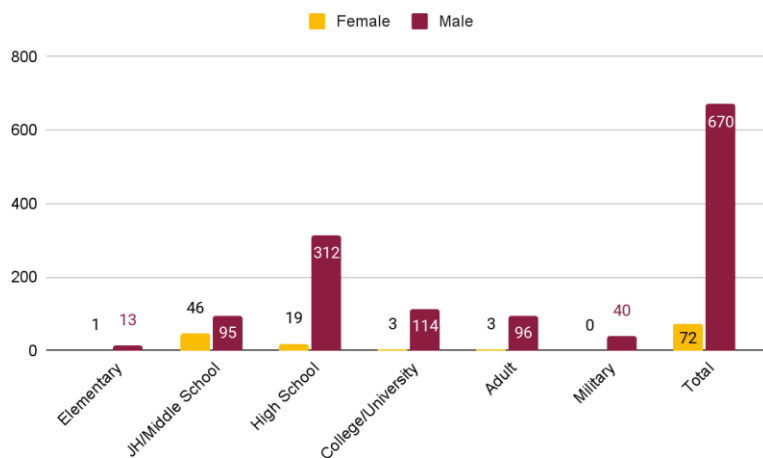
The fact that women are at a disadvantage in band conducting spills over into K–12 schooling. Sex inequity seems to have remained for decades and has changed little in K–12 schools (Music Educators National Conference, 2001; MTD Research, 2015). The number of female teachers in instrumental music education, especially in high school, is similarly underwhelming. In 2001, the National Association for Music Education (NAfME, known at the time as MENC) released information regarding sex trends among its active members, which revealed that the number of female teachers (11,611) in the band area was about half that of males (22,129). Females equaled or even surpassed males in most areas of music teaching, such as chorus, orchestra, keyboard, guitar, and general music at the preschool, elementary, and middle/secondary levels, while males dominated in band and jazz teaching from elementary to college/university levels (MENC, 2001). There was a smaller gap between female conductors (3,746) and male conductors (4,462) in elementary school bands. The number of female conductors (4,851) in junior high/middle schools was about half that of males (8,455), and in high schools, the number of females (3,014) was only one-third that of males (9,212) (Music Educators National Conference, 2001). As Green (1997) stated, "Women have mainly participated in musical pursuits which in some way enable a symbolic expression of 'feminine' characteristics" (p. 15), and perhaps conducting is still not seen as an acceptable musical pursuit for women.

In 2015, as a self-proclaimed national leader in school performing arts data, Music Theatre Dance Research (MTD Research) posted a sex analysis of music teachers on their website. According to the MTD report (2015), the number of female band teachers (13,548, 34.88%) in K–12 schools remained disproportionately lower than that

of their male counterparts (25,297, 65.12%). After 15 years, women band teachers in K–12 are still lower than men. The population of men and women elementary band teachers is nearly equal. However, there is still a significant gap in the population of middle/high school men and women band teachers. See Table 1.1 for the sex numbers and percentages of female and male band teachers from MENC (2001) and MTD Research (2015).

Table 1.1

Sex Numbers and Percentage of Band Teachers from MENC (2001) and MTD (2015)

	MENC (2001)		MTD (2015)		MENC (2001)		MTD (2015)	
	Female	%	Female	%	Male	%	Male	%
Elementary (K–5)	3,746	45.64	5,796	50.17	4,462	54.36	5,757	49.83
Middle/Junior (6–8)	4,851	36.46	5,070	35.60	8,455	63.54	9,171	64.40
Senior High (9–12)	3,014	24.65	2,682	20.55	9,212	75.35	10,369	79.45
Total	11,611	34.41	13,548	34.88	22,129	65.59	25,297	65.12

Need for the Study

In recent years, there has been increasing research focus on women high school or college band directors (Bovin, 2020; Coen-Mishlan, 2015; Feather, 1980; Fischer-Croneis, 2016; Fiske, 1997; Fitzpatrick, 2013; Gould, 1996, 2001; Grant, 2000; Greaves-Spurgeon, 1998; Jackson, 1996; Johnson, 2020; Jones, 2010; Minette, 2011; Mullan, 2014; Sears, 2010, 2014; Wilson, 2014). Some of these research studies used qualitative methods (Coen-Mishlan, 2015; Fischer-Croneis, 2016; Fiske, 1997; Fitzpatrick, 2013; Gould, 1996, 2001; Grant, 2000; Greaves-Spurgeon, 1998; Jackson, 1996; Jones, 2010; Mullan, 2014; Sears, 2010, 2014; Wilson, 2014), such as case study (Coen-Mishlan,

2015; Fischer-Croneis, 2016; Sears, 2010,2014), phenomenological study (Mullan, 2014; Wilson, 2014), or narrative research (Jones, 2010) to collect data. Numerous studies reported that female band directors faced many challenges, which may have contributed to the lack of female band directors. Sex discrimination is a common topic for researchers who study women high school band directors. Many scholars believe that sex discrimination against female high school band directors remains in the hiring process, professional conferences, music events, school districts, and schools (Coen-Mishlan, 2015; Fischer-Croneis, 2016; Jones, 2010; Mullan, 2014; Sears, 2010; Wilson, 2014). Other topics in the literature about women band directors include sex stereotyping (Coen-Mishlan, 2015; Feather, 1980; Fischer-Croneis, 2016; Sears, 2010, 2014), isolation (Fischer-Croneis, 2016; Fiske, 1997; Grant, 2000; Greaves-Spurgeon, 1998; Sears, 2010), long hours and conflicts with family responsibilities (Greaves-Spurgeon, 1998; Jones, 2010; Mullan, 2014; Sears, 2010), and the lack of appropriate role models and mentors (Gould, 1996, 2001; Grant, 2000; McKeage, 2002, 2004).

The existing research provided a deep exploration into the realities of many female high school band directors. Although some quantitative studies have emerged, they continue to discuss the experiences of female high school band directors (Bovin, 2020; Greaves-Spurgeon, 1998; Minette, 2011) and mentorship for female wind band conductors planning to conduct and teach at the collegiate level (Johnson, 2020). In contrast, the professional experiences of female band teachers at elementary and middle levels nationwide remain less explored and studied using quantitative methods. Few previous researchers studied women middle/junior high school (6–9) band teachers (Fischer-Croneis, 2016; Minette, 2011). There is no research on women elementary (K–

5) band teachers. The majority of the women conductors in the Midwest Clinic have been elementary and middle school females (See Figure 2) (Shaker, 2020; Sheldon & Hartley, 2012). However, this level of women band teachers is rarely included in the research. Therefore, an updated quantitative study is necessary to understand women band teachers at elementary and middle-level schools.

In addition, many research studies on female band directors are regional (Beaver, 1973; Greaves-Spurgeon, 1998; Leimer, 2012; Minette, 2011). For example, Beaver (1973) investigated North Carolina high school band directors' personalities and values. Greaves-Spurgeon (1998) focused on women high school band directors in Georgia to study role models, mentors, networks, and gender-related behaviors. Leimer (2012) examined female high school band directors in Florida. Minette (2011) explored the perceptions of female secondary (Grades 6–12) band music teachers on their music profession in the midwestern states of Iowa, Minnesota, and Wisconsin.

Purpose of Study

This dissertation aimed to investigate the perceptions of female elementary and middle-level school band teachers across the United States to reveal whether or not they perceived themselves as discriminated against in the profession of band teaching. Also, data were collected to examine the influence of mentors and role models and their perceptions of working mothers.

Research Questions

This study aims to answer five descriptive and four parametric research questions.

Research Question 1: What are the perceptions of female elementary and middle-level school band teachers toward discrimination, sexism, sex stereotypes, and job isolation?

Research Question 2: How do female elementary and middle-level school band teachers' desires to raise a family affect their careers?

Research Question 3: Who do female elementary and middle-level school band teachers look to as mentors and role models?

Research Question 4: What is the importance of mentors and role models for female elementary and middle-level school band teachers?

Research Question 5: Do these female elementary and middle-level school band teachers consider changing to teaching at a higher level? Why or why not?

Research Question 6: Do female band teachers' age, levels of teaching, and level of education influence perceptions of discrimination, sexism, sex stereotypes, and job isolation?

Research Question 7: Do perceptions of discrimination, sexism, sex stereotypes, and job isolation differ among female band teachers by primary instrument?

Research Question 8: Do female band teacher years of teaching experience and female band teacher years of band teaching experience influence perceptions of discrimination, sexism, sex stereotyping, and job isolation in their careers?

Research Question 9: Do female band teachers' region of school, location of school, and type of school influence perceptions of discrimination, sexism, sex stereotyping, and job isolation in their careers?

Definitions of Terms

Band. A group of musicians organized to play woodwind, brass, and percussion instruments.

Boys' Club/Good Old Boys' Club. A tightly-knit network of male conductors who were unwilling to accept women into their group (Bovin, 2020; Fischer-Croneis, 2016; Fiske, 1997; Fitzpatrick, 2013; Grant, 2000; Greaves-Spurgeon, 1998; Mullan, 2014; Sears, 2010; Wilson, 2014).

Discrimination. Discrimination is "the unfair or prejudicial treatment of people and groups based on race, gender, age or sexual orientation" (American Psychological Association, 2019). The unfair or prejudicial treatment could be "blatant discrimination" or "subtle discrimination" (Greenland et al., 2019; Sue et al., 2007; West, 2019; Williams, 2019), which is an "implicit bias" or "implicit prejudice" that exists in the subconsciousness or unconsciousness (Nosek et al., 2007; Schlachter & Rolf, 2017; West & Eaton, 2019).

Elementary School. A school including kindergarten to fifth grades.

Female. A person is typically born with a set of X and X chromosomes (XX) and develops female reproductive organs (Garofalo & Garvin, 2020).

Gender. Gender refers to cultural, psychological, social expectations and experiences associated with roles or self-identity as "women" and "men" (American Psychological Association, 2018; Wood & Eagly, 2015).

High School. A school usually includes ninth through twelfth grades.

Job Isolation. Job isolation is the feeling of loneliness that an individual experience at work (Kose & Özmen, 2021). One aspect that led to job isolation for

females was found to be known as the "Boy's Club or Good Ol'Boys Club," where male conductors were unwilling to accept women into their groups (Bovin, 2020; Fischer-Croneis, 2016; Fiske, 1997; Fitzpatrick, 2013; Grant, 2000; Greaves-Spurgeon, 1998; Mullan, 2014; Sears, 2010; Wilson, 2014). This situation can result in female band teachers being excluded from professional settings, such as conferences (Fischer-Croneis, 2016; Mullan, 2014; Sears, 2010), competition events (Sears, 2010), and schools (Fischer-Croneis, 2016).

K–12. School levels of kindergarten to twelfth grade in the United States.

Male. A person is typically born with a set of X and Y chromosomes (XY) and develops male reproductive organs (Garofalo & Garvin, 2020).

Man. The individual has a male gender identity, which might or might not match the sex they were assigned at birth (Diamond, 2018).

Middle-Level School. A school including middle school (typically sixth to eighth grades) or junior high school (typically seventh to ninth grades).

Mentor. An experienced and trusted adviser, counselor, guide, tutor, or coach. Grant (2000) defined a mentor as a teacher offering support, help, and teaching through example.

Motherhood. A person enters the state of being a mother and spends time with the children as a caregiver (Garcia, 2016; Hays, 1996) as long as the individual recognizes their duty as a mother.

Role Model. A person is a "symbolic entity" (Lockwood & Kunda, 1997) who inspires and motivates others and is respected (Sealy & Singh, 2010), and is looked up to as an example and imitated by others (Bricheno & Thornton, 2007; Osabu-Kle, 2005).

Sex. Sex is binary, based directly on reproductive organs and gametes determining the biology of two sex categories: "female" or "male" (Hyde et al., 2019; Garofalo & Garvin, 2020).

Sexism. Sexism usually refers to "sex discrimination." Mary Anne Warren (1985) described sexism as "wrongful discrimination on the basis of sex" (p. 83). Swim and Hyers (2009) defined "sexism as individuals' attitudes, beliefs, and behaviors, and organizational, institutional, and cultural practices that either reflect negative evaluations of individuals based on their gender or support unequal status of women and men" (p. 407).

Sex Stereotypes/Sex Stereotyping. A sex stereotype describes "a set of beliefs about the personal characteristics of women and of men which are shared by the members of some group" (Ashmore & Del Boca, 1979, p. 221). Stereotypes are "general expectations of members of a particular social group" (Ellemers, 2018, p. 276). Because "sex" is binary and directly determines the physical characteristics associated with being "female" or "male" (Hyde et al., 2019), "gender stereotypes" are used more frequently in gender research, particularly in studies that emphasize psychological identity (Canal, Garnham & Oakhill, 2015; Eagly & Mladinic, 1994; Ellermer, 2018; Heilman, 2012; Kite et al., 2008). For this study, "sex stereotypes" are selected and defined as shared social expectations of feminine and masculine characteristics based on the physical and psychological characteristics of band teachers.

Woman. The individual has a female gender identity, which might or might not match the sex they were assigned at birth (Diamond, 2018).

14

Delimitations

This study involved female elementary and middle-level school band teachers currently working in the United States. All female participants in this study identified themselves as women, regardless of their biological sex. Although this condition probably influenced their opinions, those participants in the study, as long as they worked as elementary or middle-level school band teachers and identified themselves as female, were included.

Also, this study investigated elementary and middle-level school wind band teachers. Teachers of orchestras and choirs are excluded from this study. However, if the respondents teach in multiple subject areas and grade levels simultaneously, one of which is elementary or middle school band, they were still included in the study.

Furthermore, participants for this study included members of the National Association for Music Education (NAfME) and the Women Band Directors International (WBDI) from each state in the United States. Data collection and analysis were limited to the participants' self-reports. Therefore, the findings of this study are not fully applicable to female teachers working outside of the elementary and middle-level school band setting or to teachers who are not members of the NAfME and the WBDI.

Chapter 2

REVIEW OF LITERATURE

This study investigated the perceptions of female elementary and middle-level

school band teachers across the United States to reveal whether or not they perceived

themselves as discriminated against in the profession of band teaching. Also, data were

collected to examine the influence of mentors and role models and their perceptions as

working mothers.

This chapter summarized research reviewing the history of women in bands

(Howe, 2006, 2016; Kerbey, 2015; Sullivan, 2008, 2011, 2017b, 2017c), research about

sex inequity in music publications (Digón Regueiro, 2000; Koza, 1991, 1992, 1993,

1994; Kruse et al., 2015; McWilliams, 2003), gender and musical instrument sex

stereotypes (Abeles, 2009; Abeles & Porter, 1978; Delzell & Leppla, 1992; Griswold &

Chroback, 1981), women participation in the jazz bands (Barber, 1998; McKeage, 2004;

Van Vleet, 2021), different types of discrimination experienced by women teaching wind

band (Bovin, 2020; Coen-Mishlan, 2015; Feather, 1980; Fischer-Croneis, 2016; Greaves-

Spurgeon, 1998; Jones, 2010; Minette, 2011; Mullan, 2014; Sears, 2010, 2014; Wilson,

2014), and challenges of women in wind band teaching (Gould, 1996, 2001; Grant, 2000;

Greaves-Spurgeon, 1998; Johnson, 2020; Terban, 2011; Jones, 2010; Fitzpatrick, 2013;

Minette, 2011; Mullan, 2014; Sears, 2010).

History of Women in Wind Bands

Women could only play violin or harp in bands for a long time or perform in

ladies' bands (Camus, 2001). In the United States, the oldest wind band was the

16

traditional male military band, which had existed since 1714 (Camus, 2001). Ladies' bands as part of the town-band movement became popular throughout the United States from the end of the Civil War in 1865 through World War I, beginning in 1917 (Sullivan, 2008). However, men were often the directors of ladies' bands during this time; for example, Professor E. D. Wood of the Aledo (Illinois) Ladies' Cornet Band and Mr. F. U. Elser, Ellensburg (Washington) Girls' Band (Howe, 2017). Howe (2006) also found 160 photographs of 107 different ladies' bands on the Internet Bandsman's Everything Within (IBEW) website and found that women as conductors emerged between 1880 and 1920. These vintage pictures display a woman standing or sitting in front of a band, including famous professional bandleaders Helen May Butler and Miss Bertha Meyer (Howe, 2009). Directress Helen May Butler, "Miss Sousa Junior," formed an accomplished wind ensemble of professional women musicians from the late 1890s into the early 1910s (Meyers, 2017).

Public school bands such as concert bands, marching bands, and swing bands proliferated in normal schools, high schools, colleges, and universities across the United States, primarily in the 1920s and 1930s (Howe, 2017; Sullivan & Spears, 2017). In the mid-1850s, secondary school bands began to appear sporadically (Sullivan & Spears, 2017). The earliest known all-female school band in the United States was the Iowa State Normal School Ladies' Band in 1906 in Cedar Falls (Sullivan & Spears, 2017). According to historical photographs, men were commonly the bandleaders or directors for these all-female school bands, as was the case with the Iowa State Normal School Ladies' Band, the Benton Harbor women's high school band in Benton Harbor, Michigan, an all-female marching band from the University of North Carolina at

Greensboro, and an all-female band from Florida State University in Tallahassee

(Sullivan & Spears, 2017). Seemingly, the male school band director's stereotype has

been historically and culturally constructed and continues to persist today.

Women's military bands in America were formed in 1942, originating from the

Women's Army Auxiliary Corps (WAAC) Band #1 (Sullivan, 2011). Decades later,

evolving into the 14th Army Band (WAC), this women's military band was the first, last,

and longest-serving all-female military band in United States history (Kerbey, 2015).

Although women's bands had existed in the United States since the Civil War (Olson,

1981), it was not until World War II that women were able to serve in a military band

(Sullivan, 2011). Women's military bands emerged because women enlisted in the

service, needing military music for their martial and entertainment activities (Sullivan,

2011). During World War II, seven full-time-duty women's bands served the military: the

Women's Army Corps Bands (WAC)—400th, 401st, 402nd, 403rd, and 404th

("Colored"); the Coast Guard SPAR Band; and the Marine Corps Women's Reserve

Band (MCWR) (Sullivan, 2017a). These women's military bands made a great

contribution during WWII. Their performances not only provided a temporary distraction

from the war for their American audiences but also simultaneously helped the

government sell bonds for millions of dollars to support the military and propagated

patriotism in local and national tours (Sullivan, 2017a). Furthermore, the women's

military bands, including those beyond the WWII women's bands, offered a great number

of conducting opportunities for female musicians. For example, the primary function of

musical duties by the 14th Army Band (WAC) included leading female troops in

regimental parades, marching troops to and from training classes, basic orientation

concerts for recruiting women, officer training orientations, graduation ceremonies, dance music entertainment at service clubs on the post, marching in public parades and performing concerts for military men and women in charity events, and playing for radio and television broadcasts. They did so under the musical direction of one male, Peter Berg, and 14 female conductors, including Alice Peters, Adah Straus, Barbara Graham, Bernice Goldstein, Celia Merrill, Charlotte Plummer, Florence Love, Joan Lamb, Katherine Allen, Leonora Hull, Margery Pickett, Mary Waterman, MaryBelle Nissly, and Ramona Meltz (Kerbey, 2015; Sullivan, 2011, 2017c).

Among these excellent female band directors, MaryBelle Nissly continued to direct, and she was asked to lead the "Women in the Air Force" (WAF) band after the end of World War II, between 1951 and 1961. In the 1950s, the U.S. Army Air Corps was reorganized as the United States Air Force, an independent military branch (Nichols, 2017). George Howard, the Commander and Conductor of the official Army Air Forces Band (AAF), assigned chief warrant officer (CWO) Samuel Kurtz to establish a Women in the Air Force (WAF) Band (Nichols, 2017). The 543rd Air Force Band (WAF) was activated on January 14, 1951. Mary Divens was the first conductor of the WAF Band, although she left the band due to pregnancy in August 1951 (Nichols, 2017). In order to ensure the success of the WAF Band, Howard invited an experienced and successful military musician MaryBelle Nissly who led the 400th WAC band during World War II, to take the leadership and promised to secure her the rank of Captain if she became the WAF's conductor (Nichols, 2017). Although faced with long-lasting problems, such as limited travel funds, inadequate administrative assistance, inappropriate field band policies, and a lack of band personnel, Captain MaryBelle Nissly continued to lead the

WAF band on performance tours across the country, which contributed to the WAF

band's outstanding reputation among both the military and the public (Nichols, 2017). As

the successor to the all-women military bands of World War II, the WAF Band served

not only its troops but the country and the public in important national affairs.

Therefore, according to extant historical sources, women have served as band

directors for a considerable time, although sometimes in separate spheres from men. In

addition, women have proudly served in their communities as musicians in town bands,

school bands, and in the military of their country.

Research about Sex Inequity in Music Publications

Gender issues relating to power, equity, and equal opportunity in music and music

education were found in music publications. Researchers revealed that publications such

as magazines, journals, and textbooks reinforced sex-stereotyping of musical instruments

for over hundred and fifty years by the unequal sex representation (Digón Regueiro,

2000; Koza, 1991, 1992, 1993, 1994; Kruse et al., 2014; McWilliams, 2003).

Koza (1991) explored music-related gender issues by analyzing *Godey's Lady's

Book,* published monthly in Philadelphia from 1830 to 1877. She examined female

musicians' images in *Godey's Lady's Book* to discuss music's association with women

and men, the restrictions of musical styles, instruments, and activities on women, and

descriptions of female musicians' roles in the private and public spheres. Koza (1991)

concluded that although women were increasingly teaching music, as documented in

Godey's Lady's Book, the nineteenth century's social values narrowly limited women's

musical choices and status as musicians. Furthermore, she pointed out that these social

values also harmed both men and women and continue to do so today.

Koza (1993) analyzed gender-related references in articles in the first ten volumes

of the *Music Supervisors' Journal* (*MSJ*) between 1914 and 1924. She found that the *MSJ*

primarily discussed "missing males" problems in music education, such as the lack of

boys' enrollment in school music classes, the role of music in the education of boys,

music career opportunities for males, the relationship of music to nature and character

development of boys, and boys' musical interests. *MSJ* articles blamed the lack of boys'

participation in music on poor teaching and limited repertoire. However, Koza (1993)

pointed out that the absence of women among professional musicians did not arouse the

same concern in the *MSJ*. This conclusion seems to confirm the paradoxical beliefs about

participation in musical activities discovered by Koza (1991) that have persisted since the

19th century. On the one hand, Koza (1991) commented that women and their music

professions roles, such as composers, conductors, and instrumentalists, were not

recognized. On the other hand, she argued that music is regarded as a feminine pursuit,

and therefore the masculinity of the men involved in music is sometimes questioned.

Koza (1992, 1994) examined the sixth-, seventh-, and eighth-grade teacher's

editions of nine middle school music textbooks published in 1988 by three United States

publishers. She analyzed music-related pictures (*N* = 3,487). She found that serious

inequities of females pictured in these books occurred. First, results showed that only

31.1 % of the music-related images in the textbooks were female. 68.9% of the

illustrations were males, and 19.7% of the men in the photos were named, compared to

7.6% of the women (Koza, 1994, p. 156). Second, only 23.7% of professional musician

images depicted a female. In these professional musician images, males were shown playing a wider range of instruments than females. Third, Koza discovered that the textbooks presented illustrated male conductors more than females, including choral ($n = $ 18, 94.7%) and instrumental ($n = 43$, 79.6%) conductors (Koza, 1994, p. 163). Although women conductors were described in the text, they were never shown in any illustrations conducting in the presence of an audience. Koza (1994) concluded that the pictures of women in musical activities in the middle school 1988 music textbook images were unequal. Also, she claimed that these images reinforced traditional sex stereotypes found in the earliest publications, such as *Godey's Lady's Book* and the first ten volumes of the *Music Supervisors' Journal*. Koza (1992) suggested that music teachers' responsibilities are to examine materials carefully, including illustrations and texts, to eliminate gender injustices rather than present them without any questions or comments about the representation of women in musicianship and their musical achievements.

Digón Regueiro (2000) conducted an analysis similar to Koza's 1994 study of middle school music textbooks to examine if women musicians had equal representation in illustrations, text, and song lyrics of a music textbook used in Spanish schools. Regueiro (2000) found that male musicians' illustrations ($N = 103$) were more than female musicians ($N = 23$). These female musicians were displayed mainly to sing and play string and woodwind instruments. There were also no photographs of women playing electronic instruments. Male musicians were illustrated as composers, conductors, and playing brass instruments. Women ($N = 5$) were less illustrated as soloists than men ($N = 22$) in all performing pictures. Only five female musicians were mentioned by name in textbooks, while 84 male counterparts' names were mentioned.

The women composers represented were not well-known in contrast to the men composers mentioned. Women were mainly described as a singer. Results supported Koza's 1994 findings, which showed that women were underrepresented in illustrations and written texts in performing, composing, and singing.

McWilliams (2003) studied 24 issues of *The Instrumentalist,* published from August 2000 to July 2002. Her research applied a mixed methodology to examine the wind band's portrayal, including band conductors, wind players, and percussionists. The study aimed to explore how gender-equity issues manifested in *The Instrumentalist.* McWilliams's findings were consistent with Koza's (1994) and Digón Regueiro's (2000) findings. The text and images focused on the male population. She reported that male authors wrote 82% of articles (*N* = 222)*,* while females wrote only 18%. Wind band conducting images in both articles and advertisements depicted men as conductors 91% and 93% of the time, respectively. Women appeared in advertisements for the flute more than any other instrument. Also, 100% of trumpet advertisements featured male performers in the images. Only 12% of all professional musicians pictured in the publication were female. According to the quantitative and qualitative data, McWilliams (2003) concluded that females experienced underrepresentation and exclusion in *The Instrumentalist* in various contexts, such as the illustration of different teaching levels, teaching areas, music profession presenting, and even authorship in this magazine.

Kruse, Giebelhausen, Shouldice, and Ramsey (2015) investigated the visual representation of adult men and women in the *Music Educators Journal* (*MEJ*) between 1962 and 2011. The researchers analyzed all *MEJ* images*,* including magazine covers, images accompanying articles, and images appearing in advertisements. Data included

every photograph (N = 7,288) of music conductors, teachers/presenters, and named persons appearing in the photograph's caption or surrounding text. Results showed that 71.38% of the pictures were male, 28.09% were female, and 0.53% were indeterminate. Females accounted for 56% in teaching/presenting, 21% in conducting, and 20% in named persons. The researchers believed that sex equity issues remained in *MEJ* across the five decades.

Gender and Musical Instrument Sex Stereotypes

Scholars interested in gender research have studied gender stereotypes of musical instruments on instrument choice (Abeles, 2009; Abeles & Porter, 1978; Delzell & Leppla, 1992; Fortney et al., 1993; Griswold & Chroback, 1981; Hallam et al., 2008; Payne, 2009). Methods for assessing stereotypes typically required participants to place an instrument along a feminine-masculine continuum based on its perceived association with gender. In these studies, the clarinet, flute, oboe, and violin were perceived as distinctly feminine, while drums, trombone, trumpet, and tuba were considered to be distinctly masculine (Abeles, 2009; Abeles & Porter, 1978; Delzell & Leppla, 1992; Griswold & Chroback, 1981).

Abeles and Porter (1978) conducted a series of studies from 1975 to 1978 to examine the sex stereotyping of musical instruments. In their first study (1975), researchers asked adults (N = 149) to select instruments among cello, clarinet, drum, flute, saxophone, trombone, trumpet, and violin in order of first, second, and third choice for their hypothetical daughter or son to learn. This investigation was done to determine whether an association of gender with musical instruments exists in the general

population. Results showed that participants chose clarinet, flute, and violin for their daughters and drum, trombone, and trumpet for their sons. The cello and saxophone received a neutral classification because they did not produce statistically significant results between feminine and masculine options. Abeles and Porters (1978) concluded that parents would choose for their children specific instruments depending on their child's sex. In their second study (1975), the researchers asked music majors ($N = 32$) and non-music majors ($N = 26$) to rank the same eight instruments: cello, clarinet, drum, flute, saxophone, trombone, trumpet, violin on a feminine-masculine continuum. After making paired comparisons, Abeles and Porter (1978) reported that flute, violin, and clarinet were the most feminine instruments in the continuum, while drums, trombone, and trumpet were rated the most masculine by both music major and non-music major groups. The cello and saxophone were still scored in the middle, meaning no specific gender assignment. The results confirmed the classification of instrument selection in the first study. The third study (1975) investigated musical instrument preferences among elementary children ($N = 598$). Researchers prepared aural and visual materials for participants of eight instruments, including cello, clarinet, drum, flute, saxophone, trombone, trumpet, and violin. The pictures depicted a child playing an instrument. Participants were asked to choose the instrument they would most like to play. Researchers compared the third study results with the results from the second study (1975) to the collected mean scores of instrument preference by sex and grade. The results showed that boys' selections were stable with the masculine of the continuum from kindergarten to Grade 6. Although girls' instrumental preferences were feminine

instruments, there were significant differences with boys' preferences in the third and fourth grades. Furthermore, girls preferred a wider choice of instruments than boys.

The fourth study (1975) explored a possible reason for the sex-stereotyping behavior of instrument preference in the previous three studies. Participants ($N = 47$) were ages 3 to 5 at a daycare center in Bloomington, Indiana. Researchers divided the children into three groups. Group 1 (RCA Group) was presented with the RCA record *Instruments of the Orchestra* (1962) and eight pictures of instruments: cello, clarinet, drum, flute, saxophone, trombone, trumpet, and violin. Group 2 (Control Group) was introduced to the same eight instruments and the same aural and visual materials in the third study (1975), but participants did not see anyone playing the instruments. Group 3 (Bowmar Group) saw the instrument pictures and heard recorded excerpts from the Bowmar *Meet the Instruments* (1961) with different children playing several instruments. The researchers reported a significant difference between the experimental and control groups by sex. Girls were mostly unaffected by how instruments were presented, while boys reacted differently to different instruments' presentation forms. Abeles and Porter (1978) concluded that musical instrument gender associations exist in all age-groups, and sex-stereotyping of musical instruments might limit future music vocational opportunities for both boys and girls. However, the sex-stereotyping could be diminished if instrumental music teachers in and outside of school music classes could be careful regarding the initial introduction of instruments and consistent reinforcement of sex-stereotyping.

Several researchers conducted studies similar to those of Abeles and Porter (1978) to examine gender association and musical instrument preference (Abeles, 2009; Delzell

& Leppla, 1992; Griswold & Chroback, 1981). Griswold and Chroback (1981) conducted a study that expanded the scope of Abeles and Porter (1978) to add more instruments, including cymbals, French horn, glockenspiel, guitar, oboe, piano, piccolo, string bass, tuba, and the category "choral conductor" and "instrumental conductor" on the feminine-masculine continuum. They asked undergraduate music majors and nonmajors to rate the instruments with a 10-point Likert-type scale using feminine and masculine as anchor words. The results confirmed part of Abeles and Porter's results but disagreed with others. Abeles and Porter (1978) found that the flute and violin were the most feminine, while the bass drum and trombone were rated most masculine. Results from Griswold and Chroback (1981) identified the harp as the most feminine item, followed by the flute, piccolo, glockenspiel, choral conductor, cello, violin, clarinet, piano, French horn, and oboe. Tuba was rated as the most masculine item, followed by string bass, trumpet, bass drum, saxophone, instrumental conductor, cymbal, and guitar; however, the cello and saxophone, which were previously categorized as gender-neutral (Abeles & Porter, 1978), were categorized as feminine and masculine respectively in the research by Griswold and Chroback (1981).

Delzell and Leppla (1992) conducted two studies to compare the findings of Abeles and Porter. In the first study, Delzell and Leppla (1992) studied changes in gender associations of musical instruments among music majors ($N = 68$) and non-music majors ($N = 154$). Participants completed a survey to identify 28 pairs of instruments in a two-by-two comparison. They selected the instrument they believed was more masculine between each pair of the instrument (cello & clarinet, cello & drum, cello & flute, cello & saxophone, cello & trombone, cello & trumpet, cello & violin, clarinet & drum, clarinet

27

& flute, clarinet & saxophone, clarinet & trombone, clarinet & trumpet, clarinet & violin, drum & flute, drum & saxophone, drum & trombone, drum & trumpet, drum & violin, flute & saxophone, flute & trombone, flute & trumpet, flute & violin, saxophone & trombone, saxophone & trumpet, saxophone & violin, trombone & trumpet, trombone & violin, trumpet & violin). They reported that all instruments' order remained the same on the feminine-masculine scale except for the clarinet, which moved from the third most feminine instrument (Abeles & Porter, 1978) to the second.

The second study by Delzell and Leppla (1992) invited fourth-grade students ($N = 526$; female $n = 254$ and male $n = 272$) to respond to a survey with four parts, including an instrument familiarity quiz, demographics, musical background, and which of eight instruments (cello, clarinet, drum, flute, saxophone, trombone, trumpet, violin) would be their first, second, and last choice to play. The purpose of the second study was to investigate current preferences for the selection of instruments, the reasons for preferring or not preferring instruments, and comparisons between students' perceptions of their peers' preferences to the actual choices of their peers. The results showed that the percentage of students correctly identifying each instrument included drums 96.2%, violin 93.2%, flute 79.7%, saxophone 78.7%, trumpet 61.6%, trombone 51.9%, clarinet 50.6%, and cello 20.0%. For boys and girls combined, 37.1% chose drums as their first choice, 26.5% chose the saxophone, and 17.3% chose the flute. The majority of boys preferred playing the drums (51.7%) and saxophone (31.5%). Girls preferred instrument choices were broader, including flute (30.4%), drums (21.7%), saxophone (21.3%), and clarinet (15.0%). Delzell and Leppla (1992) indicated that this finding was similar to the research by Abeles and Porter (1978). Also, participants reported that the top three

reasons for choosing the specific instruments were "It is awesome" or "I like it" (35.7%), "I like the sound of the instrument" (35.5%), and "It would be easy or fun to play" (24.2%). The last choice instruments were cello (35.0%), violin (25.6%), saxophone (8.9%), flute (8.3%), drums (8.0%), trombone (6.6%), trumpet (4.1%), and clarinet (3.5%). The most frequent reason for the last choice for playing was "The instrument is too difficult to play" or "not fun to play" (39.3%). Lastly, Delzell and Leppla (1992) analyzed the students' perceptions of peers' preferences by sex. They found that girls were more accurate in estimating boys' preferences ($r = .74$) than their counterparts in estimating girls' preferences ($r = .21$). They concluded that although gender associations have lessened since the Abeles and Porter study (1978), instrument positions on the feminine-masculine continuum have remained relatively stable. It is also worth noting that the preference continuum seems to be dominated by drums for both boys and girls, followed by woodwinds and brass. String instruments were the least preferred by a large percentage of fourth-grade students. They commented that the strings were too hard to play.

Fortney, Boyle, and DeCarbo (1993) examined middle school band students' preferences for instrument choice ($N = 990$). Participants completed a self-report survey in which they were asked to indicate what instrument they currently play in the band, rate each of the reasons that influenced their choice of instrument, and identify which instrument they would most and least like to play. Reasons for their choices included people's influence (parents, friends, music teachers, other teachers), instrumental timbre, media, cost, size, and availability. A large majority of girls currently played woodwinds such as flute (91%), oboe (83%), and clarinet (77%), whereas most brass players,

including tuba (96%), trombone (90%), baritone (89%), trumpet (88%), and percussionists (82%) were boys. In response to the question, "If you could choose any instrument you wanted to play given a choice, which would you choose?" 35% of respondents reported that they would continue to choose the instrument they currently play. Also, their top five favorite instruments were saxophone (16%), percussion (13%), trumpet (10%), flute (5%), and clarinet (5%), besides their currently played instrument. Female respondents preferred to choose flute, clarinet, and strings, while males played brass instruments, percussion, and guitar. The saxophone was the most-preferred instrument by both females and males again. Researchers indicated that their findings supported gender associations with certain instruments, as previous researchers reported (Abeles & Porter, 1978; Delzell & Leppla, 1992). The sound quality affects the choice of instruments for both females and males (Delzell & Leppla, 1992; Gordon, 1991; O'Neill & Boulton, 1996).

In 2009, Abeles partially replicated his previous investigation to examine whether musical instruments' sex stereotypes had changed among college students ($N = 180$) and middle school children ($N = 2001$) over 30 years. In the first study (fall 2006), Abeles collected data from 180 students at nine colleges and universities. Respondents from each college or university included ten music majors and ten non-music majors. Researchers asked these college students to complete the same Musical Instruments Paired-Comparison Survey Form (MIPCSF), which consisted of 28 pairs of eight musical instruments: cello, clarinet, drums, flute, saxophone, trombone, trumpet, and violin. The results were compared with the Abeles and Porter (1978) and Delzell and Leppla (1992) studies. Abeles found that the rank ordering of the instruments on the feminine-masculine

continuum was almost the same as Abeles and Porter (1978) and Delzell and Leppla (1992), except for the clarinet and violin which were switched in order in the study by Delzell and Leppla (1992). Further, the range of normalized scale scores confirmed a similar reduction of gender association as that reported by Delzell and Leppla.

In the second study (2006), researchers collected data from 2,001 instrumentalists (females, $n = 1,148$, 57.3%; males, $n = 853$, 42.7%) in nine middle school bands and orchestras in the same areas of the United States used in the first study. These participants also completed the Musical Instruments Paired-Comparison Survey Form (MIPCSF). Abeles (2009) reported that the most popular instruments for girls were violin (30.6%), flute (23.4%), clarinet (20.9%), and cello (10.0%). The boys' preferred instruments in order were trumpet (28.1%), trombone (16.6%), drums (14.0%), and saxophone (14.0%). He compared the results with the previous research, including studies by Abeles and Porter (1978) and Fortney, Boyle, and DeCarbo (1993). The data showed that boys were slightly more likely to play a stereotypical female instrument than girls were to play a stereotypical male instrument. Additionally, the results of middle school students' instrument selection by sex were very similar in previous studies by Abeles and Porter (1978) and Fortney, Boyle, and DeCarbo (1993). In conclusion, there had been no measurable change in sex stereotyping of instrument selections by children across three decades.

Women's Participation in Jazz Ensembles

Numerous studies link sex stereotypes to specific musical instruments (Abeles, 2009; Abeles & Porter, 1978; Delzell & Leppla, 1992; Fortney et al., 1993; Griswold &

Chroback, 1981; Hallam et al., 2008; Payne, 2009). The instrument that students play can affect opportunities and often limits participation in ensembles, with various consequences for music students and those who will become future music educators (Abeles & Porter, 1978; Gould, 2001; Griswold & Chroback, 1981; McKeage, 2004). For example, women are less likely to play instruments in jazz ensembles (Barber, 1998; McKeage, 2004; Van Vleet, 2021).

McKeage (2002, 2004) explored the absence of women in jazz and why women are less likely to participate in jazz ensembles. In 2002, McKeage launched a qualitative study to investigate two jazz ensemble directors and three female undergraduate instrumentalists who had jazz performance experience at the high school level and had withdrawn from college jazz bands after their freshman year. McKeage (2002) used various sources, such as a semi-structured individual interview, focus group discussion, and observation, to collect data, including participants' background information, jazz experience, career goals, and role models. Data analysis revealed four reasons that led to female musicians' conscious decision to quit the jazz program: (1) Two jazz ensemble directors indicated that fewer female role models in the professional jazz ranks had resulted in few female musicians venturing into jazz; (2) the Music Department required students to follow a traditional approach to playing their instruments; music students stated that they were stressed when having to practice both classical and jazz music; (3) these female musicians shared their negative jazz ensemble experience in the focus group interview, and believed that women were not welcomed into the jazz world; (4) based on the above three reasons, these female instrumentalists in this study indicated that they

chose to avoid jazz because they believed that they would have a tough time succeeding in the jazz field.

McKeage (2004) further conducted quantitative research using undergraduate music students to examine a relationship between gender and participation in high school and college jazz ensembles. These participants ($N = 628$; female, $n = 352$, 56%; male, $n = 276$, 44%), who were from 15 college music programs, consisted of 67% music majors and 43% music education majors. The researcher designed the Instrumental Jazz Participation Survey (IJPS) based on her previous qualitative study results (McKeage, 2002). The survey (IJPS) had three sections. The author collected demographic information in the first section, college band students' participation, and how long they participated in jazz ensembles. The second section gathered student attitudes and gender differences on their choices to continue or stop participating in jazz ensembles. The third section investigated why the students played in jazz bands in either high school or college but eventually dropped out.

Data analysis showed that 52% of the women and 80% of the men reported playing jazz in high school, and 14% of the women and 50% of the men played jazz in college. Ten percent of the women and 35% of the men were still playing college instrumental jazz at the time of the survey. Thirty-seven percent of all participants reported that their private teacher encouraged them to play jazz. Twenty-eight percent of women reported that their primary instrument was accepted in jazz bands, while 72% of men reported that their primary instrument was accepted in jazz ensembles.

McKeage (2002) previously identified three variables (lack of connection between jazz and career aspirations, institutional obstacles, and the jazz environment)

impacting students who join or quit jazz ensembles. The correlation coefficients for jazz participation across gender revealed that the variables associated with female and male participation in jazz bands were similar (McKeage, 2004). The strongest correlation was between jazz participation status and "schedule time for jazz" for both females (*phi/r* = .65, *p* < .00) and males (*phi/r* = .69, *p* < .00). There was no correlation between female and male participation status and majors or years of schooling. However, the correlation between females' jazz participation status and "influences/role models" was weak (phi/r = .12, *p* < .11), which conflicted with the author's previous findings.

McKeage (2004) also reported that gender and jazz participation status influenced attitudes toward jazz. Four groups, including "women who quit playing," "women still playing," "men who quit playing," and "men still playing," all agreed that they could learn to play both classical and jazz with instruction and support. However, the "women still playing" group showed less-positive attitudes about improvisation than the "men who quit playing" group. Lastly, McKeage (2004) reported the reasons for quitting jazz ensembles. Both female and male respondents indicated that the primary reason for dropping out of jazz bands was "I don't have time for jazz" (female: *M* = 3.72, *SD* = 1.31; male: *M* = 3.67, *SD* = 1.34). The least important reason for both females *M* = 2.04, *SD* = 1.22) and males (*M* = 1.82, *SD* = 1.12) was "I don't enjoy jazz anymore." Also, women respondents shared additional reasons to discontinue jazz, including "their major instrument is not a traditional jazz instrument," "feeling uncomfortable in the jazz ensemble," and "need to focus on classical playing."

Female jazz musicians must overcome many obstacles when they pursue jazz as a career. Discrimination against women in jazz dates back 100 years and is still an issue

today (Van Vleet, 2021). Van Vleet (2021) examined the underrepresentation of female jazz musicians by analyzing scholarly books and articles and interviewing female jazz musicians. These female jazz musicians included jazz professors at colleges and universities, jazz singers, and jazz instrumentalists such as bassists, drummers, pianists, trumpeters, trombonists, and violinists. According to Van Vleet (2021), women are generally discouraged from performing jazz music for three basic reasons. First, the perception of gender-stereotyping of instruments hindered female musicians chose jazz instruments at a young age. The common jazz instruments are "masculine" instruments such as drum, saxophone, trombone trumpet, and tuba, which are discouraged from girls playing these instruments. Second, in contrast to male musicians, female musicians are frequently criticized for their appearance and attractiveness rather than merely their musicianship. Van Vleet (2021) believed that "the consideration given to women's appearance when performing was only one factor that served to keep many women out of jazz" (p. 218). Third, the lack of female role models in jazz for female jazz musicians, especially after middle school, may lead women to quit playing jazz in high school and college. Van Vleet (2021) indicated that most jazz educators were White males, which was the possible reason for the female musicians discontinuing their careers after middle school. Van Vleet's interviewees also reported their experiences of discrimination, sexism, and sexual assault in male-dominated jazz fields while pursuing jazz careers.

Running a jazz band program is often a requirement for high school band directors (Delzell, 1993; McKeage, 2004). When female music education majors choose not to participate in the jazz ensemble and curriculum, they lose the opportunity to be

fully prepared for high school and college positions (Delzell, 1994; Gould, 1992;

McKeage, 2002, 2004).

Different Types of Discrimination Experienced by Women Teaching Wind Band

Although female wind band conductors have had an impact on American music

education, discrimination against female high school or college band directors exists in

all aspects of the hiring process, professional conferences, music events, and schools.

Common types of discrimination include sexism (Bovin, 2020; Coen-Mishlan, 2015;

Feather, 1980; Fischer-Croneis, 2016; Greaves-Spurgeon, 1998; Jones, 2010; Mullan,

2014; Sears, 2010; Wilson, 2014), sex stereotyping (Coen-Mishlan, 2015; Feather, 1980;

Fischer-Croneis, 2016; Minette, 2011; Mullan, 2014; Sears, 2010, 2014), and job

isolation from the "Good Old Boys Club" (Fischer-Croneis, 2016; Fiske, 1997; Grant,

2000; Greaves-Spurgeon, 1998; Sears, 2010).

Sexism. According to the Merriam-Webster English Dictionary, "sexism" is

defined as prejudice or discrimination based on sex, especially discrimination against

women. Sexism is the most common type of discrimination, and previous studies in

music education discuss it.

Carol Ann Feather (1980), one of the earliest researchers on this topic, explored

gender and college band teaching. She sent a survey questionnaire to 180 men who were

selected randomly from the following organizations: (1) the 1979–1980 membership list

for the College Band Directors National Association and (2) The College Music Society

(Feather, 1980). In addition, Feather sent the survey to the entire 53 women who made up

the 1979–1980 membership list of the Women Band Directors National Association. In

total, 53 females (100%) and 154 males (85.08%) responded to the survey investigation. Of all the respondents, only 21 females (39.62%) were college band directors, while 141 males (91.56%) were college band directors. Feather found that 42.86% of the female band directors held doctorates, while only 26.28% of the male band directors had the same level of education (Feather, 1980).

Additionally, Feather found that even though more female college directors had higher degrees and heavier workloads than men, the average salary on a nine-month basis for female band directors was only $14,840, which was lower than the average salary of $18,126 for male band directors. Several studies have reflected that women prefer to improve their competitiveness in the band profession by pursuing higher education or increasing their workload (Coen-Mishlan, 2015; Fiske, 1997; Greaves-Spurgeon, 1998; Minette, 2011; Mullan, 2014; Sears, 2010). However, few scholars have revisited the issue of comparing equal pay for female and male band directors in later studies. This is an area that needs to be addressed in future research.

In 1998, Greaves-Spurgeon conducted a similar quantitative study that used a questionnaire that was a modified version of Feather (1980). She investigated female high school band directors in Georgia. The researcher mailed the survey to all full-time or part-time high school women band directors at public or private schools in the state. In total, 37 female band directors were identified from the 1996–1997 membership list of the Women Band Directors National Association, the Georgia Music Educators Association, and the Georgia High School Association (Greaves-Spurgeon, 1998). The survey response was 31 of the 37 women, including 28 active music teachers and three retirees (Greaves-Spurgeon, 1998). Greaves-Spurgeon (1998) reported that the most

common experience related to sexism included "not being taken seriously as a high school band director" and "concerns from administrators as to whether a woman could handle the job" (p. 61). In addition, most participants indicated they preferred to pursue higher education because they wanted to be more competitive in their current high school positions (Greaves-Spurgeon, 1998). The conclusion echoed Feather's 1980 research finding that a higher percentage of female band directors held doctorates than their male counterparts.

After the year 2000, scholars increasingly turned to qualitative methodological studies. The researchers often focused on the personal narratives of women band directors. Colleen Anne Sears is one of these scholars who studied female high school band directors. In 2010, she launched a qualitative study to interview eleven female high school band directors to investigate female conductors' experiences of gender issues in secondary instrumental music education (Sears, 2010). Her study aimed to investigate their experiences in the high school wind band and the impact of those experiences on their band director identity. Most interviewees shared that they believed they were experiencing sexism at work. For example, one participant, Kelly, mentioned that she believed she had lost some job opportunities because of her gender. Kelly shared her experience when looking for a wind band job at the high school level. As the only female who made it to the second round of interviews, she thought she had enough band teaching, marching band, and conducting experience to do this job; however, the principal ultimately hired a 40-year-old male without any marching band experience (Sears, 2010). Sex discrimination seems to be very common among school administrators. Another participant, Samantha, recalled that she had an administrator who

wanted to reschedule her after-school rehearsals because he needed the auditorium for faculty meetings. She suggested an alternative meeting date and time to the principal and heard him tell her male peer, "Watch out for these strong women" (Sears, 2010, p. 137). This was an unfortunate comment because he interpreted her suggestion for an alternative solution as her being aggressive rather than collaborative in finding a mutually-beneficial solution. Similar experiences abounded among Sears's interviewees.

Other research also revealed the sex discrimination experienced by female band directors. In 2015, Coen-Mishlan investigated three female high school band directors at different career stages, including early career, mid-career, and retirement, through case studies (Coen-Mishlan, 2015). All three participants reflected that sexism existed throughout their experiences and careers. They were disrespected and treated differently in their schools and at band contests. The youngest participant, Tegan, shared the experience of the male principal asking her to substitute-teach a physical education class. However, the principal blamed her for asking too many questions in advance about the students. Tegan indicated that she never saw the principal talking to an older woman or a younger man in this way (Coen-Mishlan, 2015). Another participant with 36 years of teaching experience shared that her most egregious "gender" incident happened in 1976 at a jazz band festival (Coen-Mishlan, 2015). At the end of the program, plaques were given to each director by a representative from a local music store. Every director was announced, and their hand was shaken except hers. The representative could not believe that a woman directed a jazz band, so her band's plaque was given to her first chair male trumpet player (Coen-Mishlan, 2015).

Recently, Bovin (2020) surveyed a sample of female high school band teachers across the United States. The survey had 1,026 participants, and 737 participants chose to finish the questionnaire, including 733 females, one transgender female, and three non-males (Bovin, 2020). From the 1,026 participants, she collected 605 responses for the items regarding sexism, 604 responses for the items regarding ageism, 600 responses for the items regarding harassment, and 590 responses for the items regarding other forms of discrimination. These totals were lower than the 733 because some respondents refused to answer these questions (Bovin, 2020). Participants reported that they had or might have experienced sexism ($n = 472$, 77.7%), ageism ($n = 414$, 68.2%), harassment ($n = 365$, 57.3%), and other forms of discrimination ($n = 292$, 48.3%) (Bovin, 2020, p. 126). Bovin (2020) mainly examined female high school band directors' interactions with school/district administrators, colleagues, students, and parents. The results showed that the sample of female high school band directors had negative experiences and interactions with male athletic directors and coaches, male school administrators, and male district administrators (Bovin, 2020). These findings are consistent with previous research suggesting that female high school band directors suffer sex discrimination in their careers, primarily from male administrators. Bovin (2020) believed that as high school band directors, women feel uncomfortable and believe that they experience sexism at work in specific scenarios. Sometimes, inconsiderate language and behavior occur because people have strong sex stereotypes and are unaware of them. For example, school administrators believe males are suitable for a high school band directing job. On the contrary, they think female teachers need more supervision, as these administrators

believe women would have problems with discipline and classroom management (Bovin, 2020).

Sex Stereotyping. Sex stereotyping was reported by women who shared the difficulties and concerns they faced in male-dominated professions. Social role theory supports that different expectations of actual and ideal behaviors for men and women combine to cultivate shared beliefs (Eagly & Karau, 2002; Eagly et al., 2000; Wood & Eagly, 2012). In turn, these shared beliefs form perceptions of gender roles and stereotypes for men and women (Koenig & Eagly, 2014). Regardless of whether women behave like women or men in male roles or occupations, women are perceived negatively when they are perceived as acting outside of their congruent gender roles (Eagly & Karau, 2002). Some female high school band directors believe that sex stereotypes lead to bias, unfair gendered treatment, professional isolation, and sexism in the band field (Sears, 2010).

Colleen Anne Sears reported that several participants in her study shared that administrators in charge of the hiring questioned whether women could handle a large ensemble (Sears, 2010). This questioning may occur because stereotypes associated with female gender roles include nurturing, warmth, caring, and compassion, whereas stereotypes associated with male gender roles include being confident, aggressive, assertive, dominant, and powerful (Eagly & Karau, 2002). Leadership roles also hold a masculine association, and the result is that men are perceived as more ready to or easily able to take on leadership roles, whereas women receive criticism for taking on those roles that conflict with the stereotypes assigned to women (Eagly & Karau, 2002). The female participants in Sears's research had to conceal their femininity by avoiding

dresses, "girlie" clothes, and hairstyles; they believed that dressing in a more masculine style was a way to be respected by students, colleagues, and administrators (Sears, 2010, 2014).

In 2011, Minette surveyed female instrumental secondary school music teachers, including middle school and high school educators in Iowa, Minnesota, and Wisconsin. Minette (2011) collected data through a survey emailed to female band and orchestra directors ($N = 397$) and a focus-group interview of eight participants who taught or had taught instrumental music at the secondary level (Grades 6–12). Her participants identified the high school as where sex stereotyping occurred most frequently. People believed that women could not conduct a band because they were women. Minette (2011) further noted the persistent stereotype that women should be "nurturing," therefore they cannot be physically and emotionally equipped to teach high school band with the same "strengths" as men, including conducting large ensembles, moving big instruments, and handling challenges posed by the school administration, students, and parents (p. 76).

Fischer-Croneis (2016) interviewed nine preservice ($n = 3$) and in-service ($n = 6$) high school women band directors' regarding their career intentions and experiences. Participants shared their encounters with stereotyping treatment in their work experience ranging from "cases of mistaken identity," "to social implications of being a confident woman," and "to the ways some men treat female band directors" (Fischer-Croneis, 2016, p. 191). Participants shared that they experienced discrimination during their job interviews. For example, an in-service teacher mentioned that she was interviewing for a marching band job. One of the principals asked her if she would be scared in front of approximately 100 students in the high school band. She was very upset about the

question because she believed the principal would never ask male candidates the same question (Fischer-Croneis, 2016, p. 187). Additionally, female band directors observed a double standard when being evaluated as band directors (Fischer-Croneis, 2016). Fischer-Croneis's participants Kate and Beth shared that they were perceived negatively when they were too confident in the ensemble class. However, they admitted that masculine traits, such as "assertive, confident, aggressive, and alpha," were considered important personality traits in the band director's role (Fischer-Croneis, 2016, p. 188). These opinions confirmed Sears's 2010 and 2014 research findings that administrators perceived that effective high school band directors should have some important personal qualities, including "confidence, toughness, thick skin, assertiveness, and aggression" (Sears, 2010, p. 207; Sears, 2014, p. 9).

According to the existing studies, female band directors experience long-term restrictions and psychological injuries in the workplace due to sex stereotyping. However, they often have to identify with such sex stereotypes and behave in so-called masculine ways. Otherwise, they fear that students, colleagues, and administrators will doubt their capability if they cannot be "strong" enough in band rehearsals.

Job Isolation from the "Good Old Boys Club." In previous research, female band directors reflecting on their positions in secondary and higher education communicated their loneliness and isolation in multiple professional settings such as conferences, competitive events, and schools (Grant, 2000; Fischer-Croneis, 2016; Minette, 2011; Mullan, 2014; Sears, 2010). These women band directors believe that a "Good Old Boys Club" exists in the field of band conducting, leading to their exclusion

43

from formal academic discussions, informal exchanges, school social interactions, and outside-of-school social interactions.

In Sears's 2010 study, participants reflected that they felt excluded by their male colleagues. Several participants thought that the "Good Old Boys Club" made it difficult to earn respect within the profession (Sears, 2010). Participants named Michelle, Kelly, and Beth believed that the "Good Old Boys Club" hindered their ability to network with other conductors. Michelle mentioned that male band directors in their mid-fifties or nearing sixty have connections, commenting, "they are part of the secret society" (Sears, 2010, p. 114). Another participant, Kelly, observed a similar phenomenon when she attended local band meetings. As one of only three female band directors, Kelly was uncomfortable at all high school band directors' conferences because she knew that she was "not getting the same amount of respect" (Sears, 2010, p. 100). Beth also reflected that she was once a nobody in the profession until her high school band won the marching band championship for her high school's classification (Sears, 2010, p. 164). It was interesting for Beth to consider that the men who had been disrespectful to her before her band's win were now more accepting of her and showing her the respect she always deserved. In a field with competition, one apparently has to win to earn respect, like in the field of sports. Is band directing aligned with the education field or a sporting event? Should it be both/and or just one?

Similarly, Mullan (2014) conducted a qualitative study to investigate the factors contributing to the success of 16 female high school band directors in California, the challenges they faced on the job, the influence of role models and mentors, and their leadership styles (Mullan, 2014). These women high school band directors were

interviewed in a semi-structured format (Mullan, 2014). The participants identified

numerous challenges of being a female band director, including not being respected by

students and other adults, not receiving recognition to the extent that men do in the field,

and being negatively perceived because they were female band directors (Mullan, 2014).

Almost every participant in the study believed that the "Good Old Boys Club" network

did exist when they tried to build connections outside of the school because they were

unwelcome in the largely male environment at conferences (Mullan, 2014, p. 152).

Additionally, Mullan reported that although these women band directors acknowledged

the great benefits of joining such a club, the "Good Old Boys Club" was difficult for

female band directors to break into the male band directors' community (Mullan, 2014).

Mullan's 2014 study again illustrates the existence of that tight-knit community of male

band directors known as the "Good Old Boys Club." The "Good Old Boys Club"

observation was aligned with the findings by Fischer-Croneis (2016), Grant (2000), and

Mullan (2014), who found that the "Good Old Boys Club" network of male directors has

long imposed a hostile working environment on female directors.

However, some recent studies showed that the "Good Old Boys Club" seems to

be "dying out" (Fischer-Croneis, 2016; Minette, 2011; Wilson, 2014). For example, the

participants in Fischer-Croneis's (2016) research reflected that "Good Old Boys Club"

was declining in numbers because those traditional male band directors were retiring,

although their participants admitted that they still observed a "Good Old Boys Club" at

their school districts and state conferences (Fischer-Croneis, 2016). Another study by

Wilson (2014) analyzed and reported a similar phenomenon. In her study, some

interviewees believed that the "Good Old Boys Club" was getting smaller and female

band directors' professional status was rising. Minette (2011) reported that the "Good Old Boys' Club" phenomenon is improving as many older educators retire. In Bovin's (2020) research, 48.9% of the respondents believed job isolation existed, while 42.8% held the opposite view. However, individual differences emerged on the isolation issue, which may be related to age, years of teaching experience, and school location. For example, in the Fischer-Croneis (2016) study, only one participant, Susan, did not believe that the club was declining. Moreover, she was the only participant from an urban public school (Fischer-Croneis, 2016). Further studies need to examine the age, years of teaching, or school location in job isolation.

Challenges of Women in Wind Band Teaching

Scholars noted that the persistent challenges of female band directors were long work hours and conflicts with family responsibilities (Fitzpatrick, 2013; Greaves-Spurgeon, 1998; Jones, 2010; Mullan, 2014; Sears, 2010; Terban, 2011), as well as lack of appropriate mentors and role models for these female band directors (Gould, 1996, 2001; Grant, 2000; Johnson, 2020; Jones, 2010: Minette, 2011).

Imbalance of Work and Family. The difficulties that female high school band teachers face are not limited to the different types of discrimination in the workplace. Women also are challenged by the decisions to balance career and family. Traditional gender expectations for female roles mainly include mother and child caregiver. A recent study by Bovin (2020) investigated female high school band directors ($N = 281$) who already had children and female high school band directors ($N = 414$) without children. The results showed that 69.7% of respondents with children and 68.7% of respondents

without children believed "being pregnant and/or having children" would interfere with their job. In a previous similar study by Greaves-Spurgeon (1998), her participants ($N =$ 23) responded that the top three personal goals of women high school band directors were to have children, get married, and have more family time. The responsibility of motherhood is an important part of women band teachers' lives that might not be avoided and inevitably affect their music profession. Therefore, some researchers examined how female high school band directors effectively balance their work and life as working mothers (Fiske, 1997; Fitzpatrick, 2013; Jackson, 1996; Terban, 2011).

In a qualitative study in 2011, Terban interviewed 25 current or former women high school band directors who were either married, divorced, or caregivers of a child during the period of their employment. These women participated in a study investigating strategies female high school band directors used to meet the challenge of balancing career and family (Terban, 2011). The participants included 15 women from Michigan and ten women from Ohio. They reported that the extensive time demands of a high school music band program were most difficult for female high school band directors (Terban, 2011). Some participants who were mothers recalled feeling anxious and guilty when they had to fulfill work responsibilities and lost opportunities to care for their children (Terban, 2011). In addition, participants reflected that they spent less time with their spouses and children, which resulted in some conflict between them and their spouses (Terban, 2011). A healthy lifestyle is another concern for female high school band directors. Two participants, Ellen and Elizabeth, mentioned that they did not have time due to their busy schedules and family care, which led to obesity (Terban, 2011, p. 27). Last, participants thought that their work schedule affected nursing infant children.

47

For example, Ellen described using a half-hour break every day to go to the women's

bathroom behind the school to obtain milk for her daughter with a breast pump (Terban,

2011, p. 29). Elizabeth, who had recently had a child, communicated her preference for

feeding her child, "If you are going to nurse, you have to pump." Elizabeth had to figure

out when and where in high school she could pump breast milk and preserve it for her

child to consume later (Terban, 2011, p. 28–29). In response to these difficulties in

balancing work and family, Terban's study participants shared some of their strategies.

First, they indicated that spouses must contribute to the support and manage career and

family responsibilities (Terban, 2011), which corresponded with previous research by

Fiske (1997) and Jackson (1996). Second, these participants suggested that a home

daycare provider, such as their parents, friends, or a babysitter is necessary when teaching

and attending after-school and weekend activities. Third, some participants believed that

women band directors should set priorities between family and career. They suggested

that if a teacher wants to care for children, a better choice might be to look for a job in a

middle school. In addition, these interviewees suggested meticulously scheduling

everything in advance, such as after-school or weekend events, transportation, taking care

of children, and cooperation with their spouses. Fourth, many participants thought living

near schools, and family members would save time accommodating their schedules and

allow for more support and childcare opportunities.

Fitzpatrick (2013) conducted a case study to examine a successful female high

school band director's experiences as a working mother. The researcher collected data

through extended participant online journals, three in-person interviews, and

observational field notes to portray this working mother and how she found a balance

between work and family (Fitzpatrick, 2013). The participant for this case study, Sarah, was a part-time employee responsible for an instrumental music program, including marching band, concert band, and orchestra at the high school (Fitzpatrick, 2013). At the same time, Sarah and her husband had three children between the ages of 2 and 6 (Fitzpatrick, 2013). Sarah was similar to Terban's (2011) interviewees in that she worked long hours, especially after-school and weekend rehearsals, which caused time conflicts with her family care. Fitzpatrick identified four factors that her participant Sarah used to balance family and work life: personal qualities, a purposeful structure of work demands, a supportive partner, and a passion for work and family (Fitzpatrick, 2013). Sarah also confirmed that she and her husband operated like a team that supported her in finding balance as a working mother (Fitzpatrick, 2013). The researcher, Fitzpatrick (2013), concluded that Sarah's most important traits to becoming a successful high school band director were her personal qualities, such as effective time management and multitasking, which helped her maintain efficient organization and establish priorities for work and home life. Fitzpatrick suggested that women who can balance work and personal life as high school directors have support at home, organizational skills, and a strong passion for work and life. Finally, Fitzpatrick (2013) noted that Sarah's working environment, such as a flexible schedule as a part-time employee and a supportive, hands-off administration, also allowed her to balance family and work life.

Inadequate Mentors and Role Models of Women Band Directors. "Mentor" and "role model," as synonyms, are relevant topics for many music education scholars when discussing female band music teachers. Mentors and role models in the profession could potentially help female band teachers to pursue their careers (Fiske, 1997;

49

Gould,1996, 2001; Grant, 2000; Johnson, 2020; Jones, 2010; Minette, 2011). Johnson (2020) indicated that mentors and role models differ depending on the interactions. A mentor is a teacher or advisor who can support and guide others (Grant, 2000). A role model is an example who embodies what an individual aspires to be but does not necessarily have a personal relationship with them (Grant, 2000; Johnson, 2020).

Gould (1996) investigated gender-specific role models for women college band directors. She collected data from women through a mailed survey, individual telephone interviews, and a small-group interview. She reported that few of the study's female participants had female role models related to their careers, and even though several of the respondents said they had female role models, they did not have a personal relationship with their female role models (Gould, 1996). Therefore, Gould believed that more female role models must be provided for women preparing careers in instrumental music education and obtaining teaching positions.

In contrast, subsequent research has shown that mentors and role models considered by female band directors or female instrumental music education students do not necessarily depend on their gender. In 2000, Grant (2000) interviewed twelve female band directors at four different career stages, including undergraduates, graduates, four to ten years of teaching experience at the postsecondary level, and ten years or longer of teaching experience at the post-secondary level. The four groups of respondents disagreed on whether gender-specific role models were necessary or not. The younger groups agreed that successful women on the podium were important to encourage them, especially female mentors in the college who would give them support (Grant, 2000). However, the graduate students' group stated that they preferred to work with male

mentors instead of females because they had negative experiences with their female mentors (Grant, 2000). Mullan (2014) also found that her interviewees' mentors and role models were often their male band directors. These female high school band directors indicated that they did not have "positive connections" with same-sex mentors or role mentors in the profession.

In comparison, Sears (2010) believed that same-sex mentors and role models could help female high school band directors to receive more support. The experienced group in Grant's (2000) study did not prefer to seek same-sex mentors and role models because they believed the qualities of mentors and role models were more important than their sex. Grant (2000) notes that "as the years in the profession increase, the number of visible roles has increased" (p. 119), which impacted the younger conductors instead of experienced conductors. This is a possible reason the younger group preferred female role models and mentors in their profession. However, Grant (2000) did not discuss the disagreement over gender-specific mentorship in the younger group. Mullan (2014) indicated that women might have less of a sense of competition between male mentors and themselves.

Johnson (2020) continued and updated Grant's (2000) research on gender-specific role models and mentorship among collegiate female band directors. Johnson (2020) designed two separate surveys for two groups based on the findings of Grant (2000). Group A ($n = 97$) consisted of female collegiate band conductors, female music education or conducting graduate students, and former female music education or conducting graduate students. Group B ($n = 93$) was female undergraduate instrumental music education students. The most frequently selected impactful mentors for both groups were

their undergraduate band directors and high school band directors. Similar to Grant's (2000) findings, 66% of Group A and 62% of Group B reported no preference for the gender of their mentors (Johnson, 2020, p. 79). Although the maximum number of female mentors in both groups was six, the results showed more female mentors among Group B than Group A respondents (Johnson, 2020). Besides the findings of existing studies were largely consistent with the influence of female mentors and role models for female band directors and instrumental music education students at the college level, a few scholars (Jones, 2010; Minette, 2011) have investigated mentors and role models for secondary school teachers.

Compared to female collegiate band directors, female high school band teachers struggle more with the absence of mentors and role models. In 2010, Sara Jones (2010) conducted a narrative study exploring three female high school band directors' professional experiences, careers, and identities. Each participant indicated that female role models and mentors were non-existent as they taught high school band (Jones, 2010). Jones concluded that the lack of female mentors and role models affected the establishment of their teacher identity and made it difficult for them to build relationships with other female band teachers. She conflates the concepts of mentor and role model, which did not allow us to know whether her respondents lacked a mentor or a role model.

Minette (2011) investigated female instrumental secondary school music teachers, including middle school and high school educators in Iowa, Minnesota, and Wisconsin. She collected data through an emailed survey to the female band and orchestra directors ($N = 397$) and a focus group interview of eight participants who taught or had taught instrumental music at the secondary level (Grades 6–12) (Minette, 2011). Minette

reported that 55% of respondents, regardless of the number of years spent teaching, believed there were enough female and male role models in the profession. Moreover, in Minette's focus-group interviews, participants acknowledged that there were far more male role models than women, but that was not troubling. These findings were consistent with Fiske (1997), Grant (2000), and Jackson (2020), suggesting that although female role models were few, these female band directors could accept excellent male musicians as their role models. Minette (2011) indicated the possible problem is the lack of mentors. Her focus group emphasized that they need mentors' "side by side" help, especially at the early career stage. Therefore, Minette concluded that their local teacher development program did not provide enough opportunities for instrumental music education or band rehearsal training for those secondary school teachers. This issue deserves further in-depth investigation.

Summary

Scholars have investigated the experiences and history of women band directors, describing the different types of discrimination experienced by these successful women band directors in their careers. Common types of discrimination include sexism, sex stereotyping, and job isolation. Also, scholars noted that the persistent challenges were long work hours, conflicts with family responsibilities, and a lack of appropriate mentors and role models among these female band directors. While the above factors may be the primary reasons for the lack of female high school or college wind band conductors, some scholars have also pointed out that early childhood instrumental choices (Abeles, 2009) or choose not to participate in the jazz ensemble or marching band (McKeage,

2004) may result in women losing the opportunity to be fully prepared for high school or collegiate positions.

The existing research shared and focused on the stories of women high school band directors who have thrived in the profession, which provided survival lessons for other women band directors. From these stories, women should consider whether they have the personalities needed to succeed, such as those of assertive, aggressive, and confident leaders, although women band directors still need to receive more support from their families, workplace, and mentors. At the same time, female high school band directors must break out of the job isolation caused by the "Good Old Boys Club." It is not enough to establish a community of female band directors, but more importantly, to actively participate in the traditional band community, such as music events and professional conferences. Male band directors must do more to make females feel included, safe, and respected if the entire field is to survive and move forward in the 21st century. Lastly, instrument choices riddled with gender stereotyping have long been investigated in music education. Recently the scholar Andria Mullan (2014) indicated that those female band directors who play instruments that are stereotyped as so-called "masculine" provide more opportunities for women throughout their education that would better prepare them for band directing. This body of research also needs to be considered so that women who play woodwind instruments have the same access to curricular experiences, such as jazz bands. In the long run, decisions to play a particular type of instrument might also affect the potential financial earnings made as a musician (Mullan, 2014, p. 167). Therefore, female pre-service instrumental teachers would better equip themselves by learning to teach and play "masculine" instruments, registering for

extra conducting courses, being familiar with various band rehearsals, and even pursuing

studying secondary instruments outside of their primary instrument's family. However,

these previous research studies have focused more on female high school band directors

while rarely investigating female elementary and middle-level band teachers about the

discrimination experiences and challenges in their profession.

Chapter 3

METHODOLOGY

Purpose of Study

The purpose of this study was to investigate the perceptions of female elementary and middle-level (middle school and junior high school) band teachers across the United States to reveal whether they perceive themselves as discriminated against in the profession of band teaching and to examine differences among independent variables: age, level of education, levels of teaching, location of school, primary instruments played, region of school, type of school, and years of teaching experience, and then examine the influence of mentors and role models and their perceptions of working motherhood.

Participants and Sampling Procedures

The research focused on women teaching elementary and middle-level school bands in the United States. The research did not recruit individuals outside the U.S. or initiate study procedures while a participant was visiting a country other than the U.S. The research protocol recruited only English-speaking individuals. The participants were 21 and older, likely less senior than the retirement age for the typical teacher.

Participants for this study were from the membership of the National Association for Music Education (NAfME) and Women Band Directors International (WBDI) in the United States. NAfME provides research survey assistance to university students and professional researchers engaged in research (National Association for Music Education,

2022). To gain access to NAfME's membership list, the researcher applied by submitting

a proposal to the Society for Research in Music Education (SRME) Executive

Committee. When the SRME approved the proposal, then NAfME distributed the

invitation letter for using their "mass email transmission tool" directly to a portion of the

target population ($N = 5,000$) within the three selection criteria: "Elementary Only,"

"Middle School / Jr. High Only," and "Band" (National Association for Music Education,

2022; See Appendix C). Since the "mass email transmission tool" cannot select the

gender of the membership, the survey instrument used one question, "I describe myself

as," to exclude participants who self-identified as males and transmales (Bovin, 2020).

The researcher emailed the Women Band Directors International (WBDI)

president and requested to send out the questionnaire invitation to their membership.

When the president, Ms. Bethann Adams, approved the requested email, the coordinator

of the WBDI forwarded the invitation letter with the link to the questionnaire to their

membership via biweekly emails (See Appendix D). The survey instrument used one

question "Are you currently teaching elementary (K–5) and/or middle/junior high school

band (Grade 6–9) as any position of your work?" to exclude high school, college, or other

professional band conductors (Bovin, 2020).

Purposive sampling ensures that potential members of the sample will have

appropriate knowledge and understanding of the research topic. This allows researchers

to be very efficient in obtaining information from the respondents, even though this type

of sampling may not yield a completely representative sample of all female band teachers

in elementary and middle-level schools (Babbie, 1990; Sue & Ritter, 2012). Therefore,

using purposive sampling, the participants were selected as "Elementary Only," "Middle

School / Jr. High Only," "Band," and "Female / Transfemale" from both the NAfME and the WBDI organizations.

Instrumentation

The survey design for this study (Babbie, 1990; Creswell, 2009; Sue & Ritter, 2012) allowed the participants quantitatively describes the perceptions of female elementary and middle-level school band teachers about whether they perceive themselves as discriminated against in the profession of band teaching among independent variables: age, level of education, levels of teaching, location of school, primary instruments played, region of school, type of school, and years of teaching experience, and examine the influence of mentors and role models. The survey questionnaire was created based on previous research studies that also collected data on similar research topics: Bovin (2020), Grant (2000), Gould (1996), Johnson (2020), Minette (2011), and Sears (2010). The structure of the questionnaire and most of the items, including Likert-type items, multiple-choice items, and open-ended items, were replicated items from the questionnaires used in Bovin's (2020) and Johnson's (2020) studies and a gender discrimination investigation from the Pew Research Center (Parker & Funk, 2017), but modified to adapt for the current study's research purpose and questions.

Data were collected via an online survey tool (Qualtrics) that allows the researcher to create a questionnaire, distribute the survey, keep track of previous participants anonymously, and analyze responses through qualtrics.com. The online survey was sent to potential participants by invitation email with a link to the

questionnaire. The potential participants could open and complete the survey questionnaire through mobile devices, tablets, and computers. The advantages of online survey studies are that they are economical, convenient to design, and allow for rapid data collection (Creswell, 2009; Sue & Ritter, 2012). Also, the disadvantage of an online survey includes the issues of receiving an email invitation, unable to track the response rate, inaccurate demographic information, and unreliable data collection (Andrews, Nonnecke, & Preece, 2003; Latkovikj & Popovska, 2019; Wright, 2005).

The survey instrument (See Appendix B) was divided into six sections: (1) "Qualification Check," (2) "Demographic Information and Relevant Professional Information," (3) "Statements, Perceptions, and Experiences at School," (4) "Personal and Professional Life," (5) "Mentors and Role Models in Professional Life," and (6) "Additional Demographic Information." Tools in Qualtrics allow the questionnaire designer to insert page breaks to separate each section and each question that requires homogenized information to avoid stressing the respondents with too many questions within one page.

In the initial section, eligibility screening was conducted to exclude ineligible participants and to confirm that participants described themselves as female or transfemale and currently teach in elementary (K–5) or middle/junior high (Grade 6–9) schools (see Questions 1 and 2 in Appendix B). Qualtrics allows setting up skip logic to direct unqualified respondents to withdraw from the questionnaire.

The second section included demographic questions: age and state (see Questions 3 & 4 in Appendix B) and relevant professional information: years of teaching experience, years of band teaching experience, teaching levels, primary instrument

played, the highest level of education, location of the school, type of school, and preferences of teaching high school/college (See Questions 5 to 13 in Appendix B). The last question of the second section was an open-ended question to allow respondents to share their perspectives on the reasons for their preference to continue teaching at elementary or middle/junior high schools or not (see Question 14 in Appendix B).

The third section of the survey investigated the perceptions of discrimination, sexism, gender stereotypes, and job isolation in the professional experiences of female elementary and middle-level school band teachers (see Question 15 in Appendix B). The perception questions included four groups: (1) perceptions of discrimination in general; (2) perceptions of sexism; (3) perceptions of sex stereotyping; and (4) perceptions of job isolation. Participants responded to each statement using a 6-point Likert-type scale ranging from 6 for "strongly agree" to 1 for "strongly disagree" (Sue & Ritter, 2012; Wu & Leung, 2017). The dependent variables were scored for perception statements about discrimination, sexism, sex stereotypes, and job isolation as measured through Likert-type scales. These scores were treated as continuous variables: point 6 represents "Strongly agree," point 5 represents "Agree," point 4 represents "Somewhat agree," point 3 represents "Somewhat disagree," point 2 represents "Disagree," and point 1 represents "Strongly disagree." Also, an open-ended question provided more opportunities for female elementary and middle-level school band teachers to share their perspectives (see Question 16 in Appendix B).

The fourth section of the survey investigated respondents' marital status (see Question 17 in Appendix B) and whether their family responsibilities interfere with their profession. Skip logic set up contingency questions (Babbie, 1990) to classify

respondents with children and those without (see Question 18 in Appendix B).

Respondents with children answered questions about the impact of pregnancy and

parenting on their careers (see Questions 19–1 & 19–2 in Appendix B). Respondents

without children were asked if they were concerned about the impact of having children

on their careers (see Question 19–3 in Appendix B). To more deeply understand female

band teachers' perceptions and opinions, this section also set one open-ended question to

allow sharing of personal stories about balanced family and professional life (see

Question 20 in Appendix B).

The fifth section of the survey gathered information about the mentors and role

models in female band teachers' professional lives. Essential questions about

respondents' mentors included the number of mentors, who are influential mentors, the

number of female mentors, who are their influential female mentors, and their

perceptions of the importance of mentors (see Questions 21 to 25 in Appendix B). Also,

respondents rated their perceived mentor's different attributes: conducting/rehearsal

experience, gender, knowledgeable, personality, professional achievements, reputation,

and others (see Question 26 in Appendix B), and the ways their mentors serve

successfully: "invested in the mentor/mentee relationship," "provided constructive

feedback for personal growth," "demonstrated passion for the field," "was available to

meet/have discussions," "provided evidence of success in the field," "provided

meaningful feedback," and others (See Question 27 in Appendix B), using a 6-point

Likert-type scale ranging from 6 points for "Strongly agree" to 1 point for "Strongly

disagree" (Sue & Ritter, 2012; Wu & Leung, 2017). Essential questions of respondents'

mentors included influential role models, the number of female role models, who are

influential female role models, and female teachers' perceptions about the importance of role models (see Questions 29 to 32 in Appendix B). Additionally, female band teachers could share their personal experiences with their female mentors (see Question 28 in Appendix B) and female role models (See Question 33 in Appendix B) through two separate open-ended questions.

The sixth section of the survey collected additional demographic data, including ethnic background, respondents' teaching area, and their current type of employment (see Questions 34 to 36). The end of the survey invited respondents to enter a raffle to win a prize (see Question 37). After respondents finished taking the survey, they were directed to another web page within Qualtrics not associated with this study, where they were asked to enter their email to participate in the drawing. The drawing website did not save their email for future research use.

The questionnaire was pretested (Babbie, 1990; Sue & Ritter, 2012) by a doctoral advisor and two female doctoral students in a music education program in the southwest United States who had band teaching experience at elementary and middle/junior high school levels. Then, the questionnaire was pilot-tested (Babbie, 1990; Miksza & Elpus, 2018) with a few additional target population members ($N = 3$) currently teaching band music at elementary and middle/junior high schools. Comments and results from the pretest and pilot tests were collected. The researcher updated the questionnaire appropriately to ensure the validity of the content of the survey instrument (Huck, 2012). Cronbach's Alpha was conducted on the main study results to test the internal consistency and reliability of the survey instrument (Huck, 2012) and resulted in a

reliability of .957 for combined data from two organizations. Cronbach's Alpha was calculated, resulting in a reliability of .956 for NAfME and .955 for WBDI, respectively.

Procedure and Response Rate

The survey questionnaire was sent to two music organizations: the National Association for Music Education (NAfME) and the Women Band Directors International (WBDI). The invitation email included a cover letter and a link to the consent form and the questionnaire (See Appendix B). The cover letter contained a brief description of the study and explained the purpose of the research. The consent form described voluntary participation and guaranteed anonymity for the respondents. Respondents could indicate their consent to participate in the study by checking a box on the consent form. Once they did so, the participants were taken to the survey. Respondents were able to skip questions they did not want to answer and could withdraw from the survey at any time.

Survey distribution two NAfME was sent three different times. NAfME sent a survey invitation email to select groups (band, elementary, and middle/junior high school teachers) within their association with a link to the questionnaire. The initial distribution ($N = 5,000$) and its follow-up invitation email were sent twice within three weeks. Responses were collected from NAfME ($N = 198$). Records of the three distributions are displayed in Table 3.1; these were obtained from the senior manager of member services in NAfME (Cook, personal communication, January 10, 2023; See Appendix C).

Table 3.1

Open and Click Records in Three Distributions by NAfME

Date	Open Frequency	Open Rate %	Click Frequency	Click Rate %
11/22/2022	1,705	41	101	2.4
12/01/2022	1,760	43	67	2
12/15/2022	1,759	43	59	1

While NAfME was distributing the survey to their band director members, the coordinator of the WBDI simultaneously sent the survey to all of the subscribed members. The coordinator sent the survey invitation email twice after the initial email (See Appendix D). WBDI reports that, among 329 active members, they have 172 members who indicated they teach elementary or middle school (Hoover, personal communication, January 16, 2023). From the target population, responses were collected from 136 members, resulting in a response rate of 79%.

Anonymous data were collected and exported from Qualtrics into the software Statistical Package for the Social Sciences (SPSS 28 for Windows) for analysis. The descriptive statistic of the mean, median, mode, standard deviation, variance, and range were calculated in SPSS for each variable. The researcher then analyzed the participants' survey responses using descriptive analysis and parametric one-way, two-way, and three-way Multivariate Analyses of Variance (MANOVA). Responses to open-ended questions were analyzed for similar themes. Recurring text searches and word frequencies of responses to these themes were coded using the software Nvivo. These results are also reported in Chapter 4.

Variables and Definitions

Band Teacher Age. This variable refers to the age of the band teacher in whole years. The specific age is a ratio variable. The groups of participants were divided into 21–30, 31–40, 41–50, and above 50, which is a nominal independent variable. The variable was titled BTAge (See Question 3 in Appendix B).

Band Teacher Level of Education. This nominal variable refers to the highest degree held in music, including undergraduate and graduate. The variable was titled BTDegree (see Question 9 in Appendix B).

Band Teacher Level(s) of Teaching. This nominal variable refers to the band teacher's current teaching levels. Respondents who teach kindergarten to the fifth grade, which is the "elementary only." Respondents who teach middle school (from the sixth to the eighth grades) or junior high school (from the seventh to the ninth grades), which this group is the "middle school only." Respondents who teach kindergarten to the ninth grade, which is the "combined elementary and middle school." Respondents who teach sixth to twelfth grades, which is the "combined middle and high school." Respondents who teach kindergarten to the twelfth grades, which is the "combined elementary, middle, and high school." The variable is titled BTTeachingLevel (see Question 7 in Appendix B).

Band Teacher Location of School. This nominal variable is the type of geographic location of the school where the band teacher is currently teaching, including urban, suburban, and rural. The variable is titled BTSchoolLocation (see Question 10 in Appendix B).

Band Teacher Primary Instrument. This nominal variable refers to the instrument that the band teacher is the most proficient. Due to the wide variety of instruments, this variable is analyzed by dividing it into brass, woodwind, and other instruments. The variable is titled BTPrimaryInstrument (see Question 8 in Appendix B).

Band Teacher Perceptions. Responses to the 22 Likert-type items were used to collect data on the perspectives of the female band teachers about their experiences of discrimination, sexism, sex stereotypes, and job isolation in the profession. The participants responded to perception statements (Bovin, 2020; Parker & Funk, 2017; Pickens, 2005), such as "I have been discriminated against at my band teaching job," using the response options of *Strongly Agree, Agree, Somewhat Agree, Somewhat Disagree, Disagree, Strongly Disagree.* The 22 items investigated the female band teachers' perspectives toward four categories of experience: discrimination (DiscriminationScale), sexism (SexismScale), sex stereotypes (SexStereotypesScale), and job isolation (JobIsolationScale) (see Question 15 in Appendix B).

*Discrimination***.** This variable refers to perceived discrimination experienced as a band teacher in the profession, including prejudicial treatment based on individual characteristics such as gender, age, or teaching level. The statements about discrimination experience for this study included seven items:

(1) "I have been discriminated against at my band-teaching job" (DiscriminationItemOne);

(2) "I have been treated unfairly by administrators while I was a band teacher" (DiscriminationItemTwo);

(3) "I feel like I'm not respected because I teach at the elementary or middle school levels" (DiscriminationItemThree);

(4) "My ideas and opinions are often ignored by fellow band teachers" (DiscriminationItemFour);

(5) "My ideas and opinions are often ignored by principals" (DiscriminationItemFive);

(6) "I have been addressed in a less-than-professional way" (DiscriminationItemSix);

(7) "I have been mistaken for teaching general music or choir instead of the band" (DiscriminationItemSeven).

Sexism. Sexism refers to sex discrimination which means "wrongful discrimination on the basis of sex" (Warren, 1985, p. 83). "Sexism" is defined by Swim and Hyers (2009) as "individuals' attitudes, beliefs, and behaviors, and organizational, institutional, and cultural practices that either reflect negative evaluations of individuals based on their gender or support unequal status of women and men" (p. 407). For the current study, the statements of experienced sexism included:

(1) "I have heard demeaning remarks about myself and/or other females" (SexismItemOne);

(2) "I have earned less money than male teachers who teach the same level of the band" (SexismItemTwo);

(3) "I have received less support than male band teachers" (SexismItemThree);

67

(4) "I have trouble finding a band job because I am a female"

   (SexismItemFour);

(5) "I have trouble keeping a band job because I am a female"

   (SexismItemFive).

   Sex Stereotypes. Sex stereotypes refer to common perceptions of the

"psychological characteristics" and "personal traits" of men and women (Ashmore & Del

Boca, 1979; Ashmore & Tumia, 1980; Williams & Bennett, 1975). Because "sex" is a

binary concept and defines the "female" or "male" in terms of physical traits (Hyde et al.,

2019), "gender stereotypes" language is used more frequently in gender research,

particularly in studies that emphasize psychological identity (Canal, Garnham & Oakhill,

2015; Eagly & Mladinic, 1994; Ellermer, 2018; Heilman, 2012; Kite, Deaux & Haines,

2008). For this study, "sex stereotypes" were selected and defined as shared social

expectations of feminine and masculine characteristics based on band teachers' physical

and psychological characteristics. The statements of sex stereotypes experienced for the

current study included five items:

(1) "I was treated as if I am not competent" (SexStereotypesItemOne);

(2) "I have been turned down for teaching band during the hiring process"

   (SexStereotypesItemTwo);

(3) "I have been misjudged by school/district administrators about my

   capabilities" (SexStereotypesItemThree);

(4) "I have needed to provide more evidence of my musicianship and

   competence than others" (SexStereotypesItemFour);

(5) "I have had my judgment questioned during my band teaching/rehearsal"

(SexStereotypesvFive).

Job Isolation. Job isolation is a personal feeling of loneliness at work (Kose &

Özmen, 2021). Music education scholars reported that "Boy's Club" or "Good Old Boys

Club," where male conductors were unwilling to accept women into their groups, led to

job isolation for female band directors (Bovin, 2020; Fischer-Croneis, 2016; Fiske, 1997;

Fitzpatrick, 2013; Grant, 2000; Greaves-Spurgeon, 1998; Mullan, 2014; Sears, 2010;

Wilson, 2014). This situation can result in female band teachers being excluded from

professional settings, such as conferences (Fischer-Croneis, 2016; Mullan, 2014; Sears,

2010), competition events (Sears, 2010), and school districts (Fischer-Croneis, 2016).

The statements of job isolation for this study's survey included five items:

(1) "I have felt disconnected from other male band teachers at work"

(JobIsolationItemOne);

(2) "I have felt myself withdrawing from male attendees when attending

instrumental conferences" (JobIsolationItemTwo);

(3) "I have felt alienated from my male colleagues" (JobIsolationItemThree);

(4) "I have felt isolated in the school" (JobIsolationItemFour);

(5) "I have felt isolated when teaching band" (JobIsolationItemFive);

Band Teacher Region of School. This nominal variable refers to the states where

the band teacher's school is located. Based on the six Divisions of the National

Association for Music Education (NAfME), participants' work location was divided into

(1) Eastern Division, (2) North Central Division, (3) Northwest Division, (4) Southern

Division, (5) Southwestern Division, and (6) Western Division (National Association for

Music Education, 2014, See Table 3.2). The variable is titled BTSchoolRegion (see

Question 4 in Appendix B).

Table 3.2

NAfME Divisions with States in Each

Eastern	North Central	Northwest	Southern	Southwestern	Western
Connecticut	Illinois	Alaska	Alabama	Arkansas	Arizona
Delaware	Indiana	Idaho	Florida	Colorado	California
Maine	Iowa	Montana	Georgia	Kansas	Hawaii
Maryland	Michigan	Oregon	Kentucky	Missouri	Nevada
Massachusetts	Minnesota	Washington	Louisiana	New Mexico	Utah
New Hampshire	Nebraska	Wyoming	Mississippi	Oklahoma	
New Jersey	North Dakota		North Carolina	Texas	
New York	Ohio		South Carolina		
Pennsylvania	South Dakota		Tennessee		
Rhode Island	Wisconsin		Virginia		
Vermont			West Virginia		

Band Teacher Type of School. This nominal variable refers to the school type

where the band teacher currently teaches, including public and non-public. The variable

is titled BTSchooType (see Question 11 in Appendix B).

Band Teacher Years of Teaching Experience. The survey included two

measures of band teacher years of teaching. One ratio variable, band teacher years of

teaching experience, refers to the years that the band teacher has been a certified music

teacher, including the current year. Participants were divided into 1–5, 6–10, 11–15, 16–

20, 21–25, and above 25 years; this data was converted ratio to a nominal variable. The

variable is titled BTYearsExp (see Question 5 in Appendix B). The second ratio variable, band teacher years of band teaching experience, refers to the number of years that the band teacher has taught the band, including the current year. Participants were also divided into 1–5, 6–10, 11–15, 16–20, 21–25, and above 25 years; this data also was converted ratio to a nominal variable. The variable is titled BTYearsBandExp (see Question 6 in Appendix B).

Multivariate Analysis of Variance

The purpose of multivariate analysis of variance (MANOVA) is to "test the significance of group differences" across "several dependent variables . . . . Oftentimes, these multiple dependent variables consist of different measures of essentially the same thing, but this need not always be the case" (Mertler & Vannatta, 2002, p. 119). According to Miksza and Elpus (2018), MANOVA, as the extension of the analysis of variance (ANOVA), is frequently used in music education research for analyzing multiple variables and "more than one continuous outcome measure" (p. 129).

The dependent variables of perception statements of discrimination, sexism, sex stereotypes, and job isolation were measured through Likert-type six-point scales, which were treated as continuous variables: point 6 represented "Strongly agree," point 5 represented "Somewhat agree," point 4 represented "Agree," point 3 represented "Disagree," point 2 represented "Somewhat disagree," and point 1 represented "Strongly disagree." These continuous variables were measured using an interval scale because there were equal intervals between the six points of the corresponding scores used in the Likert-Type Scale in this study (Ravid, 2020).

When MANOVA tests the significance of group differences, the researcher should consider six assumptions (Huck, 2012; Mertler & Vannatta, 2002):

(1) Each sample must be random and independent.

(2) All dependent variables must distribute as multivariate normality.

(3) The homogeneity of variance-covariance matrices for dependent variables in each group must be equal.

(4) All pairs of dependent variables must have a linear relationship.

(5) All pairs of dependent variables must have no multicollinearity.

(6) The observations on all dependent variables have no outliers.

Four common statistical tests calculate the value of the response variables, including Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root (Mertler & Vannatta, 2002). The *F* test for Wilks' lambda (Λ) was the reported MANOVA statistic and was used the most commonly and uniformly (Mertler & Vannatta, 2002). "The formula for Λ is a within sum-of-squares and cross-products matrix (W) divided by the total sum-of-squares and cross-products matrix (T), which is a sum of a between sum-of-squares and cross-products matrix (B) and a within sum-of-squares and cross-products matrix (W)" (Mertler & Vannatta, 2002, p. 125):

$$\Lambda = \frac{|W|}{|T|} = \frac{|W|}{|B + W|}$$

Although all dependent variables violated the assumptions of multivariate normality distribution, the sample size of about 20 in each group guarantees robustness to violations of multivariate normality in MANOVA (Mertler & Vannatta, 2002; Tabachnick & Fidell, 2019). Additionally, Box's test assessed the assumption of the homogeneity of variance-covariance. Since the assumption of the equal covariance

matrices was violated, the *F* test for Pillai's Trace was chosen as a more robust test statistic to be selected in interpreting the MANOVA results (Huck, 2012; Mertler & Vannatta, 2002; Tabachnick & Fidell, 2019). The formula for Pillai's Trace "V" is the inverse of the sum of the hypothesis sum of squares and cross products matrix (H), and the error sum of squares and cross products matrix (E), multiplied by the hypothesis sum of squares and cross products matrix (H) (Rencher & Christensen, 2012):

$$V = trace((H+E)^{-1}H)$$

The procedure of testing assumptions in the MANOVA was reported in Chapter 4, specifically for each research question.

　　　Multiple dependent variables were performed for *F* tests simultaneously when the MANOVA test statistic was applied in this study. Therefore, the given alpha value *p* < .05 was inappropriate for each comparison. In order to reduce Type I error, the Bonferroni adjustment technique was used to adjust for a given alpha value to prevent data from being incorrectly shown as statistically significant (Armstrong, 2014; Bland & Altman, 1995; Huck, 2012; Perneger, 1998). The adjusted significance level is α / k where "α" is the given alpha value *p* and "k" is the number of tests performed (Huck, 2012).

　　　Post hoc comparison or post hoc test helps the researcher to discover what causes the null hypothesis to be rejected (Huck, 2012, p. 257). According to the specific sample sizes and variance in each parametric research question, the post hoc test selection decision was reported in Chapter Four. When the group sizes were equal, the Tukey test of post hoc multiple comparisons (Miksza & Elpus, 2018; Ravid, 2020; Tabachnick & Fidell, 2007) was commonly used to provide "protection by demanding a larger

difference for any one comparison before statistical significance can be claimed"
(Coladarci & Cobb, 2014). In addition, when the group sizes were unequal, Scheffé's
multiple comparison tests were often preferable and a powerful post hoc test (Miksza &
Elpus, 2018; Tabachnick & Fidell, 2007). However, when the assumptions of equal
variances and equal sample sizes were violated in MANOVA, the Games-Howell
multiple comparison tests were a more useful and powerful post hoc test (Dunnet, 1980;
Rusticus & Lovato, 2014).

The data analysis in this study used several MANOVAs to analyze differences
among levels of independent variables for the dependent variables of discrimination,
sexism, stereotypes, and job isolation. Statistical analyses were computed using SPSS
28.0 statistical software.

Research Questions

The purpose of this study was to research female teachers at elementary and
middle-level (middle/junior high) schools who reported experiencing discrimination,
sexism, sex stereotypes, and job isolation. The research questions were adapted from the
previous research studies of Bovin (2020), Gould (1996), Grant (2000), Johnson (2020),
Minette (2011), and Sears (2010). The first five questions below collect descriptive data,
and the remaining questions collect parametric data from the MANOVA.

1. What are the perceptions of female elementary and middle-level school band
   teachers toward discrimination (7 items), sexism (5 items), sex stereotypes (5
   items), and job isolation (5 items)? (Survey Questions 15: 22 Likert-type items,
   and 16)

2. How do female elementary and middle-level school band teachers' desires to raise a family affect their careers? (Survey Questions 19-1, 19-2, 19-3, and 20)

3. Who do female elementary and middle-level school band teachers look to as mentors and role models? (Survey Questions 22, 24, 29, and 31)

4. What is the importance of mentors and role models for female elementary and middle-level school band teachers? (Survey Questions 25, 26, 27, and 32)

5. Do these female elementary and middle-level school band teachers consider changing to teaching at a higher level? Why or why not? (Survey Questions 12, 13, and 14)

6. Do female band teachers' age, levels of teaching, and level of education influence perceptions of discrimination, sexism, sex stereotypes, and job isolation? (Survey Questions 3, 7, 9, and 15)

Table 3.3

MANOVA Research Question 6, Hypotheses, Dependent Variables, and Independent Variables

Research Question	Hypothesis	Independent Variables	Dependent Variables
6. Q1: Are there significant mean differences in the female band teachers' perceptions of discrimination by age? (Survey Questions 3 & 15)	H_0: There are no significant differences in female band teachers' perceptions of discrimination by age.	Age	Perceptions of discrimination (7)
6. Q2: Are there significant mean differences in the female band teachers' perceptions of discrimination by levels of teaching? (Survey Questions 7 & 15)	H_0: There are no significant differences in female band teachers' perceptions of discrimination by levels of teaching.	Levels of teaching	Perceptions of discrimination (7)

Research Question	Hypothesis	Independent Variables	Dependent Variables
6. Q3: Are there significant mean differences in the female band teachers' perceptions of discrimination by level of education? (Survey Questions 9 & 15)	H_0: There are no significant differences in female band teachers' perceptions of discrimination by level of education.	Level of education	Perceptions of discrimination (7)
6. Q4: Is there a significant interaction among age, levels of teaching, and level of education on female band teachers' perceptions of discrimination? (Survey Questions 3, 7, 9 & 15)	H_0: There is no significant interaction among age, levels of teaching, and level of education on female band teachers' perceptions of discrimination.	Age, levels of teaching, and level of education	Perceptions of discrimination (7)
6. Q5: Are there significant mean differences in the female band teachers' perceptions of sexism by age? (Survey Questions 3 & 15)	H_0: There are no significant differences in female band teachers' perceptions of sexism by age.	Age	Perceptions of sexism (5)
6. Q6: Are there significant mean differences in the female band teachers' perceptions of sexism by levels of teaching? (Survey Questions 7 & 15)	H_0: There are no significant differences in female band teachers' perceptions of sexism by levels of teaching.	Levels of teaching	Perceptions of sexism (5)
6. Q7: Are there significant mean differences in the female band teachers' perceptions of sexism by level of education? (Survey Questions 9 & 15)	H_0: There are no significant differences in female band teachers' perceptions of sexism by level of education.	Level of education	Perceptions of sexism (5)
6. Q8: Is there a significant interaction among age, levels of teaching, and level of education on female band teachers' perceptions of sexism? (Survey Questions 3, 7, 9 & 15)	H_0: There is no significant interaction among age, levels of teaching, and level of education on female band teachers' perceptions of sexism.	Age, levels of teaching, and level of education	Perceptions of sexism (5)
6. Q9: Are there significant mean differences in the female band teachers' perceptions of sex stereotypes by age? (Survey Questions 3 & 15)	H_0: There are no significant differences in female band teachers' perceptions of sex stereotypes by age.	Age	Perceptions of sex stereotypes (5)

Research Question	Hypothesis	Independent Variables	Dependent Variables
6. Q10: Are there significant mean differences in the female band teachers' perceptions of sex stereotypes by levels of teaching? (Survey Questions 7 & 15)	H_0: There are no significant differences in female band teachers' perceptions of sex stereotypes by levels of teaching.	Levels of teaching	Perceptions of sex stereotypes (5)
6. Q11: Are there significant mean differences in the female band teachers' perceptions of sex stereotypes by level of education? (Survey Questions 9 & 15)	H_0: There are no significant differences in female band teachers' perceptions of sex stereotypes by level of education.	Level of education	Perceptions of sex stereotypes (5)
6. Q12: Is there a significant interaction among female band teacher age, levels of teaching, and level of education on female band teachers' perceptions of sex stereotypes? (Survey Questions 3, 7, 9 & 15)	H_0: There is no significant interaction among age, levels of teaching, and level of education on female band teachers' perceptions of sex stereotypes.	Age, levels of teaching, and level of education	Perceptions of sex stereotypes (5)
6. Q13: Are there significant mean differences in the female band teachers' perceptions of job isolation by age? (Survey Questions 3 & 15)	H_0: There are no significant differences in female band teachers' perceptions of job isolation by age.	Age	Perceptions of job isolation (5)
6. Q14: Are there significant mean differences in the female band teachers' perceptions of job isolation by levels of teaching? (Survey Questions 7 & 15)	H_0: There are no significant differences in female band teachers' perceptions of job isolation by levels of teaching.	Levels of teaching	Perceptions of job isolation (5)
6. Q15: Are there significant mean differences in the female band teachers' perceptions of job isolation by level of education? (Survey Questions 9 & 15)	H_0: There are no significant differences in female band teachers' perceptions of job isolation by level of education.	Level of education	Perceptions of job isolation (5)

Research Question	Hypothesis	Independent Variables	Dependent Variables
6. Q16: Is there a significant interaction among age, levels of teaching, and level of education on female band teachers' perceptions of job isolation? (Survey Questions 3, 7, 9 & 15)	H_0: There is no significant interaction among age, levels of teaching, and level of education on female band teachers' perceptions of job isolation.	Age, levels of teaching, and level of education	Perceptions of job isolation (5)

7. Do perceptions of discrimination, sexism, sex stereotypes, and job isolation differ among female band teachers by primary instrument? (Survey Questions 8 and 15)

Table 3.4

ANOVA Research Question 7, Hypotheses, Dependent Variables, and Independent

Variables

Research Question	Hypothesis	Independent Variables	Dependent Variables
7. Q1: Are there significant mean differences in female band teachers' perceptions of discrimination by primary instrument? (Survey Questions 8 & 15)	H_0: There are no significant mean differences in female band teachers' perceptions of discrimination by primary instrument.	Primary instrument	Perceptions of discrimination (7)
7. Q2: Are there significant mean differences in female band teachers' perceptions of sexism by primary instrument? (Survey Questions 8 & 15)	H_0: There are no significant mean differences in female band teachers' perceptions of sexism by primary instrument.	Primary instrument	Perceptions of sexism (7)
7. Q3: Are there significant mean differences in female band teachers' perceptions of sex stereotypes by primary instrument? (Survey Questions 8 & 15)	H_0: There are no significant mean differences in female band teachers' perceptions of sex stereotypes by primary instrument.	Primary instrument	Perceptions of sex stereotypes (7)

Research Question	Hypothesis	Independent Variables	Dependent Variables
7. Q4: Are there significant mean differences in female band teachers' perceptions of job isolation by primary instrument? (Survey Questions 8 & 15)	H_0: There are no significant mean differences in female band teachers' perceptions of job isolation by primary instrument.	Primary instrument	Perceptions of job isolation (7)

8. Do female band teacher years of teaching experience and female band teacher years of band teaching experience influence perceptions of discrimination, sexism, sex stereotyping, and job isolation in their careers? (Survey Questions 5, 6, and 15)

Table 3.5

MANOVA Research Question 8, Hypotheses, Dependent Variables, and Independent Variables

Research Question	Hypothesis	Independent Variables	Dependent Variables
8. Q1: Are there mean significant differences in the female band teachers' perceptions of discrimination by years of teaching experience? (Survey Questions 5 & 15)	H_0: There are no significant differences in female band teachers' perceptions of discrimination by years of teaching experience.	Years of teaching experience	Perceptions of discrimination (7)
8. Q2: Are there mean significant differences in the female band teachers' perceptions of discrimination by years of band teaching experience? (Survey Questions 6 & 15)	H_0: There are no significant differences in female band teachers' perceptions of discrimination by years of band teaching experience.	Years of band teaching experience	Perceptions of discrimination (7)

Research Question	Hypothesis	Independent Variables	Dependent Variables
8. Q3: Is there a significant interaction between years of teaching experience and years of band teaching experience on female band teachers' perceptions of discrimination? (Survey Questions 5, 6 & 15)	H_0: There is no significant interaction between years of teaching experience and years of band teaching experience on female band teachers' perceptions of discrimination.	Years of teaching experience and Years of band teaching experience	Perceptions of discrimination (7)
8. Q4: Are there mean significant differences in the female band teachers' perceptions of sexism by years of teaching experience? (Survey Questions 5 & 15)	H_0: There are no significant differences in female band teachers' perceptions of sexism by years of teaching experience.	Years of teaching experience	Perceptions of sexism (5)
8. Q5: Are there mean significant differences in the female band teachers' perceptions of sexism by years of band teaching experience? (Survey Questions 6 & 15)	H_0: There are no significant differences in female band teachers' perceptions of sexism by years of band teaching experience.	Years of band teaching experience	Perceptions of sexism (5)
8. Q6: Is there a significant interaction between years of teaching experience and years of band teaching experience on female band teachers' perceptions of sexism? (Survey Questions 5, 6 & 15)	H_0: There is no significant interaction between years of teaching experience and years of band teaching experience on female band teachers' perceptions of sexism.	Years of teaching experience and Years of band teaching experience	Perceptions of sexism (5)
8. Q7: Are there mean significant differences in the female band teachers' perceptions of sex stereotypes by years of teaching experience? (Survey Questions 5 & 15)	H_0: There are no significant differences in female band teachers' perceptions of sex stereotypes by years of teaching experience.	Years of teaching experience	Perceptions of sex stereotypes (5)
8. Q8: Are there mean significant differences in the female band teachers' perceptions of sex stereotypes by years of band teaching experience? (Survey Questions 6 & 15)	H_0: There are no significant differences in female band teachers' perceptions of sex stereotypes by years of band teaching experience.	Years of band teaching experience	Perceptions of sex stereotypes (5)

Research Question	Hypothesis	Independent Variables	Dependent Variables
8. Q9: Is there a significant interaction between years of teaching experience and years of band teaching experience on female band teachers' perceptions of sex stereotypes? (Survey Questions 5, 6 & 15)	H_0: There is no significant interaction between years of teaching experience and years of band teaching experience on female band teachers' perceptions of sex stereotypes.	Years of teaching experience and Years of band teaching experience	Perceptions of sex stereotypes (5)
8. Q10: Are there mean significant differences in the female band teachers' perceptions of job isolation by years of teaching experience? (Survey Questions 5 & 15)	H_0: There are no significant differences in female band teachers' perceptions of job isolation by years of teaching experience.	Years of teaching experience	Perceptions of job isolation (5)
8. Q11: Are there mean significant differences in the female band teachers' perceptions of job isolation by years of band teaching experience? (Survey Questions 6 & 15)	H_0: There are no significant differences in female band teachers' perceptions of job isolation by years of band teaching experience.	Years of band teaching experience	Perceptions of job isolation (5)
8. Q12: Is there a significant interaction between years of teaching experience and years of band teaching experience on female band teachers' perceptions of job isolation? (Survey Questions 5, 6 & 15)	H_0: There is no significant interaction between years of teaching experience and years of band teaching experience on female band teachers' perceptions of job isolation.	Years of teaching experience and Years of band teaching experience	Perceptions of job isolation (5)

9. Do female band teachers' region of school, location of school, and type of school influence perceptions of discrimination, sexism, sex stereotyping, and job isolation in their careers? (Survey Questions 4, 10, 11, and 15)

Table 3.6

MANOVA Research Question 9, Hypotheses, Dependent Variables, and Independent

Variables

Research Question	Hypothesis	Independent Variables	Dependent Variables
9. Q1: Are there mean significant differences in the female band teachers' perceptions of discrimination by region of school? (Survey Questions 4 & 15)	H_0: There are no significant differences in female band teachers' perceptions of discrimination by region of school.	Region of school	Perceptions of discrimination (7)
9. Q2: Are there significant differences in the female band teachers' perceptions of discrimination by location of school? (Survey Questions 10 & 15)	H_0: There are no significant differences in female band teachers' perceptions of discrimination by location of school.	Location of school	Perceptions of discrimination (7)
9. Q3: Are there significant differences in the female band teachers' perceptions of discrimination by type of school? (Survey Questions 11 & 15)	H_0: There are no significant differences in female band teachers' perceptions of discrimination by type of school.	Type of school	Perceptions of discrimination (7)
9. Q4: Is there a significant interaction among region of school, location of school, and type of school on female band teachers' perceptions of discrimination? (Survey Questions 4, 10, 11, & 15)	H_0: There is no significant interaction among region of school, location of school, and type of school on female band teachers' perceptions of discrimination.	Location of school, region of school, and type of school	Perceptions of discrimination (7)
9. Q5: Are there significant mean differences in the female band teachers' perceptions of sexism by region of school? (Survey Questions 4 & 15)	H_0: There are no significant differences in female band teachers' perceptions of sexism by region of school.	Region of school	Perceptions of sexism (5)
9. Q6: Are there significant mean differences in the female band teachers' perceptions of sexism by location of school? (Survey Questions 10 & 15)	H_0: There are no significant differences in female band teachers' perceptions of sexism by location of school.	Location of school	Perceptions of sexism (5)

Research Question	Hypothesis	Independent Variables	Dependent Variables
9. Q7: Are there significant mean differences in the female band teachers' perceptions of sexism by type of school? (Survey Questions 11 & 15)	H_0: There are no significant differences in female band teachers' perceptions of sexism by type of school.	Type of school	Perceptions of sexism (5)
9. Q8: Is there a significant interaction among region of school, location of school, and type of school on female band teachers' perceptions of sexism? (Survey Questions 4, 10, 11, & 15)	H_0: There is no significant interaction among region of school, location of school, and type of school on female band teachers' perceptions of sexism.	Location of school, region of school, and type of school	Perceptions of sexism (5)
9. Q9: Are there significant mean differences in the female band teachers' perceptions of sex stereotypes by region of school? (Survey Questions 4 & 15)	H_0: There are no significant differences in female band teachers' perceptions of sex stereotypes by region of school.	Region of school	Perceptions of sex stereotypes (5)
9. Q10: Are there significant mean differences in the female band teachers' perceptions of sex stereotypes by location of school? (Survey Questions 10 & 15)	H_0: There are no significant differences in female band teachers' perceptions of sex stereotypes by location of school.	Location of school	Perceptions of sex stereotypes (5)
9. Q11: Are there significant mean differences in the female band teachers' perceptions of sex stereotypes by type of school? (Survey Questions 11 & 15)	H_0: There are no significant differences in female band teachers' perceptions of sex stereotypes by type of school.	Type of school	Perceptions of sex stereotypes (5)
9. Q12: Is there a significant interaction among region of school, location of school, and type of school on female band teachers' perceptions of sex stereotypes? (Survey Questions 4, 10, 11, & 15)	H_0: There is no significant interaction among region of school, location of school, and type of school on female band teachers' perceptions of sex stereotypes.	Location of school, region of school, and type of school	Perceptions of sex stereotypes (5)
9. Q13: Are there significant mean differences in the female band teachers' perceptions of job isolation by region of school? (Survey Questions 4 & 15)	H_0: There are no significant differences in female band teachers' perceptions of job isolation by region of school.	Region of school	Perceptions of job isolation (5)

Research Question	Hypothesis	Independent Variables	Dependent Variables
9. Q14: Are there significant mean differences in the female band teachers' perceptions of job isolation by location of school? (Survey Questions 10 & 15)	H_0: There are no significant differences in female band teachers' perceptions of job isolation by location of school.	Location of school	Perceptions of job isolation (5)
9. Q15: Are there significant mean differences in the female band teachers' perceptions of job isolation by type of school? (Survey Questions 11 & 15)	H_0: There are no significant differences in female band teachers' perceptions of job isolation by type of school.	Type of school	Perceptions of job isolation (5)
9. Q16: Is there a significant interaction among region of school, location of school, and type of school on female band teachers' perceptions of job isolation? (Survey Questions 4, 10, 11, & 15)	H_0: There is no significant interaction among region of school, location of school, and type of school on female band teachers' perceptions of job isolation.	Location of school, region of school, and type of school	Perceptions of job isolation (5)

Chapter 4

RESULTS

The purpose of this study was to investigate the perceptions of female elementary

and middle-level (middle school and junior high school) band teachers across the United

States to reveal whether they perceive themselves as discriminated against in the

profession of band teaching and to examine differences among independent variables:

age, level of education, levels of teaching, location of school, primary instruments

played, region of school, type of school, and years of band and music teaching

experience, and then examine the influence of family, mentors and role models on

women elementary and middle/junior high school band teachers.

The collection of questionnaire data used Qultrics, an online survey tool.

Microsoft Excel 365 collapsed data from the National Association for Music Education

(NAfME) and the Women Band Directors International (WBDI) respondents. All data

analyses were performed using SPSS 28.0 statistic software.

Descriptive Statistics

The total number of respondents from NAfME and WBDI for this study was 342

band teachers. The questionnaire in the present study allowed all band teachers to

participate who identify as women, regardless of their biological sex. Demographic data

indicated that the respondents consisted of females ($N = 257$, 75.1%), males ($N = 77$,

22.5%), transfemales ($N = 0$, 0%), and transmales ($N = 8$, 2.3%). The questionnaire used

one question, "I describe myself as," to exclude participants who were males and

transmales (Bovin, 2020). The female band teacher respondents were from NAfME ($N =$

121, 35.4%) and WBDI (*N* = 136, 39.8%) in Table 4.1. The questionnaire used another question, "Are you currently teaching elementary (K-5) and/or middle/junior high school band (Grade 6-9) as any position of your work?" to exclude high school, college, or other professional band directors (Bovin, 2020). Therefore, the valid responses of female band teachers were from NAfME (*N* = 116) and WBDI (*N* = 125). Demographic and background data were collected to provide an overall description of the female band teacher participants, including age, highest degree obtained, levels of teaching, location of school, primary instruments played, region of the current position, type of school, years of music teaching experience and years of band teaching experience. Frequencies, percentages, means, medium, mode, and ranges of the descriptive and background data appear in Tables 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, and 4.9.

Table 4.1

Frequency of Band Teacher Respondents in Both Organizations

Organization	Gender	*N*	%
Combined	Female	257	75.1
	Male	77	22.5
	Transfemale	0	0
	Transmale	8	2.3
NAfME	Female	121	35.4
	Male	77	22.5
	Transmale	8	2.3
WBDI	Female	136	39.8

Table 4.2

Frequency of Female Band Teachers' Age

Organization	*N*	Mean	Median	Mode	Range	Min	Max	Missing
Combined	236	41.14	40.5	45	46	22	68	5
NAfME	111	43.32	43	60	46	22	68	5
WBDI	125	39.19	38	35; 45*	45	22	67	0

*Multiple modes exist.

Table 4.3

Frequency of Female Band Teachers' Highest Degree Obtained

Organization	Degree	*N*	%
Combined	Bachelors	73	30.3
	Masters	146	60.6
	Doctorates	9	3.7
	Missing	13	5.4
NAfME	Bachelors	40	34.5
	Masters	62	53.4
	Doctorates	6	5.2
	Missing	8	6.9
WBDI	Bachelors	33	26.4
	Masters	84	67.2
	Doctorates	3	2.4
	Missing	5	4

Table 4.4

Frequency of Female Band Teachers' Levels of Teaching

Organization	Levels of teaching	*N*	%
Combined	Elementary only	18	7.5
	Middle school only	66	27.4
	Combined elementary and middle school	64	26.6
	Combined elementary, middle and high school	44	18.3
	Combined middle and high school	36	14.9
	Missing	13	5.4
NAfME	Elementary only	12	10.3
	Middle school only	13	11.2
	Combined elementary and middle school	46	39.7
	Combined elementary, middle and high school	28	24.1
	Combined middle and high school	9	7.8
	Missing	8	6.9
WBDI	Elementary only	6	4.8
	Middle school only	53	42.4
	Combined elementary and middle school	18	14.4
	Combined elementary, middle and high school	16	12.8
	Combined middle and high school	27	21.6
	Missing	5	4

Table 4.5

Frequency of Female Band Teachers' Location of School

Organization	Location	*N*	%
Combined	Urban	35	14.5
	Suburban	117	48.5
	Rural	76	31.5
	Missing	13	5.4
NAfME	Urban	16	13.8

Organization	Location	N	%
	Suburban	51	44
	Rural	41	35.3
	Missing	8	6.9
WBDI	Urban	19	15.2
	Suburban	66	52.8
	Rural	35	28
	Missing	5	4

Table 4.6

Frequency of Female Band Teachers' Primary Instrument

Organization	Instrument	N	%
Combined	Bassoon	7	2.9
	Cello	1	0.4
	Clarinet	47	19.5
	Euphonium/Baritone	8	3.3
	Flute	56	23.2
	French Horn	22	9.1
	Harp	1	0.4
	Oboe	8	3.3
	Percussion	11	4.6
	Piano/Keyboard	11	4.6
	Saxophone	17	7.1
	Trombone	8	3.3
	Trumpet	22	9.1
	Tuba	3	1.2
	Viola	1	0.4
	Violin	1	0.4
	Voice	4	1.7
	Missing	13	5.4
NAfME	Bassoon	3	2.6

Organization	Instrument	N	%
	Cello	1	0.9
	Clarinet	13	11.2
	Euphonium/Baritone	6	5.2
	Flute	31	26.7
	French Horn	9	7.8
	Harp	1	0.9
	Oboe	2	1.7
	Percussion	5	4.3
	Piano/Keyboard	8	6.9
	Saxophone	7	6
	Trombone	4	3.4
	Trumpet	11	9.5
	Tuba	1	0.9
	Viola	1	0.9
	Violin	1	0.9
	Voice	4	3.4
	Missing	8	6.9
WBDI	Bassoon	4	3.2
	Clarinet	34	27.2
	Euphonium/Baritone	2	1.6
	Flute	25	20
	French Horn	13	10.4
	Oboe	6	4.8
	Percussion	6	4.8
	Piano/Keyboard	3	2.4
	Saxophone	10	8
	Trombone	4	3.2
	Trumpet	11	8.8
	Tuba	2	1.6
	Missing	5	4

Table 4.7

Frequency of Female Band Teachers' Region of Current Position

Organization	States by Region	*N*	%
Combined	Eastern	59	24.5
	North Central	51	21.2
	Northwest	12	5
	Southern	46	19.1
	Southwestern	40	16.6
	Western	28	11.6
	Missing	5	2.1
NAfME	Eastern	34	29.3
	North Central	22	19
	Northwest	3	2.6
	Southern	18	15.5
	Southwestern	10	8.6
	Western	25	21.6
	Missing	4	3.4
WBDI	Eastern	25	20
	North Central	29	23.2
	Northwest	2	1.6
	Southern	28	22.4
	Southwestern	30	24
	Western	10	8
	Missing	1	0.8

Table 4.8

Female Band Teachers' Type of School at Current Position

Organization	Type of School	N	%
Combined	Public School	198	82.2
	Non-Public School	30	12.4
	Missing	13	5.4
NAfME	Public School	85	73.3
	Non-Public School	23	19.8
	Missing	8	6.9
WBDI	Public School	113	90.4
	Non-Public School	7	5.6
	Missing	5	4

Table 4.9

Total Years of Music Teaching Experience and Years of Band Teaching Experience

Organization	Value	N	Mean	Median	Mode	Range	Min	Max	Missing
Combined	Years of Teaching Experience	228	17.59	17	20	47	1	48	13
	Years of Band Experience	228	14.45	13	3; 11; 20*	38	1	39	13
NAfME	Years of Teaching Experience	108	19.09	20	21; 30*	47	1	48	8
	Years of Band Experience	108	15.19	15.5	3	37	1	38	8
WBDI	Years of Teaching Experience	120	16.23	15	3; 12; 13; 20*	42	1	43	5

Organization	Value	N	Mean	Median	Mode	Range	Min	Max	Missing
	Years of Band Experience	120	13.79	12	6	38	1	39	5

* Multiple modes exist.

Demographic data collected indicated the average age of female band teacher participants in this study was 41.14 years with a Master's degree (60.6%) whose primary instrument was flute (23.2%) or clarinet (19.5%). They were teaching middle school only (27.4%) and combined elementary and middle school (26.6%) in the suburban (48.5%) and rural (31.5%) areas from Eastern (24.5%) and North Central (21.2%). On average, they had taught 17.59 years in music and 14.45 years in band music in public schools (82.2%).

Research Question #1: What are the perceptions of female elementary and middle-level school band teachers toward discrimination, sexism, sex stereotypes, and job isolation? (Survey Questions 15: 22 Likert-type items).

Data on perceptions of discrimination in the profession of band teaching were collected from Likert-Type Scales that asked participants to rate statements related to discrimination, sexism, sex stereotypes, and job isolation. These scores were treated as continuous variables: point 6 represents "Strongly agree," point 5 represents "Agree," point 4 represents "Somewhat agree," point 3 represents "Somewhat disagree," point 2 represents "Disagree," and point 1 represents "Strongly disagree." Perspective statements were divided into four groups: (1) female band teachers' perceptions toward general discrimination as a band teacher in the profession; (2) female band teachers' perceptions

toward their work experiences of sexism; (3) female band teachers' perceptions toward

the sex stereotypes experience in band teaching work; (4) female band teachers'

perceptions toward being excluded from professional settings. Means and standard

deviations for each statement in these categories appear in Tables 4.10, 4.11, 4.12, and

4.13, respectively.

Table 4.10

Female Band Teachers' Perceptions toward Discrimination as a Band Teacher in the

Profession

Organization	Perception Statement	N	M	SD
Combined	I have been discriminated against at my band-teaching job.	216	2.68	1.661
	I have been treated unfairly by administrators while I was a band teacher.	216	2.62	1.680
	I feel like I'm not respected because I teach at the elementary or middle school levels.	210	3.23	1.616
	My ideas and opinions are often ignored by fellow band teachers.	207	2.69	1.608
	My ideas and opinions are often ignored by principals.	209	2.93	1.626
	I have been addressed in a less-than-professional way.	210	3.44	1.811
	I have been mistaken for teaching general music or choir instead of the band.	206	3.09	1.872
NAfME	I have been discriminated against at my band-teaching job.	102	2.27	1.504
	I have been treated unfairly by administrators while I was a band teacher.	102	2.25	1.551
	I feel like I'm not respected because I teach at the elementary or middle school levels.	101	3.14	1.631
	My ideas and opinions are often ignored by fellow band teachers.	99	2.55	1.599
	My ideas and opinions are often ignored by principals.	101	2.90	1.676
	I have been addressed in a less-than-professional way.	102	3.03	1.788
	I have been mistaken for teaching general music or choir instead of the band.	95	2.84	1.853

Organization	Perception Statement	N	M	SD
WBDI	I have been discriminated against at my band-teaching job.	114	3.04	1.719
	I have been treated unfairly by administrators while I was a band teacher.	114	2.96	1.726
	I feel like I'm not respected because I teach at the elementary or middle school levels.	109	3.32	1.604
	My ideas and opinions are often ignored by fellow band teachers.	108	2.81	1.613
	My ideas and opinions are often ignored by principals.	108	2.95	1.585
	I have been addressed in a less-than-professional way.	108	3.82	1.755
	I have been mistaken for teaching general music or choir instead of the band.	111	3.30	1.871

Table 4.11

Female Band Teachers' Perceptions toward the Experiences of Sexism in the Profession

Organization	Perception Statement	N	M	SD
Combined	I have heard demeaning remarks about myself and/or other females.	211	2.92	1.780
	I have earned less money than male teachers who teach the same level of the band.	213	2.31	1.528
	I have received less support than male band teachers.	210	3.00	1.707
	I have trouble finding a band job because I am a female.	201	2.35	1.483
	I have trouble keeping a band job because I am a female.	209	1.63	0.942
NAfME	I have heard demeaning remarks about myself and/or other females.	100	2.44	1.659
	I have earned less money than male teachers who teach the same level of the band.	100	2.14	1.363
	I have received less support than male band teachers.	100	2.61	1.543
	I have trouble finding a band job because I am a female.	96	2.11	1.375
	I have trouble keeping a band job because I am a female.	99	1.53	0.761

Organization	Perception Statement	N	M	SD
WBDI	I have heard demeaning remarks about myself and/or other females.	111	3.35	1.782
	I have earned less money than male teachers who teach the same level of the band.	113	2.45	1.653
	I have received less support than male band teachers.	110	3.36	1.775
	I have trouble finding a band job because I am a female.	105	2.56	1.55
	I have trouble keeping a band job because I am a female.	110	1.73	1.074

Table 4.12

Female Band Teachers' Perceptions Toward Sex Stereotypes as a Band Teacher in the

Profession

Organization	Perception Statement	N	M	SD
Combined	I was treated as if I am not competent.	210	2.71	1.729
	I have been turned down for teaching band during the hiring process.	210	2.93	1.851
	I have been misjudged by school/district administrators about my capabilities.	210	3.24	1.804
	I have needed to provide more evidence of my musicianship and competence than others.	215	2.94	1.796
	I have had my judgment questioned during my band teaching/rehearsal.	210	3.18	1.762
NAfME	I was treated as if I am not competent.	99	2.27	1.524
	I have been turned down for teaching band during the hiring process.	100	2.61	1.792
	I have been misjudged by school/district administrators about my capabilities.	99	2.94	1.800
	I have needed to provide more evidence of my musicianship and competence than others.	102	2.51	1.687
	I have had my judgment questioned during my band teaching/rehearsal.	100	2.80	1.752
WBDI	I was treated as if I am not competent.	111	3.11	1.811
	I have been turned down for teaching band during the hiring process.	110	3.22	1.864

Organization	Perception Statement	N	M	SD
	I have been misjudged by school/district administrators about my capabilities.	111	3.50	1.773
	I have needed to provide more evidence of my musicianship and competence than others.	113	3.33	1.810
	I have had my judgment questioned during my band teaching/rehearsal.	110	3.53	1.706

Table 4.13

Female Band Teachers' Perceptions toward Job Isolation as a Band Teacher in the

Profession

Organization	Perception Statement	N	M	SD
Combined	I have felt disconnected from other male band teachers at work.	209	3.04	1.779
	I have felt myself withdrawing from male attendees when attending instrumental conferences.	214	3.15	1.649
	I have felt alienated from my male colleagues.	211	3.00	1.646
	I have felt isolated in the school.	210	3.85	1.692
	I have felt isolated when teaching band.	215	3.74	1.670
NAfME	I have felt disconnected from other male band teachers at work.	99	2.42	1.667
	I have felt myself withdrawing from male attendees when attending instrumental conferences.	100	2.88	1.616
	I have felt alienated from my male colleagues.	100	2.53	1.534
	I have felt isolated in the school.	100	3.74	1.691
	I have felt isolated when teaching band.	101	3.70	1.653
WBDI	I have felt disconnected from other male band teachers at work.	110	3.60	1.698
	I have felt myself withdrawing from male attendees when attending instrumental conferences.	114	3.39	1.648
	I have felt alienated from my male colleagues.	111	3.43	1.633
	I have felt isolated in the school.	110	3.95	1.694
	I have felt isolated when teaching band.	114	3.78	1.692

Respondents ($N = 51$) shared their opinions of discrimination in the open-ended

questions based on their professional experiences. Twenty-one female band teachers

indicated "no discrimination" in their current working environment. The rest of the female band teachers reported that they experienced discrimination due to "homeschool program," "teaching at lower grades," "teaching music," and "age," although not every respondent thought "gender" was the only reason to result in discrimination. Common discrimination experience was "ignored" by administrators, principals, male colleagues, or students. Four respondents indicated they experienced sexism, including "unable to receive school support," "being turned down to teach band," or "looked very young," and being told they needed to dress in "masculine-looking clothing." Sex stereotyping happened in school and music events by principals, students, and judges. One female band teacher, who used to teach marching band in high school, reported that she was always assumed to be "the color guard instructor" by judges in marching band competitions, and two judges laughed at her during her band show. Another similar situation was reported, "I once had a judge write 'pretty good for a woman' on an adjudicator form." Several respondents said they were told they "wouldn't be able to handle the kids at a school." Most female band teachers mentioned isolation because they are the "only band director" at school or "the traveling teacher." One 5–12 band director pointed out she is "the only band director" in her school district, but she felt that she was "not always taken seriously among all band directors" she worked with, especially "many of the male high school only directors." These male high school directors never speak to this 5–12 female band director.

Research Question #2: How do female elementary and middle-level school band teachers' desires to raise a family affect their careers? (Survey Questions 19-1, 19-2, and 19-3).

Data for the family responsibilities interfering with their profession were collected from questions that asked female band teachers whether their careers were impacted by pregnancy and parenting. Marital status information was gathered and grouped participants into three groups: single, dating/in a relationship, and married (See Table 4.14). Respondents with children reported their opinions about the impact of pregnancy and parenting on their careers. Respondents who do not have children reported concerns about the impact of having children on their careers. Frequencies and percentages of female band teachers' children appear in Table 4.15. Means and standard deviations of female band teachers' perceptions of family responsibilities interfering with their profession appear in Tables 4.16 and 4.17, respectively.

Table 4.14

Female Band Teachers' Marital Status

Organization	Marital Status	*N*	%
Combined	Single	55	22.8
	Dating/In the relationship	13	5.4
	Married	147	61
	Missing	26	10.8
NAfME	Single	28	24.1
	Dating/In the relationship	4	3.4
	Married	70	60.3
	Missing	14	12.1
WBDI	Single	27	21.6

Organization	Marital Status	*N*	%
	Dating/In the relationship	9	7.2
	Married	77	61.6
	Missing	12	9.6

Table 4.15

Female Band Teachers' Children

Organization	Children	*N*	%
Combined	Yes	132	54.8
	No, but I want children one day	40	17
	No, and I do not want children	41	16.6
	Missing	28	11.6
NAfME	Yes	66	56.9
	No, but I want children one day	18	15.5
	No, and I do not want children	16	13.8
	Missing	16	13.8
WBDI	Yes	66	52.8
	No, but I want children one day	23	18.4
	No, and I do not want children	24	19.2
	Missing	12	9.6

Table 4.16

Perceptions of Female Band Teachers with Children

Organization	Question	*N*	*M*	*SD*
Combined	Has your work been affected by pregnancy?	132	3.68	1.809
	Has your work been affected by raising children?	132	4.43	1.489
NAfME	Has your work been affected by pregnancy?	66	3.35	1.844
	Has your work been affected by raising children?	66	4.15	1.481
WBDI	Has your work been affected by pregnancy?	66	4.02	1.723
	Has your work been affected by raising children?	66	4.71	1.455

Table 4.17

Perceptions of Female Band Teachers without Children

Organization	Question	N	M	SD
Combined	Do you have any concerns that having children will affect your job?	81	3.84	1.836
NAfME		35	3.49	1.721
WBDI		47	4.11	1.891

In open-ended questions, respondents ($N = 75$) shared their thoughts about the impact of pregnancy and parenting on the band teaching job. Most female band teachers who already have children reflected that raising children resulted in less time working with their band students. They had to reduce the "commitment" at school. Otherwise, they would not have "time" and "energy" to take care of their children. Those respondents with children provided five solutions, including "take several years off" from full-time work, "get a part-time job while raising children," find a "supportive" school or school district, collaborate with "a supportive husband," and "have children in the band program."

Several other respondents without children also expressed their concerns about having a "life-work balance" when they have children in the future. They reported two different opinions about childbirth and raising children. One opinion was "do not have children" because these female band teachers believed that children would occupy their "personal life" after a whole day of "exhausting" work. The other opinion is the opposite. They thought "life is a priority" and "family comes first."

Research Question #3: Who do female elementary and middle-level school band teachers look to as mentors and role models? (Survey Questions 22, 24, 29, and 31)

Information about mentors and role models in female band teachers' professional lives was divided into four categories: impactful mentor, impactful female mentor, role model, and female role model. The frequencies of female band teachers' mentors, female mentors, role models, and female role models appear in Tables 4.18, 4.19, 4.20, and 4.21, respectively.

Table 4.18

Female Band Teachers' Mentors

	Combined	NAfME	WBDI
Impactful Mentor	Frequency	Frequency	Frequency
Colleague	169	75	94
College Band Director	60	25	35
Private Lesson/Studio Teacher	36	23	13
Professor	54	31	23
Student Teaching Mentor Teacher	71	31	40
None	8	6	2
Other	37	12	25

Table 4.19

Female Band Teachers' Female Mentors

Impactful Female Mentor	Combined Frequency	NAfME Frequency	WBDI Frequency
Colleague	124	59	65
College Band Director	15	7	8
Private Lesson/Studio Teacher	21	14	7
Professor	33	20	13
Student Teaching Mentor Teacher	7	2	5
None	54	27	27
Other	33	8	25

Table 4.20

Female Band Teachers' Role Models

Impactful Role Model	Combined Frequency	NAfME Frequency	WBDI Frequency
Colleague	126	53	73
College Band Director	38	18	20
Professor	36	19	17
Private Lesson/Studio Teacher	18	13	5
Famous Musicians	10	6	4
None	33	23	10
Other	42	19	23

Table 4.21

Female Band Teachers' Female Role Models

Impactful Female Role Model	Combined Frequency	NAfME Frequency	WBDI Frequency
Colleague	101	42	59
College Band Director	17	5	12
Professor	20	11	9
Private Lesson/Studio Teacher	8	5	3
Famous Musicians	9	4	5
None	65	37	28
Other	20	6	14

Respondents ($N = 35$) reported other types of mentors, including the administrator, district band coordinator, former band director, high school band director, husband, mentor program teacher, other band directors, out-of-district colleagues, parents, principal, professional musicians, retired band director, and school secretary.

Respondents ($N = 33$) reported other types of female mentors, including former band directors, friends, high school assistants, high school band directors, mothers, out-of-district colleagues, professional musicians, retired band directors, student teachers, and cooperating teachers for student teaching.

Respondents ($N = 42$) reported other types of role models, including clinicians, conductors, friends, former teachers, high school band directors, the husband, mentor, middle school band director, mother, other school district teacher, principal, professional musician, retired colleagues, retired band director, and student teaching mentor.

Respondents (N = 20) reported other female role models: clinicians, high school band directors, friends, former teachers, middle school band directors, mothers, other school district teachers, retired band directors, and student teaching mentors.

Research Question #4: What is the importance of mentors and role models for female elementary and middle-level school band teachers? (Survey Questions 25, 26, 27, and 32)

The perspectives on the importance of mentors and role models information were gathered and divided into four categories: (1) perception toward the importance of mentors on female band teachers' successful career; (2) perceptions toward the importance of role models on female band teachers' successful career; (3) perceptions toward the different attributes of mentors; (4) perceptions toward the features of a successful mentor. Mean, median and standard deviations appear in Table 4.22, 4.23, 4.24, and 4.25, respectively.

Table 4.22

Female Band Teachers' Perception of the Importance of the Mentors

Organization	N	Mean	Median	*SD*	Min	Max	Missing
Combined	213	4.90	5.00	1.449	1	6	28
NAfME	100	4.65	5.00	1.572	1	6	16
WBDI	113	5.12	5.00	1.297	1	6	12

Table 4.23

Female Band Teachers' Perception of the Importance of Role Models

Organization	*N*	Mean	Median	*SD*	Min	Max	Missing
Combined	203	4.45	5.00	1.674	1	6	38
NAfME	94	4.19	5.00	1.712	1	6	22
WBDI	109	4.67	5.00	1.616	1	6	16

Table 4.24

Female Band Teachers' Perceptions of the Attributes of Mentors

Organization	Attribute	N	Mean	Median	SD	Min	Max	Missing
Combined	Knowledgeable	212	5.67	6	0.611	1	6	29
	Personality	203	5.47	6	0.733	1	6	38
	Experience	212	5.04	5	0.935	1	6	29
	Reputation	205	4.65	5	1.230	1	6	36
	Achievements	206	4.43	4	1.037	1	6	35
	Gender	209	2.81	3	1.520	1	6	32
NAfME	Knowledgeable	100	5.75	6	0.458	4	6	16
	Personality	98	5.47	6	0.692	3	6	18
	Experience	100	5.17	5	0.877	3	6	16
	Reputation	100	4.59	5	1.296	2	6	16
	Achievements	97	4.27	4	1.066	1	6	19
	Gender	100	2.52	2	1.425	1	6	16
WBDI	Knowledgeable	112	5.60	6	0.716	1	6	13
	Personality	105	5.48	6	0.773	1	6	20
	Experience	112	4.93	5	0.975	1	6	13
	Reputation	105	4.70	5	1.168	1	6	20
	Achievements	109	4.57	5	0.994	1	6	16
	Gender	109	3.07	3	1.562	1	6	16

Table 4.25

Female Band Teachers' Perceptions of the Features of Successful Mentors

Organization	Feature	N	Mean	Median	SD	Min	Max	Missing
Combined	Demonstrated passion	203	5.51	6	0.798	1	6	38
	Provided meaningful feedback	203	5.46	6	0.810	1	6	38
	Provided constructive feedback	205	5.40	6	0.877	1	6	36
	Availability for discussion	201	5.40	6	0.861	1	6	40
	Invested in the mentor/mentee relationship	200	5.24	5	0.919	1	6	41
	Evidence of success in the field	199	5.16	5	1.025	1	6	42
NAfME	Demonstrated passion	97	5.44	6	0.803	2	6	19
	Provided meaningful feedback	96	5.41	6	0.865	2	6	20
	Provided constructive feedback	98	5.36	6	0.933	1	6	18
	Availability for discussion	98	5.31	6	0.924	2	6	18
	Invested in the mentor/mentee relationship	98	5.14	5	0.984	1	6	18
	Evidence of success in the field	94	5.11	5	1.031	2	6	22

Organization	Feature	N	Mean	Median	SD	Min	Max	Missing
WBDI	Demonstrated passion	106	5.58	6	0.792	1	6	19
	Provided meaningful feedback	107	5.51	6	0.757	1	6	18
	Availability for discussion	103	5.49	6	0.790	1	6	22
	Provided constructive feedback	107	5.43	6	0.825	1	6	18
	Invested in the mentor/mentee relationship	102	5.32	5	0.846	1	6	23
	Evidence of success in the field	105	5.20	5	1.023	1	6	20

Research Question #5: Do these female elementary and middle-level school band teachers consider changing to teaching at a higher level? Why or why not? (Survey Questions 12, 13, and 14)

The respondents' perspectives on changing to teaching at high school or college were collected into two categories: (1) preferences toward teaching high school; (2) preferences toward teaching college. Mean, median and standard deviations about the female band teachers' preferences for teaching high school and college appear in Tables 4.26 and 4.27, respectively. To a varying degree, 45.7% of NAfME and 48% of WBDI band teachers indicated their interest in teaching high school, and 23.3% of NAfME and 37.6% of WBDI indicated their interest in teaching college.

Table 4.26

Female Band Teachers' Preferences toward Teaching High School

Organization	*N*	Mean	Median	*SD*	Min	Max	Missing
Combined	226	3.41	3.50	1.909	1	6	15
NAfME	108	3.43	3.00	1.890	1	6	8
WBDI	118	3.40	4.00	1.922	1	6	7

Table 4.27

Female Band Teachers' Preferences toward Teaching College

Organization	*N*	Mean	Median	*SD*	Min	Max	Missing
Combined	227	2.79	2.00	1.677	1	6	14
NAfME	108	2.61	2.00	1.679	1	6	8
WBDI	119	2.95	2.00	1.666	1	6	6

In the open-ended question, respondents (*N* = 205) commented on the reasons for their preferred teaching levels. Those respondents who indicated preferred teaching in the elementary or middle school explained that "students in the elementary band provide the foundation for our middle and high school bands." Female band teachers reported the enjoyment of teaching in the elementary or middle school, including "enjoy teaching beginning students," "enjoy teaching middle school band," "enjoy the age group," "love teaching kids/younger students," and "love seeing growth/progress." They described their elementary or middle school band teaching as "a rewarding job." Some female elementary or middle school band teachers mentioned that the "schedule" of their current positions gave them more "personal time" for family and life and "fit" for their "personality," "skills," and "musical ability."

Regarding teaching high school, female band teachers had various opinions. Most respondents shared reasons for less interest in teaching high school that included "trips," "extra commitments," "marching band, performance, and fundraising pressure." One female band teacher who had long years of high school band teaching experience wrote, "Screw the traveling, paperwork, and ancillary crap. … I enjoy less time in a band room for too little return." On the contrary, some other respondents who preferred to teach high school indicated they enjoy or have "success with high school-aged students." A few respondents expressed their intent to teach collegiate level if they could pursue a doctoral degree in the future because they desired to earn a higher paycheck.

Research Question #6: Do female band teachers' age, levels of teaching, and level of education influence perceptions of discrimination, sexism, sex stereotypes, and job isolation? (Survey Questions 3, 7, 9, and 15 – 22 items)

A three-way multivariate analysis of variance (MANOVA) was conducted to investigate if there was a significant difference in female band teachers' perceptions as measured by discrimination, sexism, sex stereotypes, and job isolation scales based on age, levels of teaching, and level of education they reported. The groups of participants' age were divided into 21–30, 31–40, 41–50, and above 50. The groups of participants' levels of teaching were divided into "elementary only," "middle school only," "combined elementary and middle school," "combined middle and high school," and "combined elementary, middle, and high school." The groups of participants' level of education were divided into undergraduate (bachelor's degree) and graduate (collapsed master's and doctoral degrees). Since the valid responses of female band teachers from NAfME ($N =$

116) and WBDI ($N = 125$) had consistent means and standard deviations in the 22 Likert-type scales of discrimination, sexism, sex stereotypes, and job isolation (See Table 4.10, 4.11, 4.12, 4.13), the data from the two associations were combined for parametric analysis.

Sub-research Question #6-1: Are there significant mean differences in the female band teachers' perceptions of discrimination by age? (Survey Questions 3 & 15 – 7 items)

The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of discrimination by age.

For the one-way MANOVA, preliminary assumption testing was conducted. Univariate outliers were assessed and found by examination of the boxplot within the Discrimination Scales (See Figure 4.1). The outliers of Case ID Number were displayed in Figure 4.1. Outliers are data points in a data set that lie far away from the rest of the points in the data set (Huck, 2012). Shapiro-Wilks for each level of the "age" group (IVs) for each Discrimination item (DVs) found that the assumption of normality was violated ($p > .05$). However, the MANOVA is reasonably robust to modest violations of normality when the sample size is at least 20 in each cell (Tabacknick & Fidell, 2019, p. 210). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of Mahalanobis distance of Discriminate Scales was 20.170, which was not exceeded. This assumption of multivariate outliers was tenable. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation

111

coefficient was less than .9. Therefore, multicollinearity was not a concern (Tabacknick

& Fidell, 2019). The assumption of the homogeneity of variance-covariance of

Discrimination Scales was tenable based on the results of the Box's test $M = 116.389$, F

$(84, 69325.582) = 1.288$, $p = .039$. The results of Levene's test of equality of error

provided evidence that the assumption of homogeneity of variance across groups for

seven Discrimination statements were $F (3, 180) = 1.580$, $p = .196$; $F (3, 180) = 3.716$, p

$= .013$; $F (3, 180) = .215$, $p = .886$; $F (3, 180) = .055$, $p = .983$; $F (3, 180) = 1.056$, p

$= .369$; $F (3, 180) = .589$, $p = .623$; and $F (3, 180) = 5.200$, $p = .002$, respectively. Two

statements: "I have been treated unfairly by administrators while I was a band teacher"

and "I have been mistaken for teaching general music or choir instead of the band," did

not meet the assumption of homogeneity.

Figure 4.1

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Discrimination

and Univariate Outliers within Discrimination by Age

Since the assumptions were not fulfilled, Pillai's Trace was utilized when

interpreting the MANOVA results. Pillai's Trace is a more robust multivariate analysis

when the assumptions of homogeneity and equal variance are violated (Huck, 2012;

Mertler & Vannatta, 2002; Tabacknick & Fidell, 2019). A one-way MANOVA was

utilized for the remaining seven Discrimination statements. A Bonferroni adjustment resulted in an alpha level of $p = .007$ for Discrimination Scales. The MANOVA indicated no significant difference in perceptions of Discrimination statements by age. Therefore, the null hypothesis, that there were no significant differences in female band teachers' perceptions of discrimination by age, failed to be rejected.

However, when univariate outliers ($n = 9$), which were higher in value than the majority of the data points, were excluded, the MANOVA results indicated a significant difference in perceptions of Discrimination statements by age. Therefore, the null hypothesis, that there are no significant differences in female band teachers' perceptions of discrimination by age, was rejected when univariate outliers ($n = 9$) were removed from the data set.

Post hoc comparisons were conducted to evaluate pairwise differences among "age" groups' means. Scheffé would interpret the most post hoc comparisons instead of Tukey regarding unequal sample size in each "age" group level. However, two statements: "I have been treated unfairly by administrators while I was a band teacher" and "I have been mistaken for teaching general music or choir instead of the band," do not meet the assumption of homogeneity. Because of unequal variances within these two statements, post hoc Games-Howell (Dunnet, 1980; Rusticus & Lovato, 2014) was applied to interpret the results of the pairwise differences comparisons.

When univariate outliers ($n = 9$), which were higher in value than the majority of the data points, were excluded, results from ANOVA indicated significant mean differences by age group for the Discrimination statement "I have been discriminated against at my band-teaching job," $F(3, 14.162) = 5.783$, $p < .001$. Post hoc Scheffé

results showed, at the $p = .007$ level, female band teachers age 21–30 ($M = 3.02$, $SD = 1.785$) had significantly higher means than female band teachers above age 50 ($M = 1.73$, $SD = 1.116$) (See Appendix E, *Female Band Teachers' Perceptions toward Discrimination by Age without Outliers*).

When univariate outliers ($n = 9$), which were higher in value than the majority of the data points, were excluded, results from ANOVA indicated significant mean differences by age group for the Discrimination statement "I have been treated unfairly by administrators while I was a band teacher," $F (3, 19.205) = 8.468$, $p < .001$. Post hoc Games-Howell results showed, at the $p = .007$ level, female band teachers age 21–30 ($M = 2.89$, $SD = 1.781$), age 31–40 ($M = 2.76$, $SD = 1.786$) and age 41–50 ($M = 2.74$, $SD = 1.512$) had significantly higher means than female band teachers whose age above 50 ($M = 1.49$, $SD = .727$) (See Appendix E, *Female Band Teachers' Perceptions toward Discrimination by Age without Outliers*).

When univariate outliers ($n = 9$), which were higher in value than the majority of the data points, were excluded, results from ANOVA indicated significant mean differences by age group for the Discrimination statement "I have been addressed in a less-than-professional way," $F (3, 21.782) = 7.528$, $p < .001$. Post hoc Scheffé results showed, at the $p = .007$ level, female band teachers whose age 21–30 ($M = 3.75$, $SD = 1.806$) and age 31–40 ($M = 3.90$, $SD = 1.700$) had significantly higher means than female band teachers whose age above 50 ($M = 2.36$, $SD = 1.433$) (See Appendix E, *Female Band Teachers' Perceptions toward Discrimination by Age without Outliers*).

Sub-research Question #6-2: Are there significant mean differences in the female band teachers' perceptions of discrimination by levels of teaching? (Survey Questions 7 & 15 – 7 items)
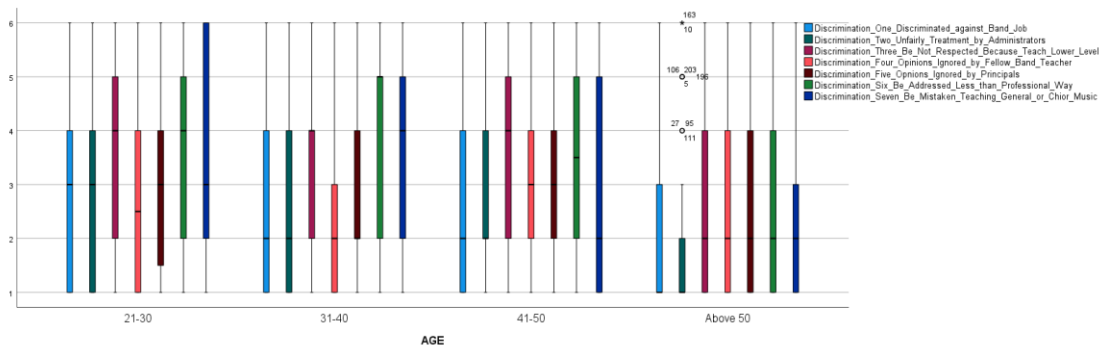
The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of discrimination by levels of teaching.

For the one-way MANOVA, preliminary assumption testing was conducted. There were no univariate outliers as assessed by examination of the boxplot within the Discrimination Scales (See Figure 4.2). Shapiro-Wilks for each level of the "levels of teaching" group (IVs) for each Discrimination item (DVs) found that the assumption of normality was violated ($p > .05$). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of Mahalanobis distance of Discriminate Scales was 20.186, which was not exceeded. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient was less than .9. The assumption of the homogeneity of variance-covariance of Discrimination Scales was tenable based on the results of the Box's test $M = 169.502$, $F (112, 18246.065) = 1.350$, $p = .008$. The results of Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for seven Discrimination statements were $F (2, 182) = 1.746$, $p = .177$; $F (2, 182) = 5.255$, $p = .006$; $F (2, 182) = .1.967$, $p = .143$; $F (2, 182) = .030$, $p = 3.590$; $F (2, 182) = .958$, $p = .386$; $F (2, 182) = 2.305$, $p = .103$; and $F (2, 182) = 2.796$, $p = .064$, respectively. All statements met the assumption of homogeneity.

115

Figure 4.2

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Discrimination

and Univariate Outliers within Discrimination by Levels of teaching

Since the assumptions were not fulfilled, Pillai's Trace was utilized when interpreting the MANOVA results. A one-way MANOVA was utilized for the remaining seven Discrimination statements. A Bonferroni adjustment resulted in an alpha level of $p = .007$ for Discrimination Scales. The MANOVA indicated no significant difference in perceptions of Discrimination statements by levels of teaching. Therefore, the null hypothesis, that there are no significant differences in female band teachers' perceptions of discrimination by levels of teaching, failed to be rejected.

Sub-research Question #6-3: Are there significant mean differences in the female band teachers' perceptions of discrimination by level of education? (Survey Questions 9 & 15 – 7 items)

The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of discrimination by level of education.

116

For the one-way MANOVA, preliminary assumption testing was conducted. There were no univariate outliers as assessed by examination of the boxplot within the Discrimination Scales (See Figure 4.3). Shapiro-Wilks for each level of the "levels of education" group (IVs) for each Discrimination item (DVs) found that the assumption of normality was violated ($p > .05$). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of Mahalanobis distance of Discriminate Scales was 20.186, which was not exceeded. This assumption of multivariate outliers was tenable. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient is less than .9. The assumption of the homogeneity of variance-covariance of Discrimination Scales was tenable based on the results of the Box's test $M = 26.591$, $F (28, 48472.215) = .903$, $p = .612$. The results of Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for seven Discrimination statements are $F (1, 183) = 2.817$, $p = .095$; $F (1, 183) = 6.619$, $p = .011$; $F (1, 183) = .499$, $p = .481$; $F (1, 183) = .381$, $p = .538$; $F (1, 183) = .157$, $p = .693$; $F (1, 183) = .665$, $p = .416$; and $F (1, 183) = 4.480$, $p = .036$, respectively. Two statements did not meet the assumption of homogeneity: "I have been treated unfairly by administrators while I was a band teacher" and "I have been mistaken for teaching general music or choir instead of the band."

Figure 4.3

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Discrimination

and Univariate Outliers within Discrimination by Level of Education
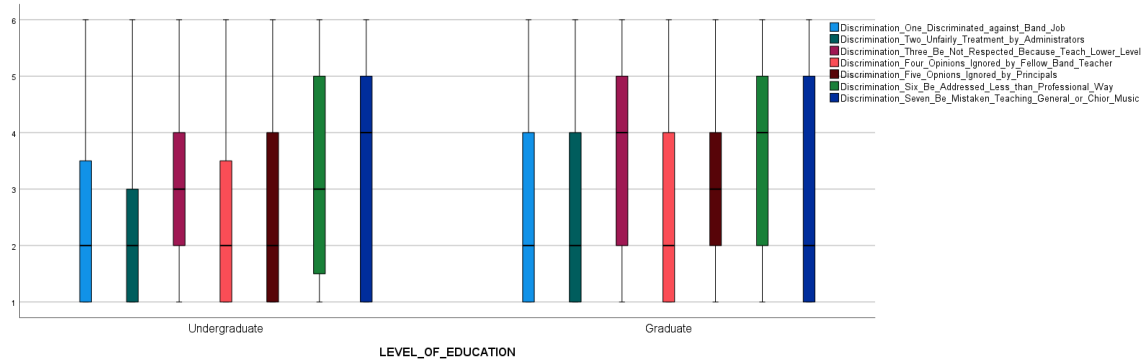
Since the assumptions were not fulfilled, Pillai's Trace was utilized when interpreting the MANOVA results. A one-way MANOVA was utilized for the remaining seven Discrimination statements. A Bonferroni adjustment yielded an alpha level of $p = .007$ for Discrimination Scales. The MANOVA indicated no significant difference in perceptions of Discrimination statements by level of education. Therefore, the null hypothesis, that there are no significant differences in female band teachers' perceptions of discrimination by level of education, failed to be rejected.

Sub-research Question #6-4: Is there a significant interaction among age, levels of teaching, and level of education on female band teachers' perceptions of discrimination? (Survey Questions 3, 7, 9 & 15 – 7 items)

The null hypothesis was:

H_0 = There is no significant interaction among age, levels of teaching, and level of education on female band teachers' perceptions of discrimination.

A three-way MANOVA was conducted to determine the effects of age, levels of teaching, and level of education on responses to statements measuring female band teachers' perception of discrimination. The assumption of the homogeneity of variance-covariance of Discrimination Scales was tenable based on the results of the Box's test $M = 298.411$, F (196, 5754.741) = 1.020, $p = .411$. However, Shapiro-Wilks for each level of "age," "levels of teaching," and "level of education" group (IVs) for each Discrimination item (DVs) found that the assumption of normality was violated ($p > .05$). Therefore, F test for Pillai's Trace was utilized for analysis. MANOVA results indicated no significant differences in responses among age, levels of teaching, or level of education and no significant interaction among the independent variables (Table 4.28). Therefore, the null hypothesis, that there is no significant interaction among age, levels of teaching, and level of education on female band teachers' perceptions of discrimination, failed to be rejected.

Table 4.28

MANOVA *Results for Statements Measuring Female Band Teachers' Perceptions of Discrimination by Age, Levels of Teaching, and Level of Education*

	Pillai's Trace	F	df	Error df	Sig
Age	.252	1.373	28	572	.098
Levels of Teaching	.234	1.270	28	572	.162
Level of Education	.093	2.040	7	140	.054
Age*Levels of Teaching	.458	.851	84	1022	.825
Age*Level of Education	.166	1.187	21	426	.258
Levels of Teaching*Level of Education	.247	1.345	28	572	.112
Age*Levels of Teaching*Level of Education	.356	.782	70	1022	.905

Sub-research Question #6-5: Are there significant mean differences in the female band teachers' perceptions of sexism by age? (Survey Questions 3 & 15 – 5 items)

The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of sexism by age.

For the one-way MANOVA, preliminary assumption testing was conducted. Univariate outliers were assessed and found by examining the boxplot within the Sexism Scales (See Figure 4.4). The outliers of Case ID Number were displayed in Figure 4.4. Outliers are data points in a data set that lie far away from the rest of the points in the data set (Huck, 2012). Shapiro-Wilks for each level of "age" group (IVs) for each Sexism item (DVs) indicated that the assumption of normality was violated ($p > .05$). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of Mahalanobis distance of Sexism Scales was 27.003, which was exceeded. This assumption of multivariate outliers was not tenable. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient is less than .9. Therefore, multicollinearity is not a concern (Tabacknick & Fidell, 2019). The assumption of the homogeneity of variance-covariance of Sexism Scales was not tenable based on the results of the Box's test $M = 113.603$, F (45, 85439.509) = 2.402, $p < .001$. The results of Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for five Sexism statements are F (3, 186) = 3.345, $p = .020$; F (3, 186) = 1.880, $p = .134$; F (3, 186) = 1.096, $p = .352$; F (3, 186) = 8.319, $p < .001$; and F (3, 186) = 3.377, $p = .020$,

respectively. Two statements met the assumption of homogeneity, "I have earned less money than male teachers who teach the same level of the band" and "I have received less support than male band teachers."

Figure 4.4

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Sexism and Univariate Outliers within Sexism by Age
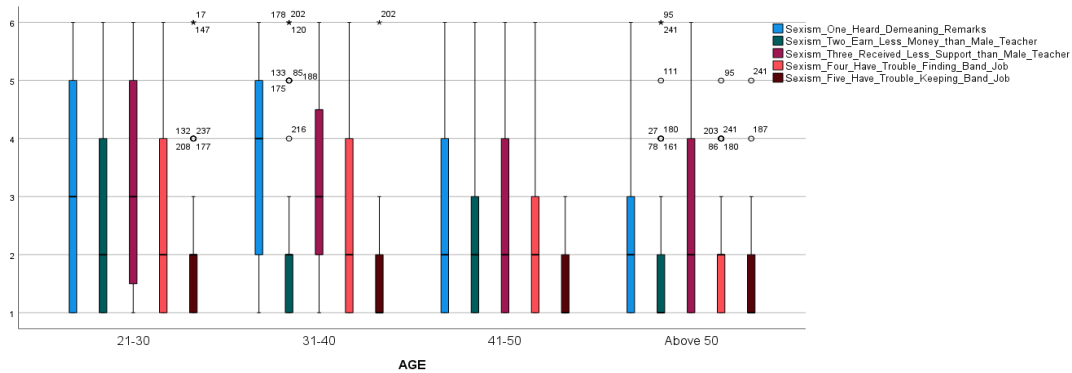
Since the assumptions were not fulfilled, Pillai's Trace was utilized when interpreting the MANOVA results. Pillai's Trace is a more robust multivariate analysis when the assumptions of homogeneity and equal variance are violated (Huck, 2012; Mertler & Vannatta, 2002; Tabacknick & Fidell, 2019). A one-way MANOVA was utilized for the remaining five Sexism statements. A Bonferroni adjustment resulted in an alpha level of $p = .01$ for Sexism. The MANOVA indicated no significant difference among age groups' perceptions of Sexism statements. Therefore, the null hypothesis, that there are no significant differences in female band teachers' perceptions of sexism by age, failed to be rejected.

However, when univariate outliers ($n = 25$), which were higher in value than the majority of the data points, were excluded, the MANOVA results indicated a significant

121

difference in perceptions of Sexism statements by age. Therefore, the null hypothesis, that there are no significant differences in female band teachers' perceptions of sexism by age, was rejected when univariate outliers ($n = 25$) were removed from the data set.

When univariate outliers ($n = 25$), which were higher in value than the majority of the data points, were excluded, the MANOVA indicated significant mean differences in perceptions of Sexism statements among age groups. Post hoc comparisons were conducted to evaluate pairwise differences among "age" groups' means. Because of the unequal sample size in each age group, Scheffé was utilized to interpret the most post hoc comparisons instead of Tukey. Results from ANOVA indicated significant mean differences by female band teachers' age group for the Sexism statement "I have earned less money than male teachers who teach the same level of the band," F (3, 16.795) = 11.112, $p < .001$. Post hoc Scheffé results showed, at the $p = .01$ level, female band teachers ages 21–30 ($M = 2.85$, $SD = 1.733$) had significantly higher means than female band teachers whose ages 31–40 ($M = 1.75$, $SD = 1.056$) and above 50 ($M = 1.41$, $SD = .595$) (See Appendix E, *Female Band Teachers' Perceptions toward Sexism by Age without Outliers*).

Sub-research Question #6-6: Are there significant mean differences in the female band teachers' perceptions of sexism by levels of teaching? (Survey Questions 7 & 15 – 5 items)

The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of sexism by levels of teaching.

For the one-way MANOVA, preliminary assumption testing was conducted. Univariate outliers were assessed and found by examining the boxplot within the Sexism Scales (See Figure 4.5). The outliers of Case ID Number were displayed in Figure 4.5. Outliers are data points in a data set that lie far away from the rest of the points in the data set (Huck, 2012). Shapiro-Wilks for each level of "levels of teaching" group (IVs) for each Sexism item (DVs) indicated that the assumption of normality was violated ($p > .05$). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of Mahalanobis distance of Sexism Scales is 27.151, which was exceeded. This assumption of multivariate outliers was not tenable. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient is less than .9. Therefore, multicollinearity is not a concern (Tabacknick & Fidell, 2019). The assumption of the homogeneity of variance-covariance of Sexism Scales was not tenable based on the results of the Box's test $M = 108.261$, $F (60, 17064.865) = 1.664$, $p < .001$. The results of Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for five Sexism statements are $F (2, 188) = 3.489$, $p = .033$; $F (2, 188) = 3.927$, $p = .021$; $F (2, 188) = 1.386$, $p = .253$; $F (2, 188) = .444$, $p = .642$; and $F (2, 188) = .005$, $p = .995$, respectively. Two statements did not meet the assumption of homogeneity: "I have heard demeaning remarks about myself and/or other females" and "I have earned less money than male teachers who teach the same level of the band."

Figure 4.5

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Sexism and

Univariate Outliers within Sexism by Levels of Teaching
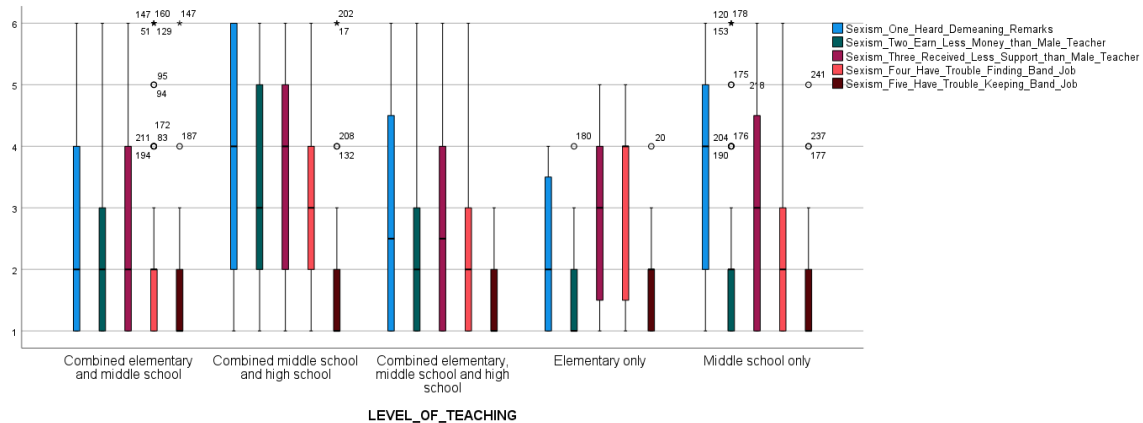
Since the assumptions were not fulfilled, Pillai's Trace was utilized when

interpreting the MANOVA results. Pillai's Trace is a more robust multivariate analysis

when the assumptions of homogeneity and equal variance are violated (Huck, 2012;

Mertler & Vannatta, 2002; Tabacknick & Fidell, 2019). A one-way MANOVA was

utilized for the remaining five Sexism statements. A Bonferroni adjustment yielded an

alpha level of $p = .01$ for Sexism. The MANOVA results indicated a significant

difference in perceptions of Sexism by the levels of teaching. Therefore, the null

hypothesis, that there are no significant differences in female band teachers' perceptions

of sexism by levels of teaching, was rejected.

The MANOVA results indicated significant mean differences in perceptions of

Sexism statements among the levels of teaching groups. Post hoc comparisons were

conducted to evaluate pairwise differences among "levels of teaching" groups' means.

Regarding unequal sample size in each level of the "levels of teaching" group, Scheffé

was utilized to interpret the most post hoc comparisons instead of Tukey. However, the

statements, "I have heard demeaning remarks about myself and/or other females" and "I have earned less money than male teachers who teach the same level of the band," did not meet the assumption of homogeneity. Because of unequal variances within these two statements, post hoc Games-Howell (Dunnet, 1980; Rusticus & Lovato, 2014) was applied to interpret the results of the pairwise differences comparisons.

Results from ANOVA indicated significant mean differences by female band teachers' levels of teaching group for the Sexism statement "I have heard demeaning remarks about myself and/or other females," $F (4, 12.569) = 4.219$, $p = .003$. Post hoc Games-Howell results showed, at the $p = .01$ level, female band teachers who were teaching in combined middle school only ($M = 3.41$, $SD = 1.753$) had significantly higher means than female band teachers who were teaching in combined elementary and middle school ($M = 2.33$, $SD = 1.605$) (See Appendix E, *Female Band Teachers' Perceptions toward Sexism by Levels of teaching with Outliers*). When univariate outliers ($n = 28$), which were higher in value than the majority of the data points, were excluded, results from ANOVA indicated significant mean differences by female band teachers' levels of teaching group for the Sexism statement "I have heard demeaning remarks about myself and/or other females," $F (4, 10.986) = 3.965$, $p = .004$. Female band teachers who were teaching in middle school only ($M = 3.19$, $SD = 1.758$) maintained significantly higher means than female band teachers who were teaching in combined elementary and middle school ($M = 2.02$, $SD = 1.351$) (See Appendix E, *Female Band Teachers' Perceptions toward Sexism by Levels of teaching without Outliers*).

Results from ANOVA indicated significant mean differences by female band teachers' levels of teaching group for the Sexism statement, "I have earned less money

than male teachers who teach the same level of the band," $F(4, 10.087) = 4.519$, p

$= .002$. Post hoc Games-Howell results showed, at the $p = .01$ level, female band teachers

teaching in combined middle school and high school ($M = 3.34$, $SD = 1.895$) had

significantly higher means than female band teachers teaching in elementary school only

($M = 1.67$, $SD = .900$) (See Appendix E, *Female Band Teachers' Perceptions toward*

Sexism by Levels of teaching with Outliers). Further, when univariate outliers ($n = 28$),

which were higher in value than the majority of the data points, were removed, with post

hoc Games-Howell results added, at the $p = .01$ level, female band teachers whose

teaching in combined middle school and high school ($M = 3.16$, $SD = 1.864$) had

significantly higher means than female band teachers whose teaching in middle school

only ($M = 1.58$, $SD = .767$) (See Appendix E, *Female Band Teachers' Perceptions*

toward Sexism by Levels of teaching without Outliers).

Sub-research Question #6-7: Are there significant mean differences in the female

band teachers' perceptions of sexism by level of education? (Survey Questions 9 &

15 – 5 items)

The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of

sexism by level of education.

For the one-way MANOVA, preliminary assumption testing was conducted.

Univariate outliers were assessed and found by examining the boxplot within the Sexism

Scales (See Figure 4.6). The outliers of Case ID Number were displayed in Figure 4.6.

Outliers are data points in a data set that lie far away from the rest of the points in the

data set (Huck, 2012). Shapiro-Wilks for each level of "levels of education" group (IVs)

for each Sexism item (DVs) found that the assumption of normality was violated

($p > .05$). Mahalanobis distance measure was used to assess multivariate outliers for each

case. The maximum value of Mahalanobis distance of Sexism Scales is 27.151, which

was exceeded. This assumption of multivariate outliers was not tenable. Inspection of the

correlation coefficients among the dependent variables was significant ($p < .001$);

therefore, the assumptions of linearity were satisfactory. Also, each correlation

coefficient was less than .9. Therefore, multicollinearity was not a concern (Tabacknick

& Fidell, 2019). The assumption of the homogeneity of variance-covariance of Sexism

Scales was tenable based on the results of the Box's test $M = 15.703$, $F (15, 61242.159) =$

1.011, $p = .439$. The results of Levene's test of equality of error provided evidence that

the assumption of homogeneity of variance across groups for five Sexism statements

were $F (1, 189) = .837$, $p = .361$; $F (1, 189) = .190$, $p = .663$; $F (1, 189) = .503$, $p = .479$;

$F (1, 189) = .012$, $p = .914$; and $F (1, 189) = .219$, $p = .640$, respectively. All statements

met the assumption of homogeneity.

Figure 4.6

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Sexism and

Univariate Outliers within Sexism by Level of Education

Since the assumptions were not fulfilled, Pillai's Trace was utilized when interpreting the MANOVA results. Pillai's Trace is a more robust multivariate analysis when the assumptions of homogeneity and equal variance are violated (Huck, 2012; Mertler & Vannatta, 2002; Tabacknick & Fidell, 2019). A one-way MANOVA was utilized for the remaining five Sexism statements. A Bonferroni adjustment yielded an alpha level of $p = .01$ for Sexism. The MANOVA indicated no significant difference among the level of education groups' perceptions of Sexism statements. Therefore, the null hypothesis, that there are no significant differences in female band teachers' perceptions of sexism by level of education, failed to be rejected.

Sub-research Question #6-8: Is there a significant interaction among age, levels of teaching, and level of education on female band teachers' perceptions of sexism? (Survey Questions 3, 7, 9 & 15 – 5 items)

The null hypothesis was:

H_0 = There is no significant interaction among age, levels of teaching, and level of education on female band teachers' perceptions of sexism.

A three-way MANOVA was conducted to determine the effects of age, levels of teaching, and level of education on responses to statements measuring female band teachers' perception of sexism. However, Shapiro-Wilks for each level of "age," "levels of teaching," and "level of education" group (IVs) for each Sexism item (DVs) found that the assumption of normality was violated ($p > .05$). The assumption of the homogeneity of variance-covariance of Sexism Scales was not tenable based on the results of the Box's test $M = 371.459$, $F (165, 5531.016) = 1.642$, $p < .001$. Therefore, the F test for Pillai's Trace was utilized for analysis. MANOVA results indicated no significant differences in

128

responses among age and level of education and no significant interaction among the independent variables (Table 4.29). Therefore, the null hypothesis, that there is no significant interaction among age, levels of teaching, and level of education on female band teachers' perceptions of sexism, failed to be rejected.

Table 4.29

MANOVA Results for Statements Measuring Female Band Teachers' Perceptions of Sexism by Age, Levels of Teaching, and Level of Education

	Pillai's Trace	F	df	Error df	Sig
Age	.136	1.280	20	604	.185
Levels of Teaching	.191	1.513	20	604	.070
Level of Education	.019	.577	5	148	.718
Age*Levels of Teaching	.289	.777	60	760	.891
Age*Level of Education	.029	.295	15	450	.996
Levels of Teaching*Level of Education	.070	.541	20	604	.949
Age*Levels of Teaching*Level of Education	.301	.974	50	760	.527

Sub-research Question #6-9: Are there significant mean differences in the female band teachers' perceptions of sex stereotypes by age? (Survey Questions 3 & 15 – 5 items)
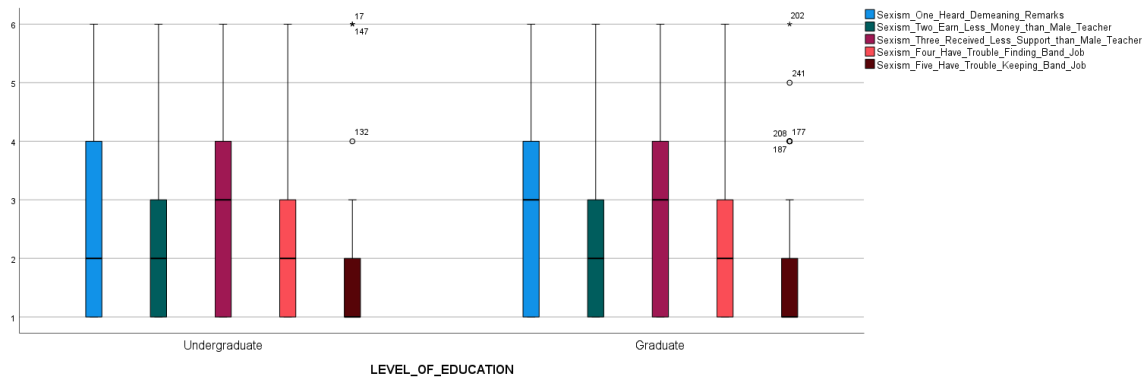
The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of sex stereotypes by age.

For the one-way MANOVA, preliminary assumption testing was conducted. There were no univariate outliers as assessed by examination of the boxplot within Sex Stereotypes Scales (See Figure 4.7). Shapiro-Wilks for each level of "age" group (IVs) for each Sex Stereotypes item (DVs) indicated that the assumption of normality was

violated ($p > .05$). Mahalanobis distance measure was used to assess multivariate outliers

for each case. The maximum value of the Mahalanobis distance of Sex Stereotypes

Scales was 18.273, which was not exceeded. This assumption of multivariate outliers was

tenable. Inspection of the correlation coefficients among the dependent variables was

significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each

correlation coefficient was less than .9. Therefore, multicollinearity was not a concern

(Tabacknick & Fidell, 2019). The assumption of the homogeneity of variance-covariance

of Sex Stereotypes Scales was tenable based on the results of the Box's test $M = 65.985$,

$F (45, 92281.605) = 1.398$, $p = .040$. The results of Levene's test of equality of error

provided evidence that the assumption of homogeneity of variance across groups for five

Sex Stereotypes statements were $F (3, 194) = 5.709$, $p < .001$; $F (3, 194) = 7.092$, p

$< .001$; $F (3, 194) = .300$, $p = .825$; $F (3, 194) = .856$, $p = .465$; and $F (3, 194) = 1.971$, p

$= .120$, respectively. Two statements did not meet the assumption of homogeneity: "I was

treated as if I am not competent" and "I have been turned down for teaching band during

the hiring process."

Figure 4.7

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Sex Stereotypes

and Univariate Outliers within Sex Stereotypes by Age

Since the assumptions were not fulfilled, Pillai's Trace was utilized when interpreting the MANOVA results. Pillai's Trace is a more robust multivariate analysis when the assumptions of homogeneity and equal variance are violated (Huck, 2012; Mertler & Vannatta, 2002; Tabacknick & Fidell, 2019). A one-way MANOVA was utilized for the remaining five Sex Stereotypes statements. A Bonferroni adjustment yielded an alpha level of $p = .01$ for Sex Stereotypes. The MANOVA indicated significant differences in perceptions of Sex Stereotypes statements by age. Therefore, the null hypothesis, that There are no significant differences in female band teachers' perceptions of sex stereotypes by age, was rejected.

The MANOVA indicated significant mean differences in perceptions of Sex Stereotypes statements among age groups. Post hoc comparisons were conducted to evaluate pairwise differences among "age" groups' means. Regarding unequal sample size in each "age" group level, Scheffé was utilized to interpret the most post hoc comparisons instead of Tukey. However, two Sex Stereotypes statements did not meet the assumption of homogeneity of variance: "I was treated as if I am not competent," and "I have been turned down for teaching band during the hiring process." Because of unequal variances within these two statements, post hoc Games-Howell (Dunnet, 1980; Rusticus & Lovato, 2014) was applied to interpret the results of the pairwise differences comparisons.

Results from ANOVA indicated significant mean differences by female band teachers' age group for the Sex Stereotypes statement, "I was treated as if I am not competent," $F (3, 13.418) = 4.800$, $p = .003$. Post hoc Games-Howell results showed, at the $p = .01$ level, female band teachers in the 21–30 age group ($M = 3.21$, $SD = 1.977$)

had significantly higher means than female band teachers in the Above 50 group ($M = 2.06$, $SD = 1.420$).

Results from ANOVA indicated significant mean differences by female band teachers' age group for the Sex Stereotypes statement, "I have been turned down for teaching band during the hiring process," $F (3, 21.410) = 6.724$, $p < .001$. Post hoc Games-Howell results showed, at the $p = .01$ level, female band teachers in the 21–30 age group ($M = 3.47$, $SD = 2.084$) and 31–40 age group ($M = 3.63$, $SD = 1.776$) had significantly higher means than female band teachers in the Above 50 age group ($M = 2.28$, $SD = 1.512$).

Results from ANOVA indicated significant mean differences by female band teachers' age group for the Sex Stereotypes statement, "I have had my judgment questioned during my band teaching/rehearsal," $F (3, 27.610) = 10.135$, $p < .001$. Post hoc Scheffé results showed, at the $p = .01$ level, female band teachers ages 21–30 ($M = 4.04$, $SD = 1.532$) and 31–40 ($M = 3.57$, $SD = 1.756$) had significantly higher means than female band teachers whose age was Above 50 ($M = 2.32$, $SD = 1.544$).

Sub-research Question #6-10: Are there significant mean differences in the female band teachers' perceptions of sex stereotypes by levels of teaching? (Survey Questions 7 & 15 – 5 items)

The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of sex stereotypes by levels of teaching.
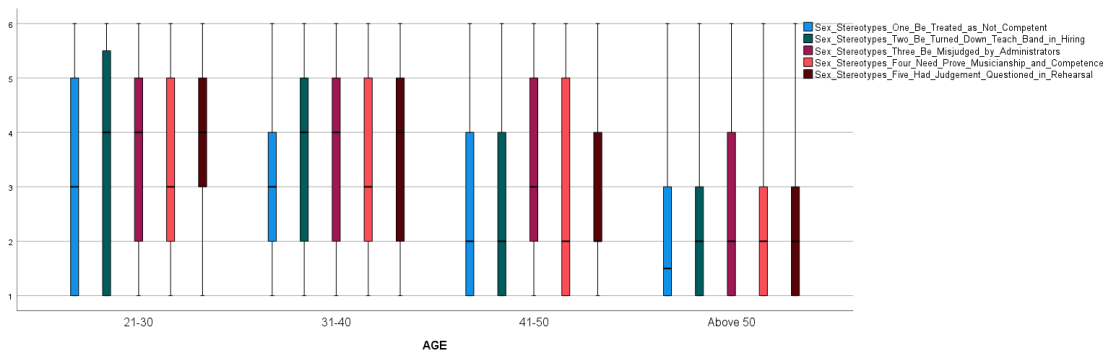
For the one-way MANOVA, preliminary assumption testing was conducted. There were no univariate outliers as assessed by examination of the boxplot within Sex

Stereotypes Scales (See Figure 4.8). Shapiro-Wilks for each level of "levels of teaching" group (IVs) for each Sex Stereotypes item (DVs) found that the assumption of normality was violated ($p > .05$). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of Mahalanobis distance of Sexism Scales was 17.865, which was not exceeded. This assumption of multivariate outliers was tenable. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient was less than .9. Therefore, multicollinearity was not a concern (Tabacknick & Fidell, 2019). The assumption of the homogeneity of variance-covariance of Sex Stereotypes Scales was tenable based on the results of the Box's test $M = 106.445$, $F (60, 19842.068) = 1.645$, $p = .001$. The results of Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for five Sexism statements were $F (2, 196) = 2.721$, $p = .068$; $F (2, 196) = .411$, $p = .664$; $F (2, 196) = .938$, $p = .196$; $F (2, 196) = 1.560$, $p = .213$; and $F (2, 196) = .997$, $p = .378$, respectively. All statements met the assumption of homogeneity.

Figure 4.8

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Sex Stereotypes and Univariate Outliers within Sex Stereotypes by Levels of Teaching

Since the assumptions were not fulfilled, Pillai's Trace was utilized when interpreting the MANOVA results. Pillai's Trace is a more robust multivariate analysis when the assumptions of homogeneity and equal variance are violated (Huck, 2012; Mertler & Vannatta, 2002; Tabacknick & Fidell, 2019). A one-way MANOVA was utilized for the remaining five Sex Stereotypes statements. A Bonferroni adjustment resulted in an alpha level of $p = .01$ for Sex Stereotypes. The MANOVA results indicated a significant difference in perceptions of Sex Stereotypes by the levels of teaching. Therefore, the null hypothesis, that there are no significant differences in female band teachers' perceptions of sex stereotypes by levels of teaching, was rejected.

Results of the MANOVA indicated significant mean differences in perceptions of Sex Stereotypes statements among the levels of teaching groups. Post hoc comparisons were conducted to evaluate pairwise differences among the "levels of teaching" groups' means. Regarding unequal sample size in each level of the "levels of teaching" group, Scheffé was utilized to interpret the post hoc comparisons instead of Tukey.

Results from ANOVA indicated significant mean differences by female band teachers' levels of teaching group for the Sex Stereotypes statement, "I have had my judgment questioned during my band teaching/rehearsal," $F(4, 13.567) = 4.720$, $p = .001$. Post hoc Scheffé results showed, at the $p = .01$ level, female band teachers who were teaching in combined middle school and high school ($M = 4.10$, $SD = 1.814$) had significantly higher means than female band teachers teaching in combined elementary and middle school ($M = 2.57$, $SD = 1.632$).

Sub-research Question #6-11: Are there significant mean differences in the female band teachers' perceptions of sex stereotypes by level of education? (Survey Questions 9 & 15 – 5 items)

The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of sex stereotypes by level of education.
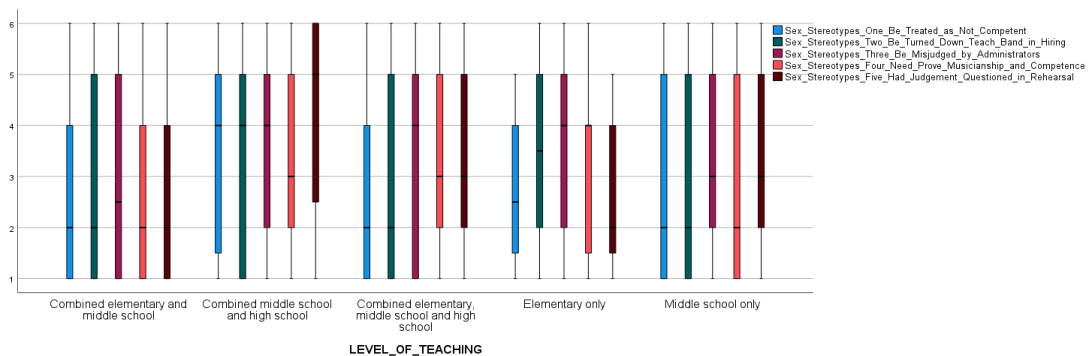
For the one-way MANOVA, preliminary assumption testing was conducted. There were no univariate outliers as assessed by examination of the boxplot within the Sex Stereotypes Scales (See Figure 4.9). Shapiro-Wilks for each level of "levels of education" group (IVs) for each Sex Stereotypes item (DVs) indicated that the assumption of normality was violated ($p > .05$). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of the Mahalanobis distance of Sex Stereotypes Scales was 17.865, which was not exceeded. This assumption was tenable. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient was less than .9. Therefore, multicollinearity was not a concern (Tabacknick & Fidell, 2019). The assumption of the homogeneity of variance-covariance of Sex Stereotypes Scales was tenable based on the results of the Box's test $M = 25.539$, $F (15, 70466.648) = 1.648$, $p = .054$. The results of Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for five Sex Stereotypes statements were $F (1, 197) = .412$, $p = .522$; $F (1, 197) = .778$, $p = .379$; $F (1, 197) = 1.684$, $p = .196$; $F (1, 197) = 2.126$, $p = .146$; and $F (1, 197) = .651$, $p = .421$, respectively. All statements met the assumption of homogeneity.

135

Figure 4.9

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Sex Stereotypes

and Univariate Outliers within Sex Stereotypes by Level of Education

Since the assumptions were not fulfilled, Pillai's Trace was utilized when interpreting the MANOVA results. Pillai's Trace is a more robust multivariate analysis when the assumptions of homogeneity and equal variance are violated (Huck, 2012; Mertler & Vannatta, 2002; Tabacknick & Fidell, 2019). A one-way MANOVA was utilized for the remaining five Sex Stereotypes statements. A Bonferroni adjustment yielded an alpha level of $p = .01$ for Sex Stereotype. The MANOVA indicated no significant differences in perceptions of Sex Stereotypes by level of education. Therefore, the null hypothesis, that there are no significant differences in female band teachers' perceptions of sex stereotypes by level of education, failed to be rejected.

Sub-research Question #6-12: Is there a significant interaction among female band teacher age, levels of teaching, and level of education on female band teachers' perceptions of sex stereotypes? (Survey Questions 3, 7, 9 & 15 – 5 items)

The null hypothesis was:

136

H_0 = There is no significant interaction among age, levels of teaching, and level of education on female band teachers' perceptions of sex stereotypes.

A three-way MANOVA was conducted to determine the effects of age, levels of teaching, and level of education on responses to statements measuring female band teachers' perception of sex stereotypes. However, Shapiro-Wilks for each level of "age," "levels of teaching," and "level of education" group (IVs) for each Sex Stereotypes item (DVs) found that the assumption of normality was violated ($p > .05$). The assumption of the homogeneity of variance-covariance of Sex Stereotypes Scales was not tenable based on the results of the Box's test $M = 391.573$, $F (180, 5610.402) = 1.561$, $p < .001$. Therefore, the F test for Pillai's Trace was utilized for analysis. MANOVA results indicated no significant interaction among the independent variables (Table 4.30). Therefore, the null hypothesis, that there is no significant interaction among age, levels of teaching, and level of education on female band teachers' perceptions of sex stereotypes, failed to be rejected.

Table 4.30

MANOVA Results for Statements Measuring Female Band Teachers' Perceptions of Sex Stereotypes by Age, Levels of Teaching, and Level of Education

	Pillai's Trace	F	df	Error df	Sig
Age	.222	1.865	20	636	.013
Levels of Teaching	.140	1.151	20	636	.292
Level of Education	.075	2.529	5	156	.031
Age*Levels of Teaching	.227	.634	60	800	.986
Age*Level of Education	.068	.737	15	474	.747
Levels of Teaching*Level of Education	.150	1.236	20	636	.218
Age*Levels of Teaching*Level of Education	.244	.820	50	800	.809

Sub-research Question #6-13: Are there significant mean differences in the female band teachers' perceptions of job isolation by age? (Survey Questions 3 & 15 – 5 items)

The null hypothesis was:

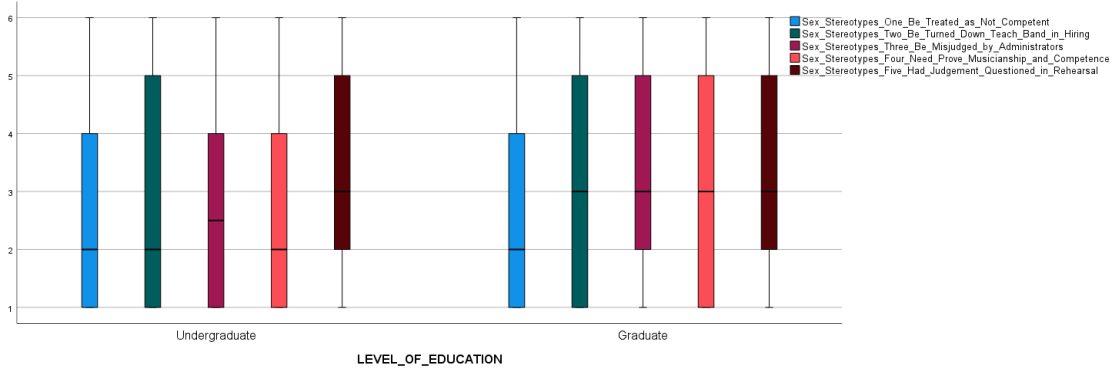H_0 = There are no significant differences in female band teachers' perceptions of job isolation by age.

For the one-way MANOVA, preliminary assumption testing was conducted. Univariate outliers were assessed and found by examining the boxplot within the Job Isolation Scales (See Figure 4.10). The outliers of Case ID Number were displayed in Figure 4.10. Outliers are data points in a data set that lie far away from the rest of the points in the data set (Huck, 2012). Shapiro-Wilks for each level of the "age" group (IVs) for each Job Isolation item (DVs) found that the assumption of normality was violated ($p > .05$). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of Mahalanobis distance of Job Isolation Scales is 34.904, which was exceeded. This assumption of multivariate outliers was not tenable. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient was less than .9. Therefore, multicollinearity was not a concern (Tabacknick & Fidell, 2019). The assumption of the homogeneity of variance-covariance of Sexism Scales was not tenable based on the results of the $M = 80.424$, $F (45, 95095.828) = 1.706$, $p = .002$. The results of Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for five Job Isolation statements are $F (3, 198) = 1.112$, $p = .346$; $F (3, 198) = .627$, $p = .598$; $F (3, 198) = .959$, $p = .413$;

F (3, 198) = 3.497, p = .017; and F (3, 194) = 1.541, p = .205, respectively. One

statement, "I have felt isolated in the school," did not meet the assumption of

homogeneity.

Figure 4.10

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Job Isolation

and Univariate Outliers within Job Isolation by Age

Since the assumptions were not fulfilled, Pillai's Trace was utilized when

interpreting the MANOVA results. Pillai's Trace is a more robust multivariate analysis

when the assumptions of homogeneity and equal variance are violated (Huck, 2012;

Mertler & Vannatta, 2002; Tabacknick & Fidell, 2019). A one-way MANOVA was

utilized for the remaining five Job Isolation statements. A Bonferroni adjustment yielded

an alpha level of p = .01 for Job Isolation Scales. The MANOVA indicated significant

differences in perceptions of Job Isolation statements by age. Therefore, the null

hypothesis, that there are no significant differences in female band teachers' perceptions

of job isolation by age, was rejected.

Results from ANOVA indicated significant mean differences by female band

teachers' age group for the Job Isolation statement, "I have felt disconnected from other

male band teachers at work," $F(3, 18.462) = 6.396$, $p < .001$. Post hoc Scheffé results showed, at the $p = .01$ level, female band teachers ages 21–30 ($M = 3.62$, $SD = 1.824$) and 31–40 ($M = 3.49$, $SD = 1.757$) had significantly higher means than female band teachers Above 50 ($M = 2.35$, $SD = 1.632$) (See Appendix E, *Female Band Teachers' Perceptions toward Job Isolation by Age with Outliers*). When univariate outliers ($n = 7$), which were lower in value than the majority of the data points, were excluded, female band teachers ages 21–30 ($M = 3.62$, $SD = 1.824$) and 31–40 ($M = 3.74$, $SD = 1.726$) remained significantly higher means than female band teachers Above 50 ($M = 2.35$, $SD = 1.632$) (See Appendix E, *Female Band Teachers' Perceptions toward Job Isolation by Age without Outliers*).

Results from ANOVA indicated significant mean differences by female band teachers' age group for the Job Isolation statement "I have felt myself withdrawing from male attendees when attending instrumental conferences," $F(3, 10.567) = 4.202$, $p = .007$. Post hoc Scheffé results showed, at the $p = .01$ level, female band teachers ages 31–40 ($M = 3.76$, $SD = 1.535$) had significantly higher means than female band teachers Above 50 ($M = 2.67$, $SD = 1.543$) (See Appendix E, *Female Band Teachers' Perceptions toward Job Isolation by Age with Outliers*). When univariate outliers ($n = 7$), which were lower in value than the majority of the data points, were excluded, female band teachers ages 31–40 ($M = 3.86$, $SD = 1.539$) maintained significantly higher means than female band teachers Above 50 ($M = 2.67$, $SD = 1.543$) (See Appendix E, *Female Band Teachers' Perceptions toward Job Isolation by Age without Outliers*).

Results from ANOVA indicated significant mean differences by female band teachers' age group for the Job Isolation statement "I have felt isolated in the school," F

(3, 17.216) = 6.543, $p < .001$. Post hoc Games-Howell results showed, at the $p = .01$

level, female band teachers ages 21–30 ($M = 4.51$, $SD = 1.473$) and 31–40 ($M = 4.29$, SD

$= 1.472$) had significantly higher means than female band teachers age 41–50 ($M = 3.46$,

$SD = 1.668$) and Above 50 ($M = 3.37$, $SD = 1.727$) (See Appendix E, *Female Band*

Teachers' Perceptions toward Job Isolation by Age with Outliers). When univariate

outliers ($n = 7$), which were lower in value than the majority of the data points, were

excluded, female band teachers ages 21–30 ($M = 4.51$, $SD = 1.473$) and 31–40 ($M = 4.74$,

$SD = 1.014$) maintained significantly higher means than female band teachers ages 41–50

($M = 3.43$, $SD = 1.766$) and Above 50 ($M = 3.37$, $SD = 1.727$) (See Appendix E, *Female*

Band Teachers' Perceptions toward Job Isolation by Age without Outliers).

Furthermore, when univariate outliers ($n = 7$), which were lower in value than the

majority of the data points, were excluded, results from ANOVA added significant mean

differences by the age group in which female band teachers for the Job Isolation

statement, "I have felt isolated when teaching bands," F (3, 14.784) = 5.663, $p < .001$.

Post hoc Scheffé results showed, at the $p = .01$ level, female band teachers ages 31–40 (M

$= 4.48$, $SD = 1.273$) had significantly higher means than female band teachers Above 50

($M = 3.27$, $SD = 1.794$) (See Appendix E, *Female Band Teachers' Perceptions toward*

Job Isolation by Age without Outliers).

Sub-research Question #6-14: Are there significant mean differences in the female

band teachers' perceptions of job isolation by levels of teaching? (Survey Questions
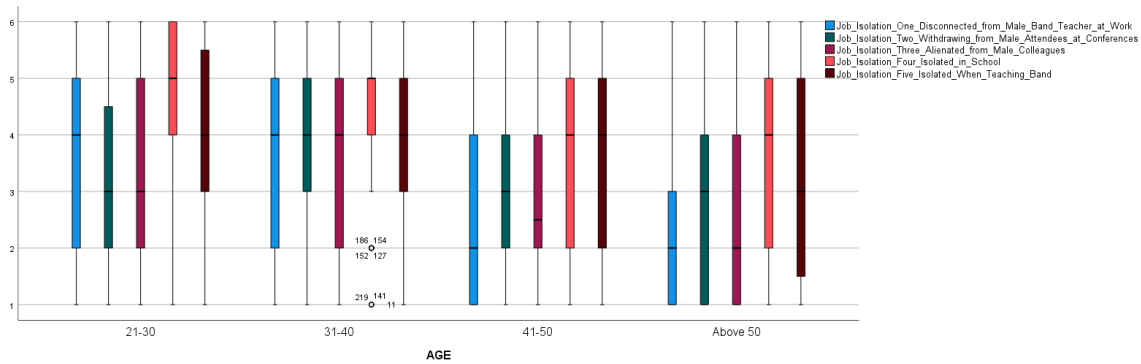
7 & 15 – 5 items)

The null hypothesis was:

$H_0 =$ There are no significant differences in female band teachers' perceptions of job isolation by levels of teaching.

For the one-way MANOVA, preliminary assumption testing was conducted. There were no univariate outliers as assessed by examination of the boxplot within the Job Isolation Scales (See Figure 4.11). Shapiro-Wilks for each level of the "levels of teaching" group (IVs) for each Job Isolation item (DVs) found that the assumption of normality was violated ($p > .05$). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of Mahalanobis distance of Job Isolation Scales was 34.904, which was exceeded. This assumption of multivariate outliers was not tenable. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient was less than .9. Therefore, multicollinearity was not a concern (Tabacknick & Fidell, 2019). The assumption of the homogeneity of variance-covariance of Sexism Scales was tenable based on the results of the Box's test $M = 70.497$, $F (60, 19746.419) = 1.090$, $p = .295$. The results of Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for five Job Isolation statements are $F (2, 199) = 1.408$, $p = .247$; $F (2, 199) = .936$, $p = .394$; $F (2, 199) = 1.146$, $p = .320$; $F (2, 199) = .176$, $p = .839$; and $F (2, 199) = .435$, $p = .648$, respectively. All statements met the assumption of homogeneity.

Figure 4.11

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Job Isolation

and Univariate Outliers within Job Isolation by Levels of Teaching

Since the assumptions were not fulfilled, Pillai's Trace was utilized when interpreting the MANOVA results. A one-way MANOVA was utilized for the remaining five Job Isolation statements. A Bonferroni adjustment yielded an alpha level of $p = .01$ for Job Isolation Scales. The MANOVA indicated no significant difference among the levels of teaching groups' perceptions of Job Isolation statements. Therefore, the null hypothesis, that There are no significant differences in female band teachers' perceptions of job isolation by levels of teaching, failed to be rejected.

Sub-research Question #6-15: Are there significant mean differences in the female band teachers' perceptions of job isolation by level of education? (Survey Questions 9 & 15 – 5 items)

The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of job isolation by level of education.

For the one-way MANOVA, preliminary assumption testing was conducted.

There were no univariate outliers as assessed by examination of the boxplot within the

Job Isolation Scales (See Figure 4.12). Shapiro-Wilks for each level of the "levels of

education" group (IVs) for each Job Isolation item (DVs) found that the assumption of

normality was violated ($p > .05$). Mahalanobis distance measure was used to assess

multivariate outliers for each case. The maximum value of Mahalanobis distance of Job

Isolation Scales was 34.904, which was exceeded. This assumption of multivariate

outliers was not tenable. Inspection of the correlation coefficients among the dependent

variables was significant ($p < .001$); therefore, the assumptions of linearity were

satisfactory. Also, each correlation coefficient was less than .9. Therefore,

multicollinearity was not a concern (Tabacknick & Fidell, 2019). The assumption of the

homogeneity of variance-covariance of Job Isolation Scales was tenable based on the

results of the Box's test $M = 70.497$, $F (60, 19746.419) = 1.090$, $p = .295$. The results of

Levene's test of equality of error provided evidence that the assumption of homogeneity

of variance across groups for five Sexism statements were $F (2, 199) = 1.408$, $p = .247$; F

$(2, 199) = .936$, $p = .394$; $F (2, 199) = 1.146$, $p = .320$; $F (2, 199) = .176$, $p = .839$; and F

$(2, 199) = .435$, $p = .648$, respectively. All statements met the assumption of

homogeneity.

Figure 4.12

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Job Isolation

and Univariate Outliers within Job Isolation by Level of Education
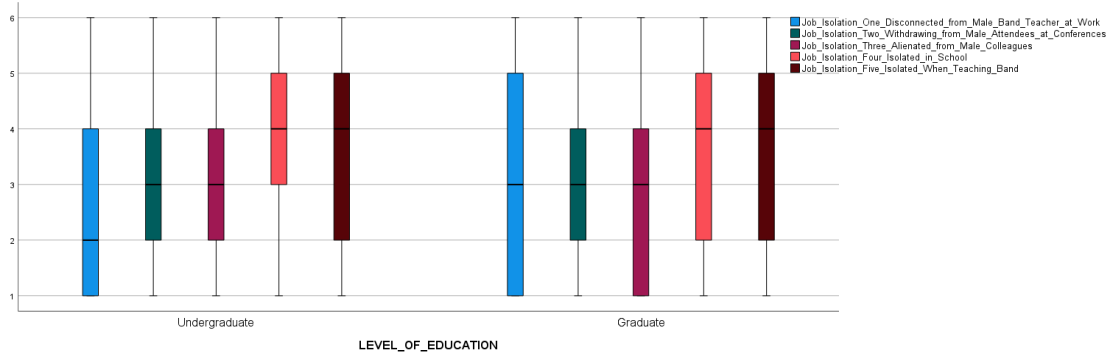
Since the assumptions were not fulfilled, Pillai's Trace was utilized when interpreting the MANOVA results. A one-way MANOVA was utilized for the remaining five Job Isolation statements. A Bonferroni adjustment yielded an alpha level of $p = .01$ for Job Isolation. The MANOVA indicated no significant difference among the level of e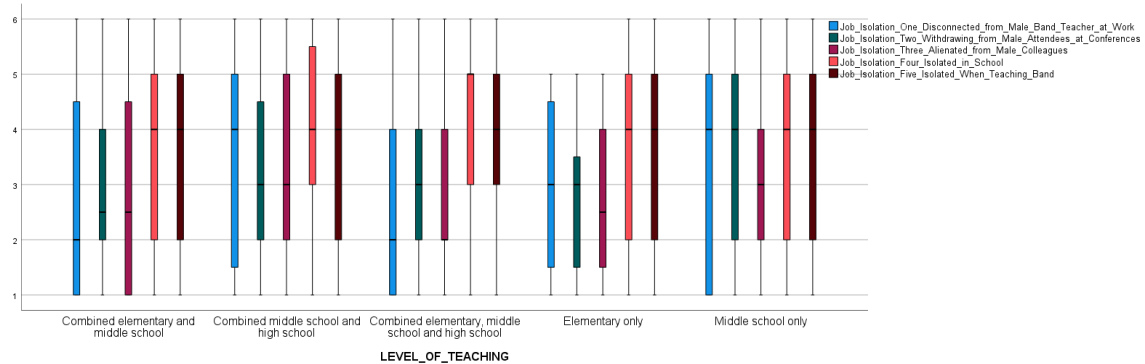ducation groups' perceptions of Job Isolation statements. Therefore, the null hypothesis, that there are no significant differences in female band teachers' perceptions of job isolation by level of education, failed to be rejected.

Sub-research Question #6-16: Is there a significant interaction among age, levels of teaching, and level of education on female band teachers' perceptions of job isolation? (Survey Questions 3, 7, 9 & 15 – 5 items)

The null hypothesis was:

H_0 = There is no significant interaction among age, levels of teaching, and level of education on female band teachers' perceptions of job isolation.

A three-way MANOVA was conducted to determine the effects of age, levels of teaching, and level of education on responses to statements measuring female band teachers' perception of job isolation. However, Shapiro-Wilks for each level of "age," "levels of teaching," and "level of education" group (IVs) for each Job Isolation item (DVs) found that the assumption of normality was violated ($p > .05$). The assumption of the homogeneity of variance-covariance of Job Isolation Scales was not tenable based on the results of the Box's test $M = 319.692$, $F (150, 5198.827) = 1.575$, $p < .001$. Therefore, the F test for Pillai's Trace was utilized for analysis. MANOVA results indicated no significant interaction among the independent variables (Table 4.31). Therefore, the null hypothesis, that there is no significant interaction among age, levels of teaching, and level of education on female band teachers' perceptions of job isolation, failed to be rejected.

Table 4.31

MANOVA Results for Statements Measuring Female Band Teachers' Perceptions of Job Isolation by Age, Levels of Teaching, and Level of Education

	Pillai's Trace	F	df	Error df	Sig
Age	.183	2.107	15	486	.009
Levels of Teaching	.072	.599	20	652	.915
Level of Education	.026	.730	5	157	.505
Age*Levels of Teaching	.303	.881	60	820	.728
Age*Level of Education	.128	1.449	15	486	.120
Levels of Teaching*Level of Education	.089	.746	20	652	.779
Age*Levels of Teaching*Level of Education	.247	.852	50	820	.758

Research Question #7: Do perceptions of discrimination, sexism, sex stereotypes, and job isolation differ among female band teachers by primary instrument?

A one-way multivariate analysis of variance (MANOVA) was conducted to investigate if there was a significant difference in female band teachers' perception as measured by discrimination, sexism, sex stereotypes, and job isolation scales based on the primary instrument types they played. The groups of participants' primary instruments were divided into brass (Euphonium/Baritone, French Horn, Trombone, Trumpet, Tuba), woodwind (Bassoon, Clarinet, Flute, Oboe, Saxophone), other (Cello, Harp, Percussion, Piano/Keyboard, Viola, Violin, Voice).

Sub-research Question #7-1: Are there significant mean differences in female band teachers' perceptions of discrimination by primary instrument? (Survey Questions 8 & 15 – 7 items)

The null hypothesis was:

H_0 = There are no significant mean differences in female band teachers' perceptions of discrimination by primary instrument.

For the one-way MANOVA, preliminary assumption testing was conducted. There were no univariate outliers as assessed by examination of the boxplot within the Discrimination Scales (See Figure 4.13). Shapiro-Wilks for each level of the "primary instrument" group (IVs) found for each Discrimination item (DVs) that the assumption of normality was violated ($p > .05$). However, the MANOVA is reasonably robust to modest violations of normality when the sample size is at least 20 in each cell (Tabacknick & Fidell, 2019, p. 210). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of Mahalanobis distance of

Discriminate Scales was 20.186, which was not exceeded. This assumption of multivariate outliers was tenable. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient was less than .9. Therefore, multicollinearity was not a concern (Tabacknick & Fidell, 2019). The assumption of the homogeneity of variance-covariance of Discrimination Scales was tenable based on the results of the Box's test $M = 52.824$, $F (56, 18724.926) = .866$, $p = .751$. The results of Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for seven Discrimination statements were $F (2, 182) = 6.264$, $p = .002$; $F (2, 182) = 1.647$, $p = .195$; $F (2, 182) = .358$, $p = .699$; $F (2, 182) = .403$, $p = .669$; $F (2, 182) = 1.025$, $p = .361$; $F (2, 182) = .343$, $p = .710$; and $F (2, 182) = 3.060$, $p =.049$, respectively. Two statements did not meet the assumption of homogeneity: "I have been discriminated against at my band-teaching job" and "I have been mistaken for teaching general music or choir instead of the band."

Figure 4.13

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Discrimination and Univariate Outliers within Discrimination by Primary Instrument
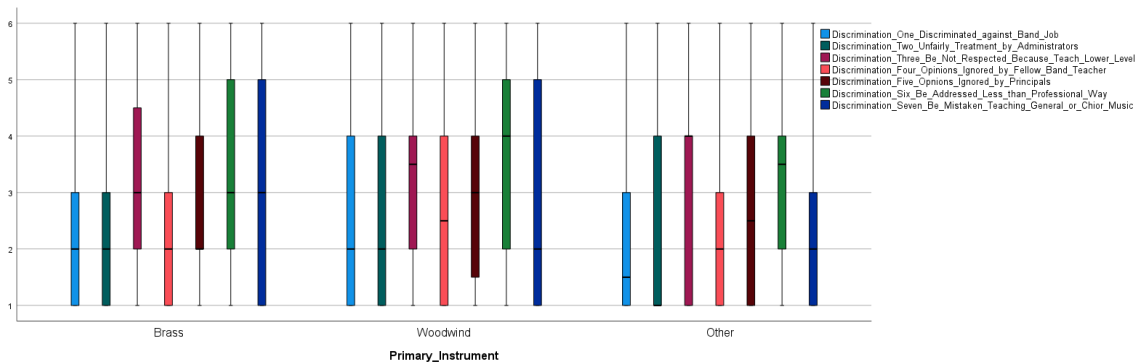
Since the assumptions were not fulfilled, Pillai's Trace is utilized when interpreting the MANOVA results. Pillai's Trace is a more robust multivariate analysis when the assumptions of homogeneity and equal variance are violated (Huck, 2012; Mertler & Vannatta, 2002; Tabacknick & Fidell, 2019). A one-way MANOVA was utilized for the remaining seven Discrimination statements. A Bonferroni adjustment resulted in an alpha level of $p = .007$ for Discrimination Scales. The MANOVA indicated no significant difference in perceptions of Discrimination statements by primary instrument. Therefore, the null hypothesis, that there are no significant mean differences in female band teachers' perceptions of discrimination by primary instrument, failed to be rejected.

Sub-research Question #7-2: Are there significant mean differences in female band teachers' perceptions of sexism by primary instrument? (Survey Questions 8 & 15 – 5 items)

The null hypothesis was:

H_0 = There are no significant mean differences in female band teachers' perceptions of sexism by primary instrument.

For the one-way MANOVA, preliminary assumption testing was conducted. Univariate outliers were assessed and found by examining the boxplot within the Sexism Scales (See Figure 4.14). The outliers of Case ID Number were displayed in Figure 4.14. Outliers are data points in a data set that lie far away from the rest of the points in the data set (Huck, 2012). Shapiro-Wilks for each level of the "primary instrument" group (IVs) for each Sexism item (DVs) found that the assumption of normality was violated ($p > .05$). However, the MANOVA is reasonably robust to modest violations of

149

normality when the sample size is at least 20 in each cell (Tabacknick & Fidell, 2019, p.210). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of Mahalanobis distance of Sexism Scales was 27.151, which was exceeded. This assumption of multivariate outliers was not tenable. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient was less than .9. Therefore, multicollinearity was not a concern (Tabacknick & Fidell, 2019). The assumption of the homogeneity of variance-covariance of Sexism Scales was tenable based on the results of the Box's test $M = 37.298$, $F (30, 16639.945) = 1.167$, $p = .242$. The results of Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for five Sexism statements are $F (2, 188) = 1.232$, $p = .294$; $F (2, 188) = .528$, $p = .290$; $F (2, 188) = 2.435$, $p = .090$; $F (2, 188) = .290$, $p = .748$; and $F (2, 188) = .015$, $p = .986$, respectively. All statements met the assumption of homogeneity.

Figure 4.14

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Sexism and Univariate Outliers within Sexism by Primary Instrument

Since the assumptions were not fulfilled, Pillai's Trace was utilized when interpreting the MANOVA results. A one-way MANOVA was utilized for the remaining five Sexism statements. A Bonferroni adjustment yielded an alpha level of $p = .01$ for Sexism Scales. The MANOVA indicated no significant difference in perceptions of Sexism statements by primary instrument. Therefore, the null hypothesis, that there are no significant mean differences in female band teachers' perceptions of sexism by primary instrument, failed to be rejected.

Sub-research Question #7-3: Are there significant mean differences in female band teachers' perceptions of sex stereotypes by primary instrument? (Survey Questions 8 & 15 – 5 items)

The null hypothesis was:

H_0 = There are no significant mean differences in female band teachers' perceptions of sex stereotypes by primary instrument.

For the one-way MANOVA, preliminary assumption testing was conducted. There were no univariate outliers as assessed by examination of the boxplot within the Sex Stereotypes Scales (See Figure 4.15). Shapiro-Wilks for each level of the "primary instrument" group (IVs) for each Sex Stereotypes item (DVs) indicated that the assumption of normality was violated ($p > .05$). However, the MANOVA is reasonably robust to modest violations of normality when the sample size is at least 20 in each cell (Tabacknick & Fidell, 2019, p. 210). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of the Mahalanobis distance of Sex Stereotypes Scales was 17.865, which was not exceeded. This assumption of multivariate outliers was tenable. Inspection of the correlation coefficients among the

151

dependent variables was significant ($p < .001$); therefore, the assumptions of linearity

were satisfactory. Also, each correlation coefficient was less than .9. Therefore,

multicollinearity was not a concern (Tabacknick & Fidell, 2019). The assumption of the

homogeneity of variance-covariance of Sex Stereotypes Scales was tenable based on the

results of the Box's test $M = 38.415$, $F (30, 19863.094) = 1.210$, $p = .199$. The results of

Levene's test of equality of error provided evidence that the assumption of homogeneity

of variance across groups for five Sex Stereotypes statements were $F (2, 196) = .816$, p

$= .444$; $F (2, 196) = 4.446$, $p = .013$; $F (2, 196) = .207$, $p = .814$; $F (2, 196) = 1.844$, p

$= .161$; and $F (2, 196) = .111$, $p = .895$, respectively. One statement, "I have been turned

down for teaching band during the hiring process," did not meet the assumption of

homogeneity.

Figure 4.15

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Sex Stereotypes

and Univariate Outliers within Sex Stereotypes by Primary Instrument
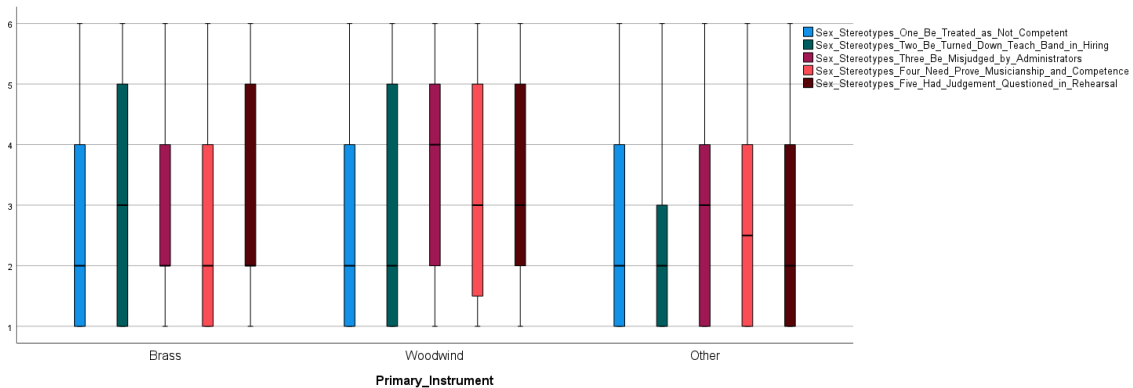
Since the assumptions were not fulfilled, Pillai's Trace was utilized when

interpreting the MANOVA results. A one-way MANOVA was utilized for the remaining

five Sex Stereotypes statements. A Bonferroni adjustment yielded an alpha level of p

= .01 for Sex Stereotypes Scales. The MANOVA indicated no significant difference in perceptions of Sex Stereotypes statements by primary instrument. Therefore, the null hypothesis, that there are no significant mean differences in female band teachers' perceptions of sex stereotypes by primary instrument, failed to be rejected.

Sub-research Question #7-4: Are there significant mean differences in female band teachers' perceptions of job isolation by primary instrument? (Survey Questions 8 & 15 – 5 items)
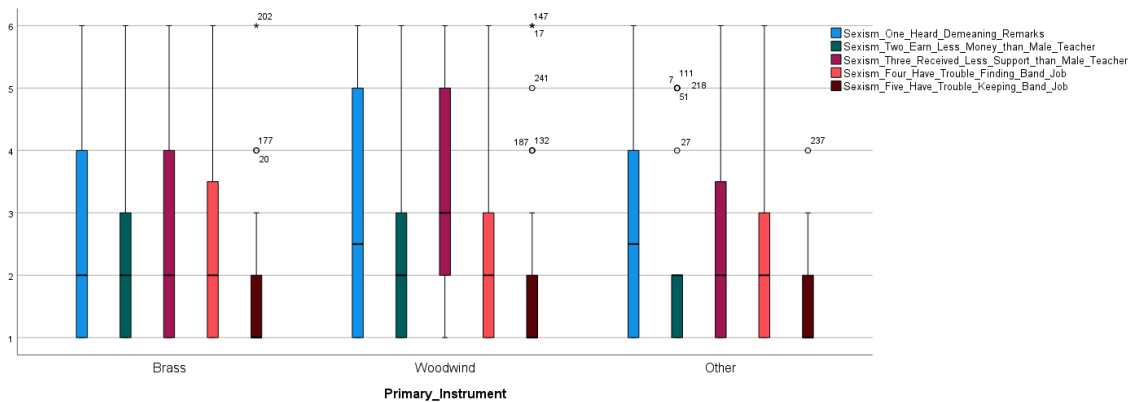
The null hypothesis was:

H_0 = There are no significant mean differences in female band teachers' perceptions of job isolation by primary instrument.

For the one-way MANOVA, preliminary assumption testing was conducted. Univariate outliers were assessed and found by examination of the boxplot within the Job Isolation Scales (see Figure 4.16). The outliers of Case ID Number were displayed in Figure 4.16. Shapiro-Wilks for each level of the "primary instrument" group (IVs) for each Job Isolation item (DVs) found that the assumption of normality was violated ($p > .05$). However, the MANOVA is reasonably robust to modest violations of normality when the sample size is at least 20 in each cell (Tabacknick & Fidell, 2019, p. 210). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of Mahalanobis distance of Job Isolation Scales was 34.904, which was exceeded. This assumption of multivariate outliers was not tenable. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient was less than .9. Therefore, multicollinearity was not a concern (Tabacknick

& Fidell, 2019). The assumption of the homogeneity of variance-covariance of Job

Isolation Scales was tenable based on the results of the Box's test $M = 30.076$, F (30,

21658.795) = .948, p = .547. The results of Levene's test of equality of error provided

evidence that the assumption of homogeneity of variance across groups for five Job

Isolation statements were F (2, 199) = .056, p = .945; F (2, 199) = 1.988, p = .140; F (2,

199) = .841, p = .433; F (2, 199) = 3.964, p = .021; and F (2, 199) = 1.267, p = .284,

respectively. One statement, "I have felt isolated in the school," did not meet the

assumption of homogeneity.

Figure 4.16

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Job Isolation

and Univariate Outliers within Job Isolations by Primary Instrument
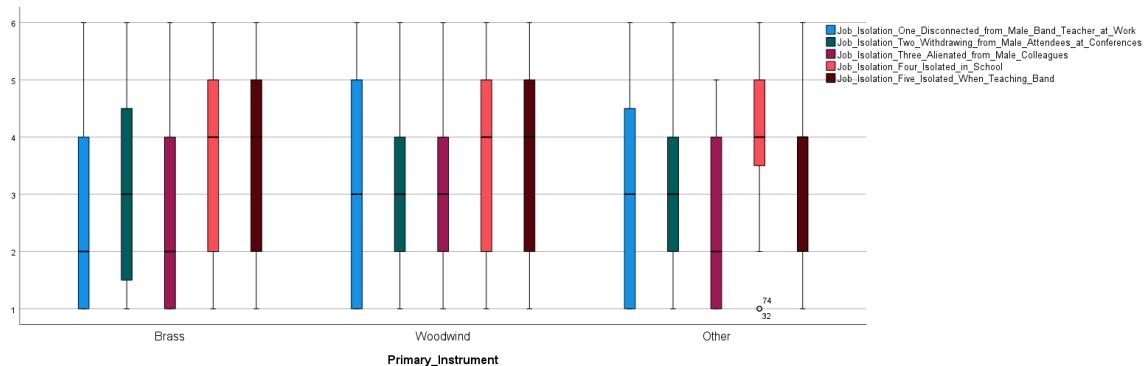
Since the assumptions were not fulfilled, Pillai's Trace was utilized when

interpreting the MANOVA results. A one-way MANOVA was utilized for the remaining

five Job Isolation statements. A Bonferroni adjustment yielded an alpha level of p = .01

for Job Isolation Scales. The MANOVA indicated no significant difference in perceptions

of Job Isolation statements by primary instrument. Therefore, the null hypothesis, that

there are no significant mean differences in female band teachers' perceptions of job isolation by primary instrument, failed to be rejected.

Research Question #8: Do female band teacher years of teaching experience and female band teacher years of band teaching experience influence perceptions of discrimination, sexism, sex stereotyping, and job isolation in their careers? (Survey Questions 5, 6, and 15)

A two-way multivariate analysis of variance (MANOVA) was conducted to investigate if there was a significant difference in female band teachers' perceptions as measured by discrimination, sexism, sex stereotypes, and job isolation scales based on female band teacher years of teaching experience and female band teacher years of band teaching experience. The groups of participants' years of music and band teaching experience were divided into 1–5, 6–10, 11–15, 16–20, 21–25, and above 25 years.

Sub-research Question #8-1: Are there mean significant differences in the female band teachers' perceptions of discrimination by years of teaching experience? (Survey Questions 5 & 15 – 7 items)

The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of discrimination by years of teaching experience.

For the one-way MANOVA, preliminary assumption testing was conducted. Univariate outliers were assessed and found by examination of the boxplot within the Discrimination Scales (See Figure 4.17). The outliers of Case ID Number were displayed in Figure 4.17. Outliers are data points in a data set that lie far away from the rest of the

155

points in the data set (Huck, 2012). Shapiro-Wilks for each level of the "years of teaching experience" group (IVs) for each Discrimination item (DVs) indicated that the assumption of normality was violated ($p > .05$). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of Mahalanobis distance of Discriminate Scales was 20.186, which was not exceeded. This assumption of multivariate outliers was tenable. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient was less than .9. Therefore, multicollinearity was not a concern (Tabacknick & Fidell, 2019). The assumption of the homogeneity of variance-covariance of Discrimination Scales was tenable based on the results of the Box's test $M = 191.938$, $F (140, 28785.473) = 1.217$, $p = .042$. The results of Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for seven Discrimination statements were $F (5, 179) = 1.790$, $p = .117$; $F (5, 179) = 1.612$, $p = .159$; $F (5, 179) = 1.096$, $p = .364$; $F (5, 179) = .541$, $p = .745$; $F (5, 179) = 1.593$, $p = .164$; $F (5, 179) = .196$, $p = .964$; and $F (5, 179) = 4.154$, $p = .001$, respectively. One statement, "I have been mistaken for teaching general music or choir instead of the band," did not meet the assumption of homogeneity.

Figure 4.17

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Discrimination

and Univariate Outliers within Discrimination by Years of Teaching Experience

Since the assumptions were not fulfilled, Pillai's Trace was utilized when interpreting the MANOVA results. Pillai's Trace is a more robust multivariate analysis when the assumptions of homogeneity and equal variance are violated (Huck, 2012; Mertler & Vannatta, 2002; Tabacknick & Fidell, 2019). A one-way MANOVA was utilized for the remaining seven Discrimination statements. A Bonferroni adjustment resulted in an alpha level of $p = .007$ for Discrimination Scales. The MANOVA indicated no significant difference in perceptions of Discrimination statements by years of teaching experience. Therefore, the null hypothesis, that there are no significant differences in female band teachers' perceptions of discrimination by years of teaching experience, failed to be rejected.

Sub-research Question #8-2: Are there mean significant differences in the female band teachers' perceptions of discrimination by years of band teaching experience? (Survey Questions 6 & 15 – 7 items)

The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of discrimination by years of band teaching experience.

For the one-way MANOVA, preliminary assumption testing was conducted. Univariate outliers were assessed and found by examination of the boxplot within the Discrimination Scales (See Figure 4.18). The outliers of Case ID Number were displayed in Figure 4.18. Outliers are data points in a data set that lie far away from the rest of the points in the data set (Huck, 2012). Shapiro-Wilks for each level of the "years of band teaching experience" group (IVs) for each Discrimination item (DVs) found that the assumption of normality was violated ($p > .05$). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of Mahalanobis distance of Discriminate Scales was 20.186, which was not exceeded. This assumption of multivariate outliers was tenable. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient was less than .9. Therefore, multicollinearity was not a concern (Tabacknick & Fidell, 2019). The assumption of the homogeneity of variance-covariance of Discrimination Scales was tenable based on the results of the Box's test $M = 174.336$, $F (140, 40089.979) = 1.116$, $p = .165$. The results of Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for seven Discrimination statements were $F (5, 179) = 1.873$, $p = .101$; $F (5, 179) = 2.526$, $p = .031$; $F (5, 179) = .958$, $p = .445$; $F (5, 179) = .913$, $p = .474$; $F (5, 179) = .957$, $p = .446$; $F (5, 179) = .213$ $p = .957$; and $F (5, 179) = 3.536$, $p = .005$, respectively. Two statements did not meet the assumption of

homogeneity: "I have been treated unfairly by administrators while I was a band teacher"

and "I have been mistaken for teaching general music or choir instead of the band."

Figure 4.18

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Discrimination

and Univariate Outliers within Discrimination by Years of Band Teaching Experience

Since the assumptions were not fulfilled, Pillai's Trace was utilized when

interpreting the MANOVA results. A one-way MANOVA was utilized for the remaining

seven Discrimination statements. A Bonferroni adjustment resulted in an alpha level of *p*

= .007 for Discrimination Scales. The MANOVA indicated no significant difference in

perceptions of Discrimination statements by years of band teaching experience.
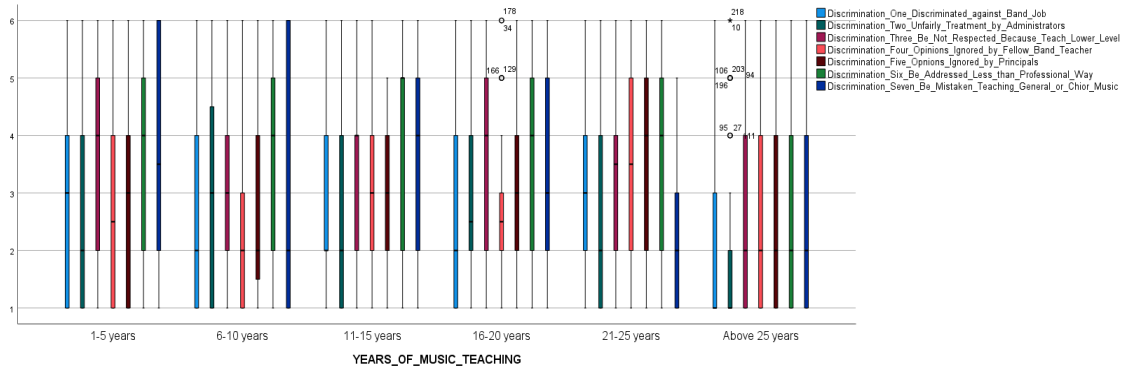
Therefore, the null hypothesis, that there are no significant differences in female band

teachers' perceptions of discrimination by years of band teaching experience, failed to be

rejected.

Sub-research Question #8-3: Is there a significant interaction between years of

teaching experience and years of band teaching experience on female band teachers'

perceptions of discrimination? (Survey Questions 5, 6 & 15 – 7 items)

The null hypothesis was:

H_0 = There is no significant interaction between years of teaching experience and years of band teaching experience on female band teachers' perceptions of discrimination.

A two-way MANOVA was conducted to determine the effects of female band teacher years of teaching experience and female band teacher years of band teaching experience on responses to statements measuring female band teachers' perception of discrimination. The assumption of the homogeneity of variance-covariance of Discrimination Scales was tenable based on the results of the Box's test $M = 299.667$, F (196, 11518.236) = 1.223, $p = .019$. However, Shapiro-Wilks for each level of "years of teaching experience" and "years of band teaching experience" group (IVs) for each Discrimination item (DVs) found that the assumption of normality was violated ($p > .05$). Therefore, F test for Pillai's Trace was utilized for analysis. MANOVA results indicated no significant interaction between the independent variables (Table 4.32). Therefore, the null hypothesis, that there is no significant interaction between years of teaching experience and years of band teaching experience on female band teachers' perceptions of discrimination, failed to be rejected.

Table 4.32

MANOVA Results for Statements Measuring Female Band Teachers' Perceptions of

Discrimination by Years of Teaching Experience and Years of Band Teaching Experience

	Pillai's Trace	F	df	Error df	Sig
Years of Teaching Experience	.212	1.045	35	825	.399
Years of Band Teaching Experience	.212	1.042	35	825	.404
Years of Band Teaching Experience*Years of Band Teaching Experience	.375	1.351	49	1169	.056

Sub-research Question #8-4: Are there mean significant differences in the female band teachers' perceptions of sexism by years of teaching experience? (Survey Questions 5 & 15 – 5 items)
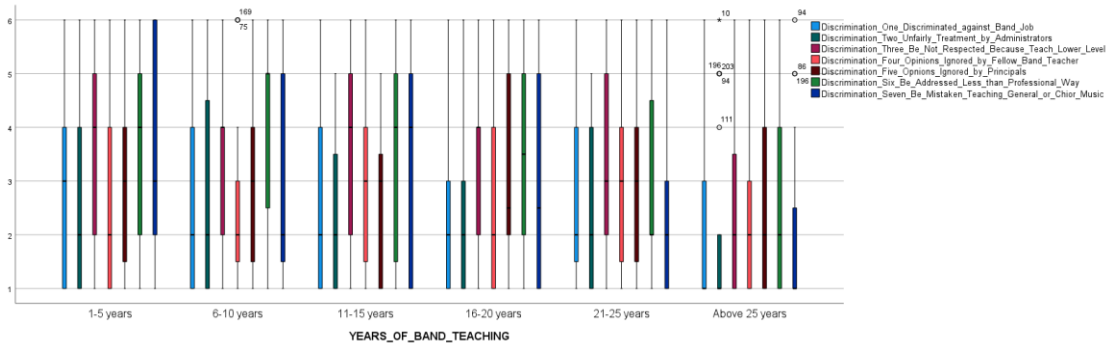
The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of sexism by years of teaching experience.

For the one-way MANOVA, preliminary assumption testing was conducted. Univariate outliers were assessed and found by examining the boxplot within the Sexism Scales (See Figure 4.19). The outliers of Case ID Number were displayed in Figure 4.19. Outliers are data points in a data set that lie far away from the rest of the points in the data set (Huck, 2012). Shapiro-Wilks for each level of the "years of teaching experience" group (IVs) for each Sexism item (DVs) found that the assumption of normality was violated ($p > .05$). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of Mahalanobis distance of Sexism Scales was 27.151, which was exceeded. This assumption of multivariate outliers was not tenable. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient was less than .9. Therefore, multicollinearity was not a concern (Tabacknick & Fidell, 2019). The assumption of the homogeneity of variance-covariance of Sexism Scales was not tenable based on the results of the Box's test $M = 157.521$, F (75, 31003.504) = 1.936, $p < .001$. The results of Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for five Sexism statements were F (5, 185) = 1.391, $p = .230$; F (5, 185) = 2.931, $p = .014$; F (5,

185) = 1.240, *p* = .292; *F* (5, 185) = 8.335, *p* < .001; and *F* (5, 185) = 1.893, *p* = .098,

respectively. Two statements did not meet the assumption of homogeneity: "I have

earned less money than male teachers who teach the same level of the band" and "I have

trouble keeping a band job because I am a female."

Figure 4.19

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Sexism and

Univariate Outliers within Sexism by Years of Teaching Experience

Since the assumptions were not fulfilled, Pillai's Trace was utilized when

interpreting the MANOVA results. Pillai's Trace is a more robust multivariate analysis

when the assumptions of homogeneity and equal variance are violated (Huck, 2012;

Mertler & Vannatta, 2002; Tabacknick & Fidell, 2019). A one-way MANOVA was

utilized for the remaining five Sexism statements. A Bonferroni adjustment resulted in an

alpha level of *p* = .01 for Sexism Scales. The MANOVA indicated no significant

difference in perceptions of Sexism statements by years of teaching experience.

Therefore, the null hypothesis, that there are no significant differences in female band

teachers' perceptions of sexism by years of teaching experience, failed to be rejected.

However, when univariate outliers ($n = 23$), which were higher in value than the majority of the data points, were excluded, the MANOVA results indicated a significant difference in perceptions of Sexism statements by years of teaching experience. Therefore, without any univariate outliers ($n = 23$), the null hypothesis, that there are no significant differences in female band teachers' perceptions of sexism by years of teaching experience, was rejected.

When univariate outliers ($n = 23$), which were higher in value than the majority of the data points, were excluded, the MANOVA indicated significant mean differences in perceptions of Sexism statements by years of teaching experience groups. Post hoc comparisons were conducted to evaluate pairwise differences among "years of teaching experience" groups' means. Regarding unequal sample size in each "years of teaching experience" group level, Scheffé was utilized to interpret the most post hoc comparisons instead of Tukey. However, two statements did not meet the assumption of homogeneity: "I have earned less money than male teachers who teach the same level of the band" and "I have trouble keeping a band job because I am a female." Because of unequal variances within these two statements, post hoc Games-Howell (Dunnet, 1980; Rusticus & Lovato, 2014) was applied to interpret the results of the pairwise differences comparisons.

When univariate outliers ($n = 23$), which were higher in value than the majority of the data points, were excluded, results from ANOVA indicated significant mean differences by female band teachers' years of teaching experience for the Sexism statement, "I have earned less money than male teachers who teach the same level of the band," $F(4, 10.087) = 4.519$, $p = .002$. Post hoc Games-Howell results showed, at the $p = .01$ level, female band teachers who have 1–5 years of music teaching experience ($M =$

2.94, *SD* = 1.769) had significantly higher means than female band teachers who have

11–15 years of music teaching experience (*M* = 1.57, *SD* = .573) (See Appendix E,

Female Band Teachers' Perceptions toward Sexism by Years of Teaching without

Outliers).

Sub-research Question #8-5: Are there mean significant differences in the female

band teachers' perceptions of sexism by years of band teaching experience? (Survey

Questions 6 & 15 – 5 items)
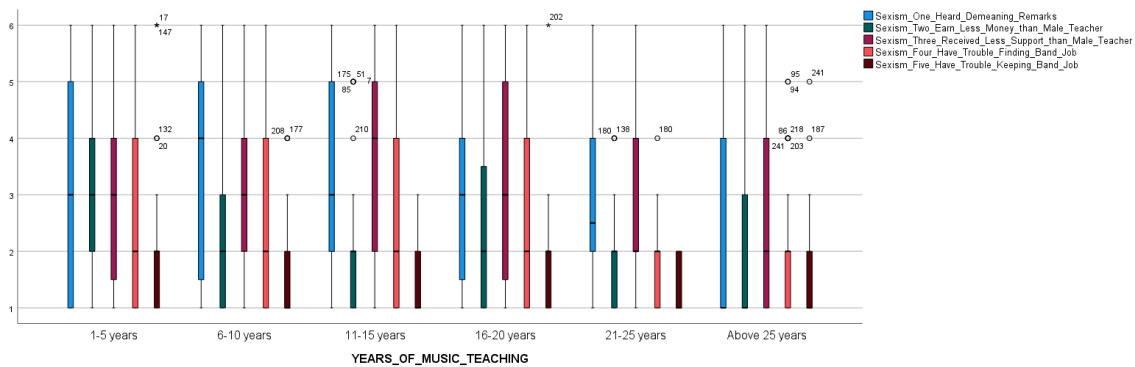
The null hypothesis was:

H₀ = There are no significant differences in female band teachers' perceptions of

sexism by years of band teaching experience.

For the one-way MANOVA, preliminary assumption testing was conducted.

Univariate outliers were assessed and found by examining the boxplot within the Sexism

Scales (See Figure 4.20). The outliers of Case ID Number were displayed in Figure 4.20.

Outliers are data points in a data set that lie far away from the rest of the points in the

data set (Huck, 2012). Shapiro-Wilks for each level of the "years of band teaching

experience" group (IVs) for each Sexism item (DVs) found that the assumption of

normality was violated (*p* > .05). Mahalanobis distance measure was used to assess

multivariate outliers for each case. The maximum value of Mahalanobis distance of

Sexism Scales was 27.151, which was exceeded. This assumption of multivariate outliers

was not tenable. Inspection of the correlation coefficients among the dependent variables

was significant (*p* < .001); therefore, the assumptions of linearity were satisfactory. Also,

each correlation coefficient was less than .9. Therefore, multicollinearity was not a

concern (Tabacknick & Fidell, 2019). The assumption of the homogeneity of variance-

covariance of Sexism Scales was not tenable based on the results of the Box's test $M = 153.185$, $F (75, 45365.508) = 1.896$, $p < .001$. The results of Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for five Sexism statements are $F (5, 185) = 1.439$, $p = .212$; $F (5, 185) = 1.513$, $p = .188$; $F (5, 185) = .564$, $p = .727$; $F (5, 185) = 6.043$, $p < .001$; and $F (5, 185) = 1.202$, $p = .310$, respectively. One statement, "I have trouble finding a band job because I am a female," did not meet the assumption of homogeneity.

Figure 4.20

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Sexism and Univariate Outliers within Sexism by Years of Band Teaching Experience

Since the assumptions were not fulfilled, Pillai's Trace was utilized when interpreting the MANOVA results. A one-way MANOVA was utilized for the remaining five Sexism statements. A Bonferroni adjustment yielded an alpha level of $p = .01$ for Sexism Scales. The MANOVA indicated no significant difference in perceptions of Sexism statements by years of band teaching experience groups. Therefore, the null hypothesis, that there are no significant differences in female band teachers' perceptions of sexism by years of band teaching experience, failed to be rejected.

Sub-research Question #8-6: Is there a significant interaction between years of teaching experience and years of band teaching experience on female band teachers' perceptions of sexism? (Survey Questions 5, 6 & 15 – 5 items)

The null hypothesis was:

H_0 = There is no significant interaction between years of teaching experience and years of band teaching experience on female band teachers' perceptions of sexism.

A two-way MANOVA was conducted to determine the effects of female band teacher years of teaching experience and female band teacher years of band teaching experience on responses to statements measuring female band teachers' perception of sexism. The assumption of the homogeneity of variance-covariance of Sexism Scales was not tenable based on the results of the Box's test $M = 280.516$, $F (120, 8906.190) = 1.962$, $p < .001$. However, Shapiro-Wilks for each level of "years of teaching experience" and "years of band teaching experience" group (IVs) for each Sexism item (DVs) found that the assumption of normality was violated ($p > .05$). Therefore, F test for Pillai's Trace was utilized for analysis. MANOVA results indicated no significant interaction between the independent variables (Table 4.33). Therefore, the null hypothesis, that there is no significant interaction between years of teaching experience and years of band teaching experience on female band teachers' perceptions of sexism, failed to be rejected.

Table 4.33

MANOVA Results for Statements Measuring Female Band Teachers' Perceptions of

Sexism Years of Teaching Experience and Years of Band Teaching Experience

	Pillai's Trace	F	df	Error df	Sig
Years of Teaching Experience	.112	.791	25	860	.757
Years of Band Teaching Experience	.081	.565	25	860	.958
Years of Band Teaching Experience*Years of Band Teaching Experience	.215	.964	40	860	.536

Sub-research Question #8-7: Are there mean significant differences in the female

band teachers' perceptions of sex stereotypes by years of teaching experience?

(Survey Questions 5 & 15 – 5 items)
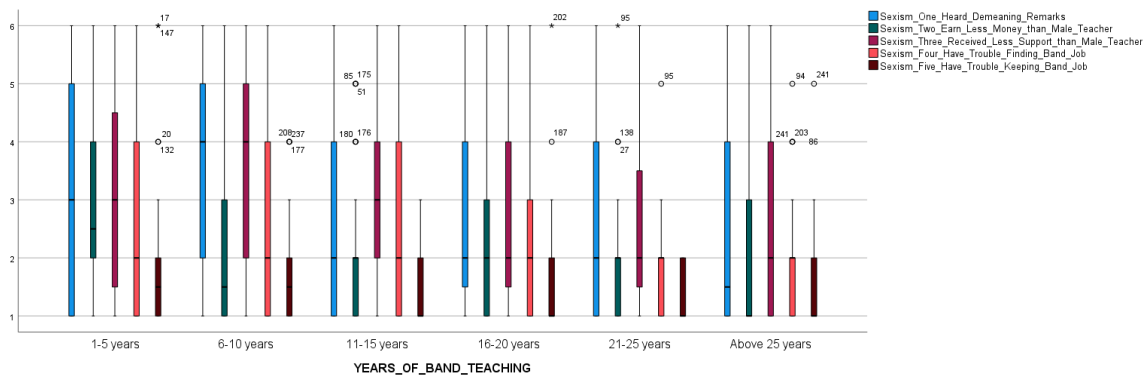
The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of

sex stereotypes by years of teaching experience.

For the one-way MANOVA, preliminary assumption testing was conducted.

Univariate outliers were assessed and found by examining the boxplot within the Sex

Stereotypes Scales (See Figure 4.21). The outliers of Case ID Number were displayed in

Figure 4.21. Outliers are data points in a data set that lie far away from the rest of the

points in the data set (Huck, 2012). Shapiro-Wilks for each level of the "years of teaching

experience" group (IVs) for each Sex Stereotypes item (DVs) found that the assumption

of normality was violated ($p > .05$). Mahalanobis distance measure was used to assess

multivariate outliers for each case. The maximum value of the Mahalanobis distance of

Sex Stereotypes Scales was 17.865, which was not exceeded. This assumption of

multivariate outliers was tenable. Inspection of the correlation coefficients among the

dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient was less than .9. Therefore, multicollinearity was not a concern (Tabacknick & Fidell, 2019). The assumption of the homogeneity of variance-covariance of Sex Stereotypes Scales was tenable based on the results of the Box's test $M = 108.595$, $F (75, 37103.319) = 1.342$, $p = .026$. The results of Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for five Sex Stereotypes statements were $F (5, 193) = 2.758$, $p = .020$; $F (5, 193) = 3.952$, $p = .002$; $F (5, 193) = .776$, $p = .568$; $F (5, 193) = .640$, $p = .669$; and $F (5, 193) = 1.746$, $p = .126$, respectively. Two statements did not meet the assumption of homogeneity, "I was treated as if I am not competent" and "I have been turned down for teaching band during the hiring process."

Figure 4.21

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Sex Stereotypes and Univariate Outliers within Sex Stereotypes by Years of Teaching Experience

Since the assumptions were not fulfilled, Pillai's Trace was utilized when interpreting the MANOVA results. Pillai's Trace is a more robust multivariate analysis when the assumptions of homogeneity and equal variance are violated (Huck, 2012;

Mertler & Vannatta, 2002; Tabacknick & Fidell, 2019). A one-way MANOVA was utilized for the remaining five Sex Stereotypes statements. A Bonferroni adjustment yielded an alpha level of $p = .01$ for Sex Stereotypes Scales. The MANOVA results indicated a significant difference in perceptions of Sex Stereotypes statements by years of teaching experience. Therefore, the null hypothesis, that there are no significant differences in female band teachers' perceptions of sex stereotypes by years of teaching experience, was rejected.

The MANOVA indicated significant mean differences in perceptions of Sex Stereotypes statements by years of teaching experience. Post hoc comparisons were conducted to evaluate pairwise differences among "years of teaching experience" groups' means. Regarding the unequal sample size in the years of teaching experience group, Scheffé was utilized to interpret the post hoc comparisons instead of Tukey. However, two Sex Stereotypes statements did not meet the assumption of homogeneity of variance: "I was treated as if I am not competent," and "I have been turned down for teaching band during the hiring process." Because of unequal variances within these two statements, post hoc Games-Howell (Dunnet, 1980; Rusticus & Lovato, 2014) was applied to interpret the results of the pairwise differences comparisons.

Results from ANOVA indicated significant mean differences by female band teachers' years of teaching experience for the Sex Stereotypes statement, "I have been turned down for teaching band during the hiring process," $F (5, 13.142) = 4.090$, $p = .001$. Post hoc Games-Howell results showed, at the $p = .01$ level, female band teachers in the 11–15 years group ($M = 3.65$, $SD = 1.773$) had significantly higher means than female band teachers in the 21–25 years group ($M = 2.17$, $SD = 1.527$) and those above

25 years (*M* = 2.32, *SD* = 1.650) (See Appendix E, *Female Band Teachers' Perceptions toward Sex Stereotypes by Years of Teaching with Outliers*).

Results from ANOVA indicated significant mean differences by years of teaching group for the Sex Stereotypes statement, "I have had my judgment questioned during my band teaching/rehearsal," $F (5, 16.593) = 6.054$, $p < .001$. Post hoc Scheffé results showed, at the $p = .01$ level, female band teachers with 1–5 years (*M* = 4.09, *SD* = 1.464) and 6–10 (*M* = 3.81, *SD* = 1.721) years of teaching experience had significantly higher means than female band teachers with teaching experience above 25 years (*M* = 2.32, *SD* = 1.516) (See Appendix E, *Female Band Teachers' Perceptions toward Sex Stereotypes by Years of Teaching with Outliers*).

When univariate outliers (*n* = 16), which were higher in value than the majority of the data points, were excluded, results from ANOVA indicated significant mean differences by female band teachers' group for years of teaching experience for the Sex Stereotypes statement, "I was treated as if I am not competent," $F (5, 14.983) = 6.119$, $p < .001$. Post hoc Games-Howell results showed, at the $p = .01$ level, female band teachers in the groups 1–5 years (*M* = 3.06, *SD* = 1.969), 6–10 years (*M* = 3.29, *SD* = 1.793), and 11–15 years (*M* = 2.94, *SD* = 1.774) had significantly higher means than female band teachers whose teaching experience was above 25 years (*M* = 1.56, *SD* = .867) (See Appendix E, *Female Band Teachers' Perceptions toward Sex Stereotypes by Years of Teaching without Outliers*).

When univariate outliers (*n* = 16), which were higher in value than the majority of the data points, were excluded, results from ANOVA indicated significant mean differences by female band teachers' years of teaching experience group for the Sex

170

Stereotypes statement, "I have been turned down for teaching band during the hiring process," $F (5, 21.046) = 6.992$, $p < .001$. Post hoc Games-Howell results showed, at the $p = .01$ level, female band teachers in the 1–5 years ($M = 3.53$, $SD = 2.135$), 6–10 years ($M = 3.29$, $SD = 1.901$), 11–15 years ($M = 3.65$, $SD = 1.773$) and 16–20 years ($M = 3.09$, $SD = 1.747$) groups had significantly higher means than female band teachers with 21–25 years ($M = 1.38$, $SD = .500$). Also, female band teachers with 1–5 years ($M = 3.53$, $SD = 2.135$), and 11–15 years ($M = 3.29$, $SD = 1.901$) teaching experience had significantly higher means than female band teachers whose teaching experience was above 25 years ($M = 2.07$, $SD = 1.543$) (See Appendix E, *Female Band Teachers' Perceptions toward Sex Stereotypes by Years of Teaching without Outliers*).

When univariate outliers ($n = 16$), which were higher in value than the majority of the data points, were excluded, results from ANOVA indicated significant mean differences by female band teachers' group for years of teaching experience for the Sex Stereotypes statement, "I have had my judgment questioned during my band teaching/rehearsal," $F (5, 23.984) = 10.035$, $p < .001$. Post hoc Scheffé results showed, at the $p = .01$ level, female band teachers in groups with 1–5 years ($M = 4.09$, $SD = 1.464$), 6–10 ($M = 3.81$, $SD = 1.721$) and 11–15 years ($M = 3.50$, $SD = 1.780$) teaching experience had significantly higher means than female band teachers above 25 years of experience ($M = 2.02$, $SD = 1.270$). Also, female band teachers whose years of teaching experience was 1–5 years ($M = 4.09$, $SD = 1.464$) had significantly higher means than female band teachers in the 21–25 years groups ($M = 2.06$, $SD = .772$) (See Appendix E, *Female Band Teachers' Perceptions toward Sex Stereotypes by Years of Teaching without Outliers*).

171

Sub-research Question #8-8: Are there mean significant differences in the female band teachers' perceptions of sex stereotypes by years of band teaching experience? (Survey Questions 6 & 15 – 5 items)

The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of sex stereotypes by years of band teaching experience.

For the one-way MANOVA, preliminary assumption testing was conducted. Univariate outliers were assessed and found by examining the boxplot within the Sex Stereotypes Scales (See Figure 4.22). The outliers of Case ID Number were displayed in Figure 4.22. Outliers are data points in a data set that lie far away from the rest of the points in the data set (Huck, 2012). Shapiro-Wilks for each level of the "years of band teaching experience" group (IVs) for each Sex Stereotypes item (DVs) found that the assumption of normality was violated ($p > .05$). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of the Mahalanobis distance of Sex Stereotypes Scales is 17.865, which was not exceeded. This assumption of multivariate outliers was tenable. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient was less than .9. Therefore, multicollinearity was not a concern (Tabacknick & Fidell, 2019). The assumption of the homogeneity of variance-covariance of Sex Stereotypes Scales was not tenable based on the results of the Box's test $M = 151.773$, $F (75, 50017.282) = 1.885$, $p < .001$. The results of Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for five Sex Stereotypes statements were F (5,

193) = 3.477, p = .005; F (5, 193) = 6.335, p < .001; F (5, 193) = .144, p = .982; F (5,

193) = 1.778, p = .119; and F (5, 193) = 2.231, p = .053, respectively. Two statements

did not meet the assumption of homogeneity: "I was treated as if I am not competent" and

"I have been turned down for teaching band during the hiring process."

Figure 4.22

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Sex Stereotypes

and Univariate Outliers within Sex Stereotypes by Years of Band Teaching Experience

Since the assumptions were not fulfilled, Pillai's Trace was utilized when

interpreting the MANOVA results. A one-way MANOVA was utilized for the remaining

five Sex Stereotypes statements. A Bonferroni adjustment yielded an alpha level of p

= .01 for Sex Stereotypes Scales. The MANOVA results indicated a significant difference

in perceptions of Sex Stereotypes statements by years of band teaching experience.

Therefore, the null hypothesis, that there are no significant differences in female band

teachers' perceptions of sex stereotypes by years of band teaching experience, was

rejected.

The MANOVA indicated significant mean differences in perceptions of Sex

Stereotypes statements by years of band teaching experience groups. Post hoc

comparisons were conducted to evaluate pairwise differences among "years of band

173

teaching experience" groups' means. Regarding unequal sample size in each level of the group of "years of band teaching experience," Scheffé was utilized to interpret the post hoc comparisons instead of Tukey. However, two Sex Stereotypes statements did not meet the assumption of homogeneity of variance: "I was treated as if I am not competent," and "I have been turned down for teaching band during the hiring process." Because of unequal variances within these two statements, post hoc Games-Howell (Dunnet, 1980; Rusticus & Lovato, 2014) was applied to interpret the results of the pairwise differences comparisons.

Results from ANOVA indicated significant mean differences by the years of band teaching experience group for the Sex Stereotypes statement: "I have been turned down for teaching band during the hiring process," $F (5, 16.390) = 5.238$, $p < .001$. Post hoc Games-Howell results showed, at the $p = .01$ level, female band teachers in 1–5 years ($M = 3.65$, $SD = 2.126$) and 6–10 years ($M = 3.47$, $SD = 1.692$) band teaching experience had significantly higher means than female band teachers with 21–25 years ($M = 2.08$, $SD = 1.472$) and above 25 years ($M = 2.20$, $SD = 1.562$). Also, the 11–15 years groups ($M = 3.50$, $SD = 1.907$) had significantly higher means than female band teachers in the 21–25 years groups ($M = 2.08$, $SD = 1.472$) (See Appendix E, *Female Band Teachers' Perceptions toward Sex Stereotypes by Years of Band Teaching with Outliers*).

Results from ANOVA indicated significant mean differences by the band years of teaching group for the Sex Stereotypes statement, "I have had my judgment questioned during my band teaching/rehearsal," $F (5, 17.537) = 6.456$, $p < .001$. Post hoc Scheffé results showed, at the $p = .01$ level, female band teachers with 1–5 years ($M = 3.93$, $SD = 1.609$) had significantly higher means than female band teachers whose band teaching

experience was above 25 years ($M = 2.07$, $SD = 1.258$) (See Appendix E, *Female Band Teachers' Perceptions toward Sex Stereotypes by Years of Band Teaching with Outliers*).

When univariate outliers ($n = 9$), which were higher in value than the majority of the data points, were excluded, results from ANOVA indicated significant mean differences by the years of band teaching experience group in which female band teachers for the Sex Stereotypes statement: "I was treated as if I am not competent," $F (5, 10.311) = 3.788$, $p = .003$. Post hoc Games-Howell results showed, at the $p = .01$ level, female band teachers whose years of band teaching experience in 1–5 years ($M = 3.07$, $SD = 1.932$), and 6–10 years ($M = 3.24$, $SD = 1.742$) had significantly higher means than female band teachers whose band teaching experience was above 25 years ($M = 1.64$, $SD = .952$) (See Appendix E, *Female Band Teachers' Perceptions toward Sex Stereotypes by Years of Band Teaching without Outliers*).

When univariate outliers ($n = 9$), which were higher in value than the majority of the data points, were excluded, results from ANOVA indicated significant mean differences by the years of band teaching experience for the Sex Stereotypes statement, "I have been turned down for teaching band during the hiring process," $F (5, 21.954) = 7.464$, $p < .001$. Post hoc Games-Howell results showed, at the $p = .01$ level, female band teachers in 1–5 years ($M = 3.65$, $SD = 2.126$), 6–10 years ($M = 3.47$, $SD = 1.692$), and 11–15 years ($M = 3.50$, $SD = 1.907$) groups had significantly higher means than female band teachers 21–25 years of band teaching experience ($M = 1.50$, $SD = .607$). Also, female band teachers with 1–5 years of band teaching experience ($M = 3.65$, $SD = 2.126$) had significantly higher means than female band teachers whose band teaching experience was above 25 years ($M = 2.04$, $SD = 1.457$) (See Appendix E, *Female Band*

Teachers' Perceptions toward Sex Stereotypes by Years of Band Teaching without

Outliers).

When univariate outliers ($n = 9$), which were higher in value than the majority of

the data points, were excluded, results from ANOVA indicated significant mean

differences by the years of band teaching experience for the Sex Stereotypes statement, "I

have had my judgment questioned during my band teaching/rehearsal," $F (5, 24.891) =$

9.957, $p < .001$. Post hoc Scheffé results showed, at the $p = .01$ level, female band

teachers with 1–5 years ($M = 3.93$, $SD = 1.609$), 6–10 ($M = 3.85$, $SD = 1.690$) and 11–15

years ($M = 3.37$, $SD = 1.810$) of band teaching experience had significantly higher means

female band teachers whose band teaching experience was above 25 years ($M = 1.60$, SD

$= .645$). Also, female band teachers with 1–5 years of band teaching experience ($M =$

3.93, $SD = 1.609$) had significantly higher means than those with 21–25 years of band

teaching experience ($M = 2.20$, $SD = 1.508$) (See Appendix E, *Female Band Teachers'*

Perceptions toward Sex Stereotypes by Years of Band Teaching without Outliers).

Sub-research Question #8-9: Is there a significant interaction between years of

teaching experience and years of band teaching experience on female band teachers'

perceptions of sex stereotypes? (Survey Questions 5, 6 & 15 – 5 items)

The null hypothesis was:

$H_0 =$ There is no significant interaction between years of teaching experience and

years of band teaching experience on female band teachers' perceptions of sex

stereotypes.

A two-way MANOVA was conducted to determine the effects of female band

teacher years of teaching experience and female band teacher years of band teaching

experience on responses to statements measuring female band teachers' perception of sex stereotyping. The assumption of the homogeneity of variance-covariance of Sex Stereotypes Scales was not tenable based on the results of the Box's test $M = 261.490$, F (135, 5674.380) = 1.562, $p < .001$. However, Shapiro-Wilks for each level of "years of teaching experience" and "years of band teaching experience" group (IVs) for each Sex Stereotypes item (DVs) found that the assumption of normality was violated ($p > .05$). Therefore, F test for Pillai's Trace was utilized for analysis. MANOVA results indicated no significant interaction between the independent variables (Table 4.34). Therefore, the null hypothesis, that there is no significant interaction between years of teaching experience and years of band teaching experience on female band teachers' perceptions of sex stereotypes, failed to be rejected.

Table 4.34

MANOVA Results for Statements Measuring Female Band Teachers' Perceptions of Sex Stereotypes by Years of Teaching Experience and Years of Band Teaching Experience

	Pillai's Trace	F	df	Error df	Sig
Years of Teaching Experience	.113	.839	25	905	.693
Years of Band Teaching Experience	.138	1.030	25	905	.424
Years of Band Teaching Experience*Years of Band Teaching Experience	.190	1.024	35	905	.431

Sub-research Question #8-10: Are there mean significant differences in the female band teachers' perceptions of job isolation by years of teaching experience? (Survey Questions 5 & 15 – 5 items)

The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of job isolation by years of teaching experience.

For the one-way MANOVA, preliminary assumption testing was conducted. Univariate outliers were assessed and found by examining the boxplot within the Job Isolation Scales (See Figure 4.23). The outliers of Case ID Number were displayed in Figure 4.23. Outliers are data points in a data set that lie far away from the rest of the points in the data set (Huck, 2012). Shapiro-Wilks for each level of the "years of teaching experience" group (IVs) for each Job Isolation item (DVs) found that the assumption of normality was violated ($p > .05$). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of Mahalanobis distance of Job Isolation Scales was 34.904, which was exceeded. This assumption of multivariate outliers was not tenable. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient was less than .9. Therefore, multicollinearity was not a concern (Tabacknick & Fidell, 2019). The assumption of the homogeneity of variance-covariance of Job Isolation Scales was tenable based on the results of the Box's test $M = 116.031$, $F (75, 37264.843) = 1.435$, $p = .008$. The results of Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for five Job Isolation statements were $F (5, 196) = .810$, $p = .544$; $F (5, 196) = .433$, $p = .825$; $F (5, 196) = .964$, $p = .441$; $F (5, 196) = 1.998$, $p = .081$; and $F (5, 196) = 1.175$, $p = .323$, respectively. All statements met the assumption of homogeneity.

Figure 4.23

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Job Isolation

and Univariate Outliers within Job Isolation by Years of Teaching Experience

Since the assumptions were not fulfilled, Pillai's Trace was utilized when interpreting the MANOVA results. A one-way MANOVA was utilized for the remaining five Job Isolation statements. A Bonferroni adjustment yielded an alpha level of $p = .01$ for Job Isolation Scales. The MANOVA indicated no significant difference in perceptions of Job Isolation statements by years of teaching experience groups. Therefore, the null hypothesis, that there are no significant differences in female band teachers' perceptions of job isolation by years of teaching experience, failed to be rejected.

However, when univariate outliers ($n = 9$), which were higher in value than the majority of the data points, were excluded, the MANOVA results indicated a significant difference in perceptions of Job Isolation statements by years of teaching experience. Therefore, the null hypothesis, that there are no significant differences in female band teachers' perceptions of job isolation by years of teaching experience, was rejected when univariate outliers ($n = 9$) were removed from the data set.

179

When univariate outliers ($n = 9$), which were higher in value than the majority of the data points, were excluded, results from ANOVA indicated significant mean differences by the years of teaching experience group for the Job Isolation statement, "I have felt isolated in the school," $F (5, 16.425) = 7.179$, $p < .001$. Post hoc Scheffé results showed, at the $p = .01$ level, female band teachers whose teaching experience was 1–5 years ($M = 4.61$, $SD = 1.358$) and 11–15 years ($M = 4.86$, $SD = .891$) had significantly higher means than female band teachers whose teaching experience was above 25 years ($M = 3.30$, $SD = 1.682$) (See Appendix E, *Female Band Teachers' Perceptions toward Job Isolation by Years of Teaching without Outliers*).

Sub-research Question #8-11: Are there mean significant differences in the female band teachers' perceptions of job isolation by years of band teaching experience? (Survey Questions 6 & 15 – 5 items)

The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of job isolation by years of band teaching experience.

For the one-way MANOVA, preliminary assumption testing was conducted. Univariate outliers were assessed and found by examining the boxplot within the Job Isolation Scales (See Figure 4.24). The outliers of Case ID Number were displayed in Figure 4.24. Outliers are data points in a data set that lie far away from the rest of the points in the data set (Huck, 2012). Shapiro-Wilks for each level of the "years of band teaching experience" group (IVs) for each Job Isolation item (DVs) found that the assumption of normality was violated ($p > .05$). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of Mahalanobis

180

distance of Job Isolation Scales was 34.904, which was exceeded. This assumption of multivariate outliers was not tenable. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient was less than .9. Therefore, multicollinearity was not a concern (Tabacknick & Fidell, 2019). The assumption of the homogeneity of variance-covariance of Job Isolation Scales was tenable based on the results of the Box's test $M = 101.818$, $F (75, 48257.302) = 1.265$, $p = .061$. The results of Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for five Job Isolation statements were $F (5, 196) = 1.362$, $p = .240$; $F (5, 196) = .834$, $p = .527$; $F (5, 196) = .922$, $p = .468$; $F (5, 196) = .1.467$ $p = .202$; and $F (5, 196) = .812$, $p = .543$, respectively. All statements met the assumption of homogeneity.

Figure 4.24

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Job Isolation and Univariate Outliers within Job Isolation by Years of Band Teaching Experience

Since the assumptions were not fulfilled, Pillai's Trace was utilized when interpreting the MANOVA results. A one-way MANOVA was utilized for the remaining

five Job Isolation statements. A Bonferroni adjustment yielded an alpha level of $p = .01$ for Job Isolation Scales. The MANOVA indicated no significant difference in perceptions of Job Isolation statements by years of band teach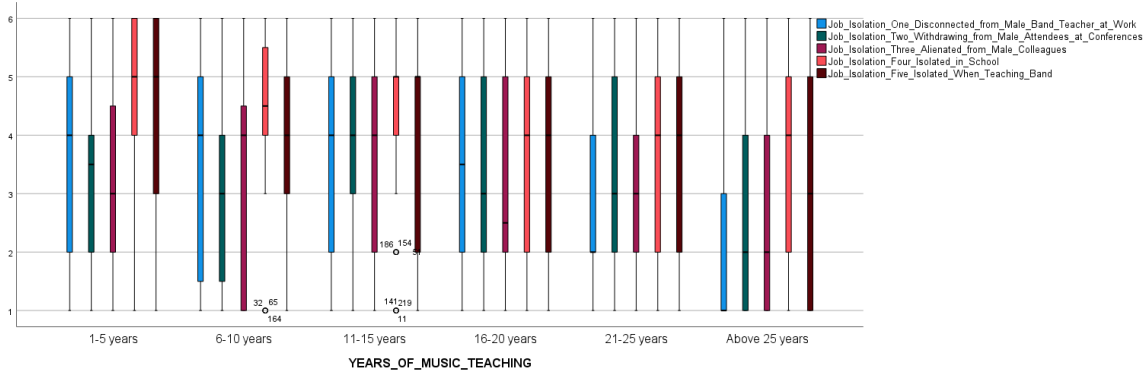ing experience groups. Therefore, the null hypothesis, that there are no significant differences in female band teachers' perceptions of job isolation by years of band teaching experience, failed to be rejected.

However, when univariate outliers ($n = 11$), which were higher in value than the majority of the data points, were excluded, the MANOVA results indicated a significant difference in perceptions of Job Isolation statements by years of band teaching experience. Therefore, without any univariate outliers ($n = 11$), the null hypothesis, that there are no significant differences in female band teachers' perceptions of job isolation by years of band teaching experience, was rejected.

When univariate outliers ($n = 11$), which were higher in value than the majority of the data points, were excluded, results from ANOVA indicated significant mean differences by the years of band teaching experience group for the Job Isolation statement, "I have felt disconnected from other male band teachers at work," F (5, 15.547) = 5.695, $p < .001$. Post hoc Scheffé results showed, at the $p = .01$ level, female band teachers whose years of band teaching experience was 1–5 years ($M = 3.57$, $SD = 1.797$) had significantly higher means than female band teachers whose band teaching experience was above 25 years ($M = 1.54$, $SD = .932$) (See Appendix E, *Female Band Teachers' Perceptions toward Job Isolation by Years of Band Teaching without Outliers*).

Sub-research Question #8-12: Is there a significant interaction between years of teaching experience and years of band teaching experience on female band teachers' perceptions of job isolation? (Survey Questions 5, 6 & 15 – 5 items)

The null hypothesis was:

H_0 = There is no significant interaction between years of teaching experience and years of band teaching experience on female band teachers' perceptions of job isolation.

A two-way MANOVA was conducted to determine the effects of female band teacher years of teaching experience and female band teacher years of band teaching experience on responses to statements measuring female band teachers' perception of job isolation. The assumption of the homogeneity of variance-covariance of Job Isolation Scales was tenable based on the results of the Box's test M = 158.884, F (120, 5983.375) = 1.098, p = .222. However, Shapiro-Wilks for each level of "years of teaching experience" and "years of band teaching experience" group (IVs) for each Job Isolation item (DVs) found that the assumption of normality was violated (p > .05). Therefore, F test for Pillai's Trace was utilized for analysis. MANOVA results indicated no significant interaction between the independent variables (Table 4.35). Therefore, the null hypothesis, that there is no significant interaction between years of teaching experience and years of band teaching experience on female band teachers' perceptions of job isolation, failed to be rejected.

Table 4.35

MANOVA Results for Statements Measuring Female Band Teachers' Perceptions of Job

Isolation by Years of Teaching Experience and Years of Band Teaching Experience

	Pillai's Trace	F	df	Error df	Sig
Years of Teaching Experience	.162	1.224	25	915	.207
Years of Band Teaching Experience	.160	1.214	25	915	.216
Years of Band Teaching Experience*Years of Band Teaching Experience	.219	1.047	40	915	.393

Research Question #9: Do female band teachers' region of school, location of school, and type of school influence perceptions of discrimination, sexism, sex stereotyping, and job isolation in their careers? (Survey Questions 4, 10, 11, and 15)

A three-way multivariate analysis of variance (MANOVA) was conducted to investigate if there was a significant difference in female band teachers' perception as measured by discrimination, sexism, sex stereotypes, and job isolation scales based on the region of school, location of school and type of school they reported. The groups of participants' region of school were divided into (1) Eastern Division, (2) North Central Division, (3) Northwest Division, (4) Southern Division, (5) Southwestern Division, and (6) Western Division (see Chapter 3: table 3.2). The Western group collapsed by combining the original Western (Arizona, California, Hawaii, Nevada, and Utah) and the original Northwest (Alaska, Idaho, Montana, Oregon, Washington, and Wyoming) because the original Northwest group had only 12 valid responses. The groups of participants' locations of schools were divided into urban, suburban, and rural. The

184

groups of participants' types of schools were divided into public and non-public (charter, private and other) schools.

Sub-research Question #9-1: Are there mean significant differences in the female band teachers' perceptions of discrimination by region of school? (Survey Questions 4 & 15 – 7 items)

The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of discrimination by region of school.

For the one-way MANOVA, preliminary assumption testing was conducted. There were no univariate outliers as assessed by examination of the boxplot within the Discrimination Scales (See Figure 4.25). Shapiro-Wilks for each level of the "region of school" group (IVs) for each Discrimination item (DVs) found that the assumption of normality was violated ($p > .05$). However, the MANOVA was reasonably robust to modest violations of normality when the sample size was at least 20 in each cell (Tabacknick & Fidell, 2019, p. 210). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of Mahalanobis distance of Discriminate Scales was 20.186, which was not exceeded. This assumption of multivariate outliers was tenable. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient is less than .9. Therefore, multicollinearity was not a concern (Tabacknick & Fidell, 2019). The assumption of the homogeneity of variance-covariance of Discrimination Scales was tenable based on the results of the Box's test $M = 126.589$ $F(112, 54349.269) = 1.034$, $p = .384$. The results of

Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for seven Discrimination statements were $F (4, 180) = .412$, $p = .800$; $F (4, 180) = .311$, $p = .870$; $F (4, 180) = .918$, $p = .454$; $F (4, 180) = .751$, $p = .558$; $F (4, 180) = 0291$, $p = .883$; $F (4, 180) = .349$, $p = .845$; and $F (4, 180) = 2.769$, $p = .029$, respectively. One statement, "I have been mistaken for teaching general music or choir instead of the band," did not meet the assumption of homogeneity.

Figure 4.25

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Discrimination and Univariate Outliers within Discrimination by Region of School

Since the assumptions were not fulfilled, Pillai's Trace was utilized when interpreting the MANOVA results. Pillai's Trace is a more robust multivariate analysis when the assumptions of homogeneity and equal variance are violated (Huck, 2012; Mertler & Vannatta, 2002; Tabacknick & Fidell, 2019). A one-way MANOVA was utilized for the remaining seven Discrimination statements. A Bonferroni adjustment resulted in an alpha level of $p = .007$ for Discrimination Scales. The MANOVA indicated no significant difference in perceptions of Discrimination statements by the region of

school. Therefore, the null hypothesis, that there are no significant differences in female band teachers' perceptions of discrimination by region of school, failed to be rejected.

Sub-research Question #9-2: Are there significant differences in the female band teachers' perceptions of discrimination by location of school? (Survey Questions 10 & 15 – 7 items)

The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of discrimination by location of school.

For the one-way MANOVA, preliminary assumption testing was conducted. There were no univariate outliers as assessed by examination of the boxplot within the Discrimination Scales (See Figure 4.26). Shapiro-Wilks for each level of the "location of school" group (IVs) for each Discrimination item (DVs) found that the assumption of normality was violated ($p > .05$). However, the MANOVA is reasonably robust to modest violations of normality when the sample size is at least 20 in each cell (Tabacknick & Fidell, 2019, p. 210). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of Mahalanobis distance of Discriminate Scales was 20.186, which was not exceeded. This assumption of multivariate outliers was tenable. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient was less than .9. Therefore, multicollinearity was not a concern (Tabacknick & Fidell, 2019). The assumption of the homogeneity of variance-covariance of Discrimination Scales was tenable based on the results of the Box's test $M = 53.639$, $F (56, 26663.048) = .890$, $p = .706$. The results of

187

Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for seven Discrimination statements were $F (2, 182) = .721$, $p = .488$; $F (2, 182) = 1.271$, $p = .283$; $F (2, 182) = .026$, $p = .974$; $F (2, 182) = .006$, $p =.994$; $F (2, 182) = 1.859$, $p = .159$; $F (2, 182) = .393$, $p = .675$; and $F (2, 182) = .227$, $p = .797$, respectively. All statements met the assumption of homogeneity.

Figure 4.26

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Discrimination and Univariate Outliers within Discrimination by Location of School

Since the assumptions were not fulfilled, Pillai's Trace was utilized when interpreting the MANOVA results. A one-way MANOVA was utilized for the remaining seven Discrimination statements. A Bonferroni adjustment resulted in an alpha level of $p = .007$ for Discrimination Scales. The MANOVA indicated no significant difference in perceptions of Discrimination statements by the location of school. Therefore, the null hypothesis, that there are no significant differences in female band teachers' perceptions of discrimination by location of school, failed to be rejected.

Sub-research Question #9-3: Are there significant differences in the female band teachers' perceptions of discrimination by type of school? (Survey Questions 11 & 15 – 7 items)
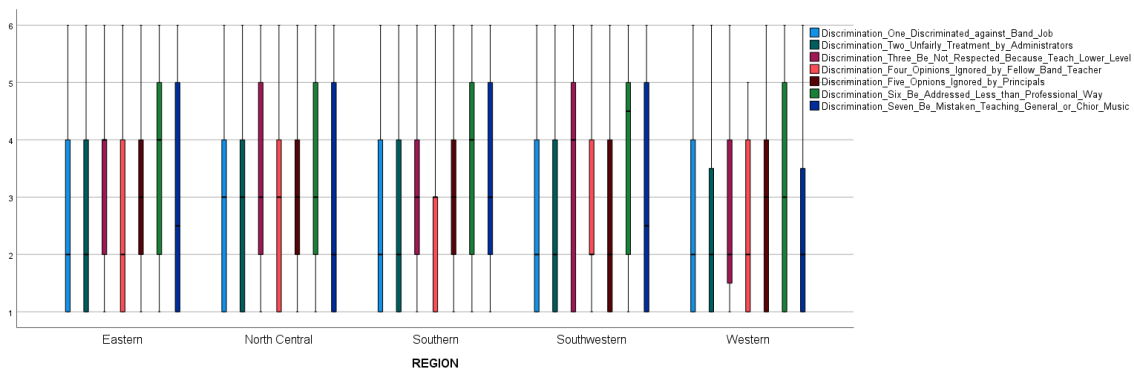
The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of discrimination by type of school.

For the one-way MANOVA, preliminary assumption testing was conducted. Univariate outliers were assessed and found by examination of the boxplot within the Discrimination Scales (See Figure 4.27). The outliers of Case ID Number were displayed in Figure 4.27. Outliers are data points in a data set that lie far away from the rest of the points in the data set (Huck, 2012). Shapiro-Wilks for each level of the "type of school" group (IVs) for each Discrimination item (DVs) found that the assumption of normality was violated ($p > .05$). However, the MANOVA is reasonably robust to modest violations of normality when the sample size is at least 20 in each cell (Tabacknick & Fidell, 2019, p.210). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of Mahalanobis distance of Discriminate Scales was 20.186, which was not exceeded. This assumption of multivariate outliers was tenable. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient was less than .9. Therefore, multicollinearity was not a concern (Tabacknick & Fidell, 2019). The assumption of the homogeneity of variance-covariance of Discrimination Scales was tenable based on the results of the Box's test $M = 38.504$, F (28, 6818.514) = 1.231, $p = .186$. The results of Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for seven Discrimination statements were F (1, 183) = .838, $p = .361$; F (1, 183) = 7.405, $p = .007$; F (1, 183) = .093, $p = .761$; F (1, 183) = 3.280, $p = .072$; F (1, 183) = .046, p

= .830; F (1, 183) = .115, p = .735; and F (1, 183) = .002, p = .964, respectively. One

statement, "I have been treated unfairly by administrators while I was a band teacher,"

did not meet the assumption of homogeneity.

Figure 4.27

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Discrimination

and Univariate Outliers within Discrimination by Type of School

Since the assumptions were not fulfilled, Pillai's Trace was utilized when

interpreting the MANOVA results. A one-way MANOVA was utilized for the remaining

seven Discrimination statements. A Bonferroni adjustment resulted in an alpha level of p

= .007 for Discrimination Scales. The MANOVA indicated no significant difference in

perceptions of Discrimination statements by the type of school. Therefore, the null

hypothesis, that there are no significant differences in female band teachers' perceptions

of discrimination by type of school, failed to be rejected.

Sub-research Question #9-4: Is there a significant interaction among region of

school, location of school, and type of school on female band teachers' perceptions of

discrimination? (Survey Questions 4, 10, 11, & 15 – 7 items)

The null hypothesis was:

190

H_0 = There is no significant interaction among region of school, location of school, and type of school on female band teachers' perceptions of discrimination.

A three-way MANOVA was conducted to determine the effects of female band teacher region of school, location of school, and type of school on responses to statements measuring female band teachers' perception of discrimination. The assumption of the homogeneity of variance-covariance of Discrimination Scales was tenable based on the results of the Box's test M = 297.367, F (252, 8857.151) = .870, p = .931. However, Shapiro-Wilks for each level of "region of school," "location of school," and "type of school" group (IVs) for each Discrimination item (DVs) found that the assumption of normality was violated (p > .05). Therefore, F test for Pillai's Trace was utilized for analysis. MANOVA results indicated no significant interaction among the independent variables (Table 4.36). Therefore, the null hypothesis, that there is no significant interaction among region of school, location of school, and type of school on female band teachers' perceptions of discrimination, failed to be rejected.

Table 4.36

MANOVA Results for Statements Measuring Female Band Teachers' Perceptions of

Discrimination by Region of School, Location of School, and Type of School

	Pillai's Trace	F	df	Error df	Sig
Region of School	.136	.777	28	620	.789
Location of School	.070	.798	14	306	.671
Type of School	.017	.369	7	152	.919
Region of School*Location of School	.368	1.097	56	1106	.293
Region of School*Type of School	.118	.670	28	620	.902
Location of School*Type of School	.066	.752	14	306	.721
Region of School*Location of School*Type of School	.148	.679	35	780	.922

Sub-research Question #9-5: Are there significant mean differences in the female band teachers' perceptions of sexism by region of school? (Survey Questions 4 & 15 – 5 items)
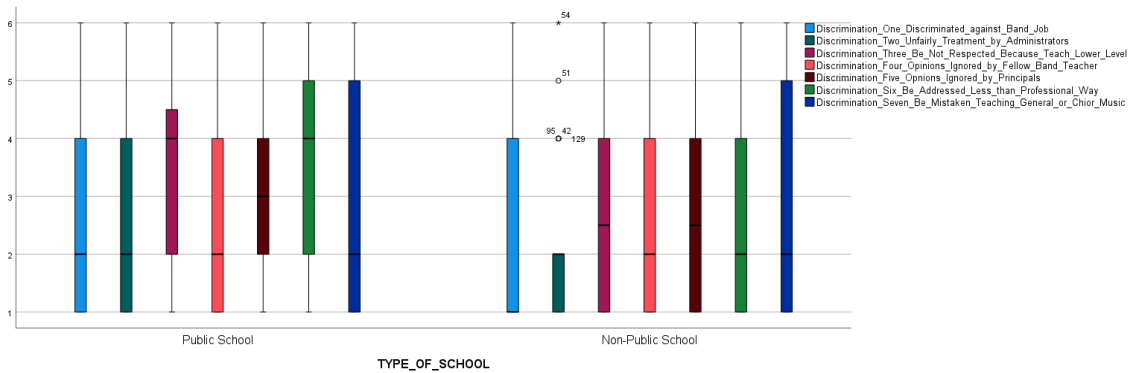
The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of sexism by region of school.

For the one-way MANOVA, preliminary assumption testing was conducted. Univariate outliers were assessed and found by examining the boxplot within the Sexism Scales (See Figure 4.28). The outliers of Case ID Number were displayed in Figure 4.28. Outliers are data points in a data set that lie far away from the rest of the points in the data set (Huck, 2012). Shapiro-Wilks for each level of the "region of school" group (IVs) for each Sexism (DVs) found that the assumption of normality was violated ($p > .05$). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of Mahalanobis distance of Sexism Scales was 27.151, which was exceeded. This assumption of multivariate outliers was not tenable. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient was less than .9. Therefore, multicollinearity was not a concern (Tabacknick & Fidell, 2019). The assumption of the homogeneity of variance-covariance of Sexism Scales was tenable based on the results of the Box's test $M = 98.311$, $F (60, 63571.028) = 1.542$, $p = .004$. The results of Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for five Sexism statements were $F (4, 186) = .615$, $p = .652$; $F (4, 186) = 1.665$, $p = .160$; $F (4, 186) = .320$, $p = .864$;

F (4, 186) = 2.294, p = .061; and F (4, 186) = 1.615, p = .172, respectively. All

statements met the assumption of homogeneity.

Figure 4.28

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Sexism and

Univariate Outliers within Sexism by Region of School

Since the assumptions were not fulfilled, Pillai's Trace was utilized when

interpreting the MANOVA results. A one-way MANOVA was utilized for the remaining

five Sexism statements. A Bonferroni adjustment yielded an alpha level of p = .01 for

Sexism Scales. The MANOVA indicated no significant difference in perceptions of

Sexism statements by the region of school. Therefore, the null hypothesis, that there are

no significant differences in female band teachers' perceptions of sexism by region of

school, failed to be rejected.

Sub-research Question #9-6: Are there significant mean differences in the female

band teachers' perceptions of sexism by location of school? (Survey Questions 10 &

15 – 5 items)

The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of sexism by location of school.

For the one-way MANOVA, preliminary assumption testing was conducted. Univariate outliers were assessed and found by examining the boxplot within the Sexism Scales (See Figure 4.29). The outliers of Case ID Number were displayed in Figure 4.29. Outliers are data points in a data set that lie far away from the rest of the points in the data set (Huck, 2012). Shapiro-Wilks for each level of the "location of school" group (IVs) for each Sexism item (DVs) found that the assumption of normality was violated ($p > .05$). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of Mahalanobis distance of Sexism Scales was 27.151, which was exceeded. This assumption of multivariate outliers was not tenable. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient was less than .9. Therefore, multicollinearity was not a concern (Tabacknick & Fidell, 2019). The assumption of the homogeneity of variance-covariance of Sexism Scales was tenable based on the results of the Box's test $M = 50.129$, $F (30, 30925.647) = 1.588$, $p = .022$. The results of Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for five Sexism statements were $F (2, 188) = .486$, $p = .616$; $F (2, 188) = 3.809$, $p = .024$; $F (2, 188) = 1.135$, $p = .324$; $F (2, 188) = 4.090$, $p = .018$; and $F (2, 188) = 1.371$, $p = .256$, respectively. Two statements did not meet the assumption of homogeneity: "I have earned less money than male teachers who teach the same level of the band" and "I have trouble finding a band job because I am a female."

Figure 4.29

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Sexism and

Univariate Outliers within Sexism by Location of School

Since the assumptions were not fulfilled, Pillai's Trace was utilized when

interpreting the MANOVA results. A one-way MANOVA was utilized for the remaining

five Sexism statements. A Bonferroni adjustment yielded an alpha level of $p = .01$ for

Sexism Scales. Results of the MANOVA indicated no significant difference in

perceptions of Sexism statements by the location of school groups. Therefore, the null

hypothesis, that there are no significant differences in female band teachers' perceptions

of sexism by location of school, failed to be rejected.

Sub-research Question #9-7: Are there significant mean differences in the female

band teachers' perceptions of sexism by type of school? (Survey Questions 11 & 15 –
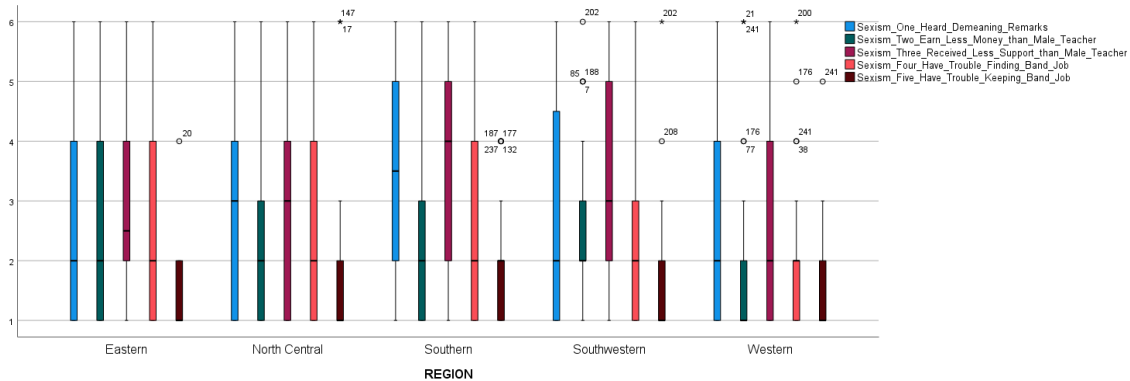
5 items)

The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of

sexism by type of school.

For the one-way MANOVA, preliminary assumption testing was conducted. Univariate outliers were assessed and found by examining the boxplot within the Sexism Scales (See Figure 4.30). The outliers of Case ID Number were displayed in Figure 4.30. Outliers are data points in a data set that lie far away from the rest of the points in the data set (Huck, 2012). Shapiro-Wilks for each level of the "type of school" group (IVs) for each Sexism item (DVs) found that the assumption of normality was violated ($p > .05$). However, the MANOVA is reasonably robust to modest violations of normality when the sample size is at least 20 in each cell (Tabacknick & Fidell, 2019, p. 210). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of Mahalanobis distance of Sexism Scales was 27.151, which was exceeded. This assumption of multivariate outliers was not tenable. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient was less than .9. Therefore, multicollinearity was not a concern (Tabacknick & Fidell, 2019). The assumption of the homogeneity of variance-covariance of Sexism Scales was not tenable based on the results of the Box's test $M = 47.891$, $F (15, 7566.461) = 2.955$, $p < .001$. The results of Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for five Sexism statements were $F (1, 189) = 1.037$, $p = .310$; $F (1, 189) = 4.094$, $p = .044$; $F (1, 189) = .421$, $p = .517$; $F (1, 189) = 4.264$, $p = .040$; and $F (1, 189) = 3.135$, $p = .078$, respectively. One statement, "I have trouble finding a band job because I am a female," did not meet the assumption of homogeneity.

Figure 4.30

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Sexism and

Univariate Outliers within Sexism by Type of School

Since the assumptions were not fulfilled, Pillai's Trace was utilized when interpreting the MANOVA results. A one-way MANOVA was utilized for the remaining five Sexism statements. A Bonferroni adjustment yielded an alpha level of $p = .01$ for Sexism Scales. The MANOVA indicated no significant differen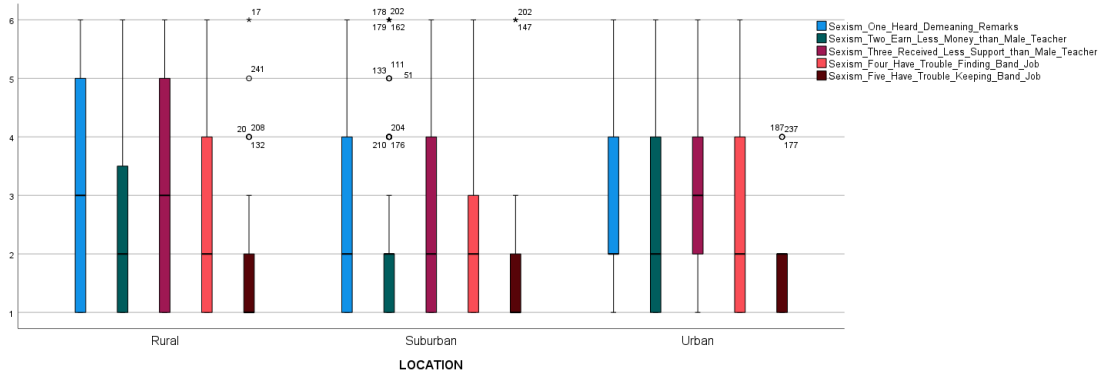ce in perceptions of Sexism statements by the type of school groups. Therefore, the null hypothesis, that there are no significant differences in female band teachers' perceptions of sexism by type of school, failed to be rejected.

Sub-research Question #9-8: Is there a significant interaction among region of school, location of school, and type of school on female band teachers' perceptions of sexism? (Survey Questions 4, 10, 11, and 15 – 5 items)

The null hypothesis was:

H_0 = There is no significant interaction among region of school, location of school, and type of school on female band teachers' perceptions of sexism.

A three-way MANOVA was conducted to determine the effects of region of school, location of school, and type of school on responses to statements measuring female band teachers' perception of sexism. The assumption of the homogeneity of variance-covariance of Sexism Scales was not tenable based on the results of the Box's test $M = 320.788$, F (165, 8102.930) = 1.544, $p < .001$. However, Shapiro-Wilks for each level of "region of school," "location of school," and "type of school" group (IVs) for each Sexism item (DVs) found that the assumption of normality was violated ($p > .05$). Therefore, F test for Pillai's Trace was utilized for analysis. MANOVA results indicated no significant interaction among the independent variables (Table 4.37). Therefore, the null hypothesis, that there is no significant interaction among region of school, location of school, and type of school on female band teachers' perceptions of sexism, failed to be rejected.

Table 4.37

MANOVA Results for Statements Measuring Female Band Teachers' Perceptions of Sexism by Region of School, Location of School, and Type of School

	Pillai's Trace	F	df	Error df	Sig
Region of School	.189	1.615	20	652	.044
Location of School	.047	.777	10	322	.651
Type of School	.044	1.466	5	160	.204
Region of School*Location of School	.254	1.095	40	820	.319
Region of School*Type of School	.151	1.277	20	652	.187
Location of School*Type of School	.014	.227	10	322	.994
Region of School*Location of School*Type of School	.139	.940	25	820	.549

Sub-research Question #9-9: Are there significant mean differences in the female band teachers' perceptions of sex stereotypes by region of school? (Survey Questions 4 & 15 – 5 items)
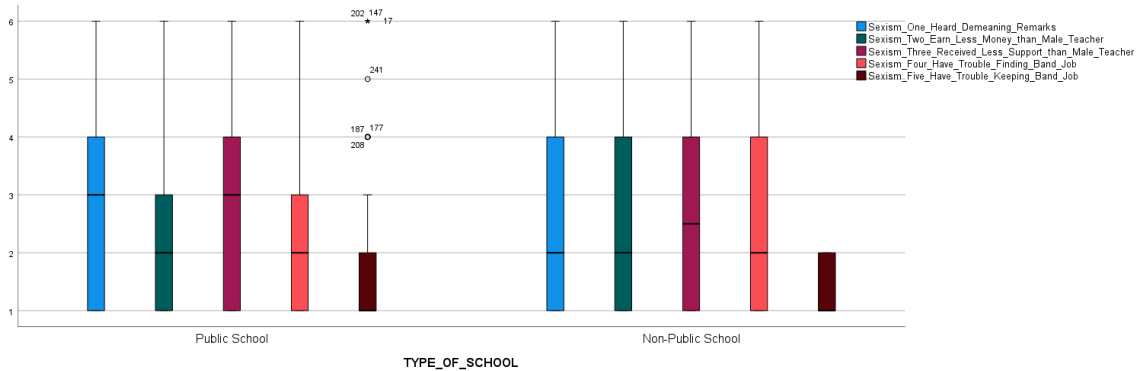
The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of sex stereotypes by region of school.

For the one-way MANOVA, preliminary assumption testing was conducted. There were no univariate outliers as assessed by examination of the boxplot within the Sex Stereotypes Scales (See Figure 4.31). Shapiro-Wilks for each level of the "region of school" group (IVs) for each Sex Stereotypes item (DVs) found that the assumption of normality was violated ($p > .05$). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of the Mahalanobis distance of Sex Stereotypes Scales was 17.865, which was not exceeded. This assumption of multivariate outliers was tenable. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient is less than .9. Therefore, multicollinearity was not a concern (Tabacknick & Fidell, 2019). The assumption of the homogeneity of variance-covariance of Sex Stereotypes Scales was tenable based on the results of the Box's test $M = 77.927$, $F (60, 69274.305) = 1.225$, $p = .113$. The results of Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for five Sex Stereotypes statements were $F (4, 194) = 1.918$, $p = .109$; $F (4, 194) = 1.648$, $p = .164$; $F (4, 194) = 1.776$, $p = .135$; $F (4, 194) = 1.381$, p

= .242; and $F (4, 194) = .677$, $p = .609$, respectively. All statements met the assumption

of homogeneity.

Figure 4.31

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Sex Stereotypes

and Univariate Outliers within Sex Stereotypes by Region of School

Since the assumptions were not fulfilled, Pillai's Trace was utilized when

interpreting the MANOVA results. Pillai's Trace is a more robust multivariate analysis

when the assumptions of homogeneity and equal variance are violated (Huck, 2012;

Mertler & Vannatta, 2002; Tabacknick & Fidell, 2019). A one-way MANOVA was

utilized for the remaining five Sex Stereotypes statements. A Bonferroni adjustment

yielded an alpha level of $p = .01$ for Sex Stereotypes Scales. The MANOVA indicated no

significant difference in perceptions of Sex Stereotypes statements by the region of

school groups. Therefore, the null hypothesis, that there are no significant differences in

female band teachers' perceptions of sex stereotypes by region of school, failed to be

rejected.

Sub-research Question #9-10: Are there significant mean differences in the female

band teachers' perceptions of sex stereotypes by location of school? (Survey

Questions 10 & 15 – 5 items)

The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of sex stereotypes by location of school.

For the one-way MANOVA, preliminary assumption testing was conducted. There were no univariate outliers as assessed by examination of the boxplot within the Sex Stereotypes Scales (See Figure 4.32). Shapiro-Wilks for each level of the "location of school" group (IVs) for each Sex Stereotypes item (DVs) found that the assumption of normality was violated ($p > .05$). However, the MANOVA is reasonably robust to modest violations of normality when the sample size is at least 20 in each cell (Tabacknick & Fidell, 2019, p. 210). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of the Mahalanobis distance of Sex Stereotypes Scales was 17.865, which was not exceeded. This assumption of multivariate outliers was tenable. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient was less than .9. Therefore, multicollinearity was not a concern (Tabacknick & Fidell, 2019). The assumption of the homogeneity of variance-covariance of Sex Stereotypes Scales was tenable based on the results of the Box's test $M = 39.984$, $F (30, 23735.951) = 1.265$, $p = .152$. The results of Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for five Sex Stereotypes statements were $F (2, 196) = .906$, $p = .406$; $F (2, 196) = 1.320$, $p = .274$; $F (2, 196) = .448$, $p = .640$; $F (2, 196) = .254$, $p = .776$; and $F (2, 196) = .361$, $p = .697$, respectively. All statements met the assumption of homogeneity.

Figure 4.32

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Sex Stereotypes

and Univariate Outliers within Sex Stereotypes by Location of School

Since the assumptions were not fulfilled, Pillai's Trace was utilized when interpreting the MANOVA results. A one-way MANOVA was utilized for the remaining five Sex Stereotypes statements. A Bonferroni adjustment yielded an alpha level of *p* = .01 for Sex Stereotypes Scales. The MANOVA indicated no significant difference in perceptions of Sex Stereotypes statements by the location of school groups. Therefore, the null hypothesis, that there are no significant differences in female band teachers' perceptions of sex stereotypes by location of school, failed to be rejected.

Sub-research Question #9-11: Are there significant mean differences in the female band teachers' perceptions of sex stereotypes by type of school? (Survey Questions 11 & 15 – 5 items)

The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of sex stereotypes by type of school.
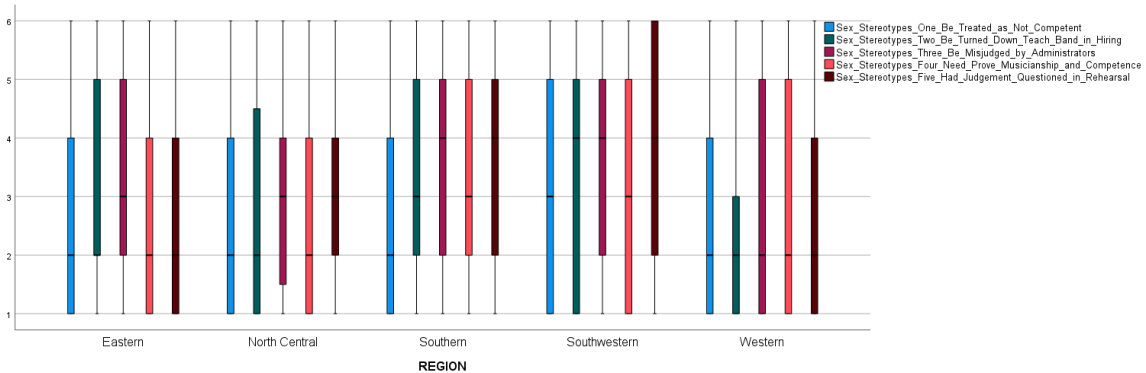
For the one-way MANOVA, preliminary assumption testing was conducted. There were no univariate outliers as assessed by examination of the boxplot within the Sex Stereotypes Scales (See Figure 4.33). Shapiro-Wilks for each level of the "type of school" group (IVs) for each Sex Stereotypes item (DVs) that the assumption of normality was violated ($p > .05$). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of the Mahalanobis distance of Sex Stereotypes Scales was 17.865, which was not exceeded. This assumption of multivariate outliers was tenable. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient is less than .9. Therefore, multicollinearity was not a concern (Tabacknick & Fidell, 2019). The assumption of the homogeneity of variance-covariance of Sex Stereotypes Scales was tenable based on the results of the Box's test $M = 7.840$, $F (15, 8181.372) = .485$, $p = .949$. The results of Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for five Sex Stereotypes statements were $F (1, 197) = .151$, $p = .698$; $F (1, 197) = .023$, $p = .880$; $F (1, 197) = 2.721$, $p = .101$; $F (1, 197) = .022$, $p = .882$; and $F (1, 197) = 362$, $p = .548$, respectively. All statements met the assumption of homogeneity.

Figure 4.33

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Sex Stereotypes

and Univariate Outliers within Sex Stereotypes by Type of School

Since the assumptions were not fulfilled, Pillai's Trace was utilized when interpreting the MANOVA results. A one-way MANOVA was utilized for the remaining five Sex Stereotypes statements. A Bonferroni adjustment yielded an alpha level of $p = .01$ for Sex Stereotypes Scales. The MANOVA indicated no significant difference in perceptions of Sex Stereotypes statements by the type of school groups. Therefore, the null hypothesis, that there are no significant differences in female band teachers' perceptions of sex stereotypes by type of school, failed to be rejected.

Sub-research Question #9-12: Is there a significant interaction among region of school, location of school, and type of school on female band teachers' perceptions of sex stereotypes? (Survey Questions 4, 10, 11, and 15 – 5 items)

The null hypothesis was:

H_0 = There is no significant interaction among region of school, location of school, and type of school on female band teachers' perceptions of sex stereotypes.

A three-way MANOVA was conducted to determine the effects of region of school, location of school, and type of school on responses to statements measuring

204

female band teachers' perception of sex stereotypes. The assumption of the homogeneity of variance-covariance of Sex Stereotypes Scales was tenable based on the results of the Box's test $M = 296.050$, $F (180, 5995.137) = 1.264$, $p = .010$. However, Shapiro-Wilks for each level of "region of school," "location of school," and "type of school" group (IVs) for each Sex Stereotypes item (DVs) found that the assumption of normality was violated ($p > .05$). Therefore, F test for Pillai's Trace was utilized for analysis. MANOVA results indicated no significant interaction among the independent variables (Table 4.38). Therefore, the null hypothesis, that there is no significant interaction among region of school, location of school, and type of school on female band teachers' perceptions of sex stereotypes, failed to be rejected.

Table 4.38

MANOVA Results for Statements Measuring Female Band Teachers' Perceptions of Sex Stereotypes by Region of School, Location of School, and Type of School

	Pillai's Trace	F	df	Error df	Sig
Region of School	.127	1.119	20	684	.324
Location of School	.040	.694	10	338	.730
Type of School	.026	.881	5	168	.495
Region of School*Location of School	.254	1.150	40	860	.244
Region of School*Type of School	.153	1.362	20	684	.133
Location of School*Type of School	.069	1.208	10	338	.284
Region of School*Location of School*Type of School	.183	1.307	25	860	.144

Sub-research Question #9-13: Are there significant mean differences in the female band teachers' perceptions of job isolation by region of school? (Survey Questions 4 & 15 – 5 items)
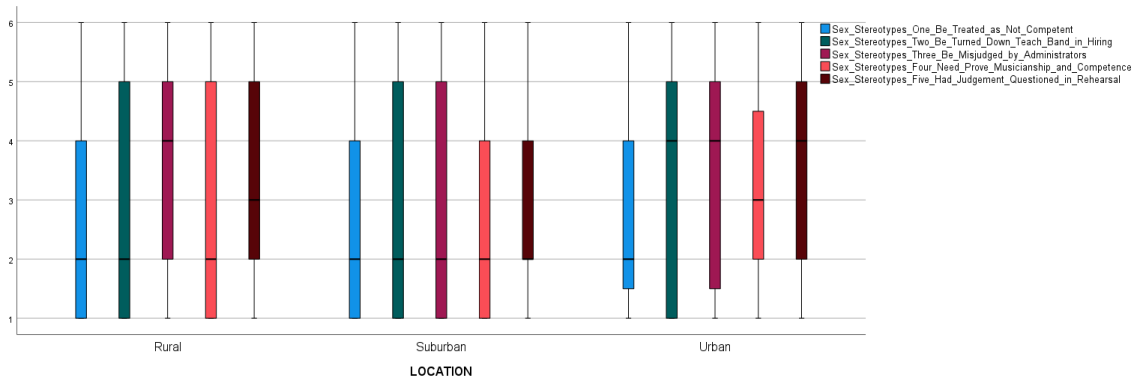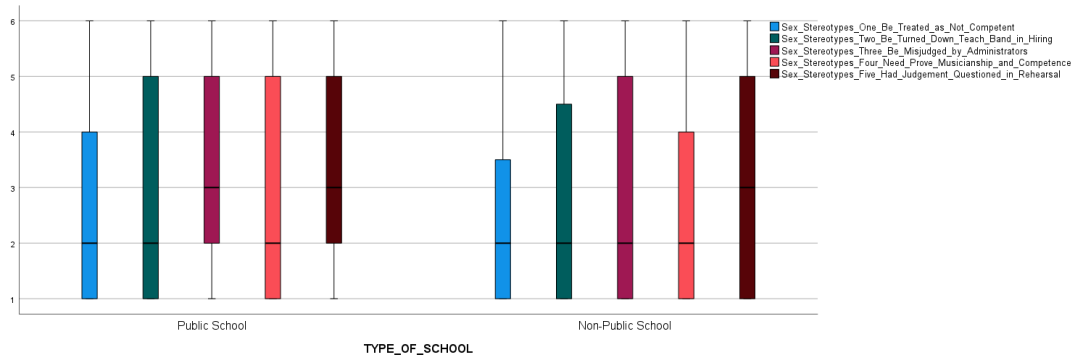
The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of job isolation by region of school.

For the one-way MANOVA, preliminary assumption testing was conducted. Univariate outliers were assessed and found by examining the boxplot within the Job Isolation Scales (See Figure 4.34). The outliers of Case ID Number were displayed in Figure 4.34. Outliers are data points in a data set that lie far away from the rest of the points in the data set (Huck, 2012). Shapiro-Wilks for each level of the "region of school" group (IVs) for each Job Isolation item (DVs) found that the assumption of normality was violated ($p > .05$). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of Mahalanobis distance of Job Isolation Scales was 34.904, which was exceeded. This assumption of multivariate outliers was not tenable. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient was less than .9. Therefore, multicollinearity was not a concern (Tabacknick & Fidell, 2019). The assumption of the homogeneity of variance-covariance of Job Isolation Scales was tenable based on the results of the Box's test $M = 63.785$, $F (60, 69563.086) = 1.004$, $p = .468$. The results of Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for five Job Isolation statements were $F (4, 197) = .551$, $p = .699$; $F (4, 197) = .776$, $p = .542$; $F (4, 197) = 1.034$, $p = .391$; $F (4, 197) = 1.677$, $p = .157$; and $F (4, 197) = .349$, $p = .845$, respectively. All statements met the assumption of homogeneity.

Figure 4.34

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Job Isolation

and Univariate Outliers within Job Isolation by Region of School

Since the assumptions were not fulfilled, Pillai's Trace was utilized when

interpreting the MANOVA results. A one-way MANOVA was utilized for the remaining

five Job Isolation statements. A Bonferroni adjustment yielded an alpha level of $p = .01$

for Job Isolation Scales. The MANOVA indicated no significant difference in perceptions

of Job Isolation statements by the region of school groups. Therefore, the null hypothesis,

that there are no significant differences in female band teachers' perceptions of job

isolation by region of school, failed to be rejected.

Sub-research Question #9-14: Are there significant mean differences in the female

band teachers' perceptions of job isolation by location of school? (Survey Questions

10 & 15 – 22 items)

The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of

job isolation by location of school.

For the one-way MANOVA, preliminary assumption testing was conducted.

Univariate outliers were assessed and found by examining the boxplot within the Job

Isolation Scales (See Figure 4.35). The outliers of Case ID Number were displayed in

Figure 4.35. Outliers are data points in a data set that lie far away from the rest of the

points in the data set (Huck, 2012). Shapiro-Wilks for each level of the "location of

school" group (IVs) for each Sex Stereotypes item (DVs) found that the assumption of

normality was violated ($p > .05$). Mahalanobis distance measure was used to assess

multivariate outliers for each case. The maximum value of Mahalanobis distance of Job

Isolation Scales was 34.904, which was exceeded. This assumption of multivariate

outliers was not tenable. Inspection of the correlation coefficients among the dependent

variables was significant ($p < .001$); therefore, the assumptions of linearity were

satisfactory. Also, each correlation coefficient was less than .9. Therefore,

multicollinearity was not a concern (Tabacknick & Fidell, 2019). The assumption of the

homogeneity of variance-covariance of Job Isolation Scales was tenable based on the

results of the Box's test $M = 46.819$, $F (30, 32838.054) = 1.487$, $p = .042$. The results of

Levene's test of equality of error provided evidence that the assumption of homogeneity

of variance across groups for five Job Isolation statements were $F (2, 199) = .274$, p

$= .761$; $F (2, 199) = .931$, $p = .396$; $F (2, 199) = .067$, $p = .935$; $F (2, 199) = 1.779$, p

$= .171$; and $F (2, 199) = 1.197$, $p = .304$, respectively. All statements met the assumption

of homogeneity.

Figure 4.35

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Job Isolation

and Univariate Outliers within Job Isolation by Location of School

Since the assumptions were not fulfilled, Pillai's Trace was utilized when

interpreting the MANOVA results. Pillai's Trace is a more robust multivariate analysis

when the assumptions of homogeneity and equal variance are violated (Huck, 2012;

Mertler & Vannatta, 2002; Tabacknick & Fidell, 2019). A one-way MANOVA was

utilized for the remaining five Job Isolation statements. A Bonferroni adjustment yielded

an alpha level of $p = .01$ for Job Isolation Scales. The MANOVA indicated no significant

difference in perceptions of Job Isolation statements by the location of school groups.

Therefore, the null hypothesis, that there are no significant differences in female band

teachers' perceptions of job isolation by location of school, failed to be rejected.

Sub-research Question #9-15: Are there significant mean differences in the female

band teachers' perceptions of job isolation by type of school? (Survey Questions 11
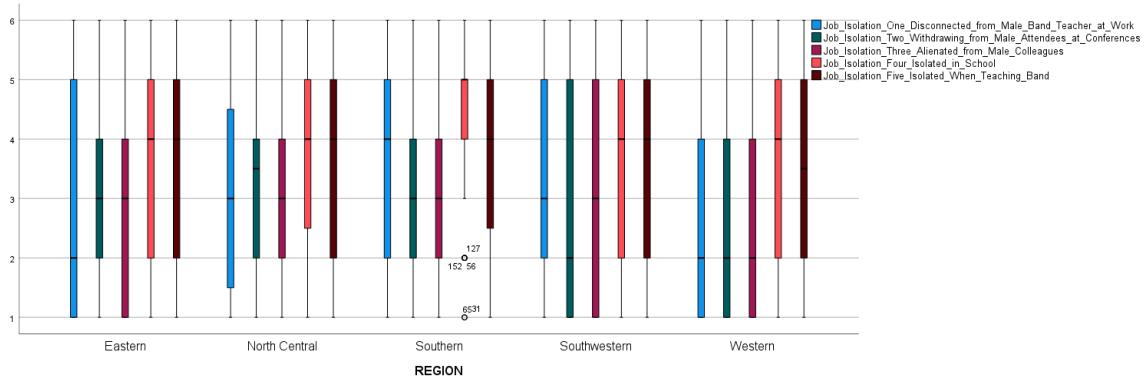
& 15 – 5 items)

The null hypothesis was:

H_0 = There are no significant differences in female band teachers' perceptions of job isolation by type of school.

For the one-way MANOVA, preliminary assumption testing was conducted. There were no univariate outliers as assessed by examination of the boxplot within the Job Isolation Scales (See Figure 4.36). Shapiro-Wilks for each level of the "type of school" group (IVs) for each Sex Stereotypes item (DVs) that the assumption of normality was violated ($p > .05$). Mahalanobis distance measure was used to assess multivariate outliers for each case. The maximum value of Mahalanobis distance of Job Isolation Scales was 34.904, which was exceeded. This assumption of multivariate outliers was not tenable. Inspection of the correlation coefficients among the dependent variables was significant ($p < .001$); therefore, the assumptions of linearity were satisfactory. Also, each correlation coefficient was less than .9. Therefore, multicollinearity was not a concern (Tabacknick & Fidell, 2019). The assumption of the homogeneity of variance-covariance of Job Isolation Scales was tenable based on the results of the Box's test $M = 13.003$, $F (15, 6888.648) = .800$, $p = .679$. The results of Levene's test of equality of error provided evidence that the assumption of homogeneity of variance across groups for five Job Isolation statements were $F (1, 200) = .108$, $p = .743$; $F (1, 200) = 2.823$, $p = .095$; $F (1, 200) = 3.712$, $p = .055$; $F (1, 200) = 1.929$, $p = .166$; and $F (1, 200) = 102$, $p = .750$, respectively. All statements met the assumption of homogeneity.

Figure 4.36

Likert-Type Scale Results of Female Band Teachers' Perceptions toward Job Isolation

and Univariate Outliers within Job Isolation by Type of School
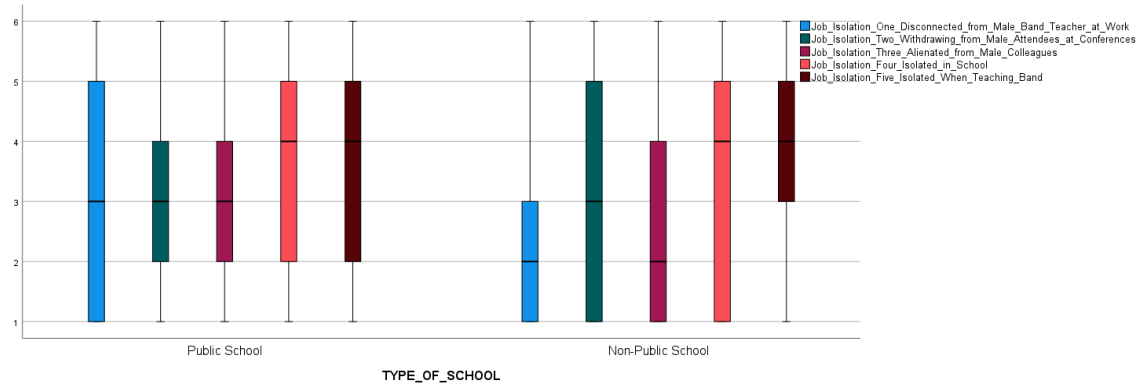
Since the assumptions were not fulfilled, Pillai's Trace was utilized when

interpreting the MANOVA results. A one-way MANOVA was utilized for the remaining

five Job Isolation statements. A Bonferroni adjustment yielded an alpha level of $p = .01$

for Job Isolation Scales. The MANOVA indicated no significant difference in perceptions

of Job Isolation statements by the type of school groups. Therefore, the null hypothesis,

that there are no significant differences in female band teachers' perceptions of job

isolation by type of school, failed to be rejected.

Sub-research Question #9-16: Is there a significant interaction among region of

school, location of school, and type of school on female band teachers' perceptions of

job isolation? (Survey Questions 4, 10, 11, and 15 – 5 items)

The null hypothesis was:

H_0 = There is no significant interaction among region of school, location of

school, and type of school on female band teachers' perceptions of job isolation.

A three-way MANOVA was conducted to determine the effects of region of school, location of school, and type of school on responses to statements measuring female band teachers' perception of job isolation. The assumption of the homogeneity of variance-covariance of Job Isolation Scales was tenable based on the results of the Box's test $M = 246.809$, $F (165, 9363.506) = 1.212$, $p = .034$. However, Shapiro-Wilks for each level of "region of school," "location of school," and "type of school" group (IVs) for each Job Isolation item (DVs) found that the assumption of normality was violated ($p > .05$). Therefore, F test for Pillai's Trace was utilized for analysis. MANOVA results indicated no significant interaction among the independent variables (Table 4.39). Therefore, the null hypothesis, that there is no significant interaction among region of school, location of school, and type of school on female band teachers' perceptions of job isolation, failed to be rejected.

Table 4.39

MANOVA Results for Statements Measuring Female Band Teachers' Perceptions of Job Isolation by Region of School, Location of School, and Type of School

	Pillai's Trace	F	df	Error df	Sig
Region of School	.167	1.514	20	696	.070
Location of School	.057	1.006	10	344	.438
Type of School	.041	1.451	5	171	.208
Region of School*Location of School	.190	.863	40	875	.712
Region of School*Type of School	.125	1.123	20	696	.320
Location of School*Type of School	.047	.831	10	344	.599
Region of School*Location of School*Type of School	.103	.734	25	875	.826

Summary

This dissertation aimed to investigate the perceptions of female elementary and middle-level school band teachers to reveal whether or not they perceived themselves as discriminated against in the profession of band teaching. Also, this study examined the perceptions of female elementary and middle-level school band teachers on mentors and role models and their perceptions of working motherhood. This research answered five descriptive questions and four parametric questions.

1. Combined responses from participants in two organizations to 22 Likert-type scale statements measuring female band teachers' perceptions of discrimination (7 items), sexism (5 items), sex stereotypes (5 items), and job isolation (5 items) had mean scores ranging from 1.63 to 3.85 on a 6-point Likert-type scale, with the standard deviations ranging from .942 to 1.872 (See Table 4.10, 4.11, 4.12 & 4.13). Additionally, the mean scores of two job isolation statements have higher means, "I have felt isolated in the school" ($M = 3.85$, $SD = 1.692$) and "I have felt isolated when teaching band" ($M = 3.74$, $SD = 1.670$) (See Table 4.13).

2. Combined responses from participants who were also a mother ($n = 132$) in two organizations reflected that female band teachers perceived their work had been affected by pregnancy ($M = 3.68$, $SD = 1.809$) and raising children ($M = 4.43$, $SD = 1.489$) (See Table 4.16). The rest of the participants without children ($n = 81$) had concerns that having children would affect their job performance ($M = 3.84$, $SD = 1.836$) (See Table 4.17).

3. Combined responses from participants in two organizations indicated that colleagues were their impactful mentors ($n = 169$), impactful female mentors ($n = 124$),

role models (*n* = 126), and female role models (*n* = 101). In the meantime, some female band teachers indicated that they did not have an impactful mentor (*n* = 8), impactful female mentor (*n* = 54), role model (*n* = 33), and female role model (*n* = 65) (See Tables 4.18, 4.19, 4.20 & 4.21).

4. Combined responses from participants in two organizations believed that mentors (*M* = 4.90, *SD* = 1.449) and role models (*M* = 4.45, *SD* = 1.674) are important to their careers. Additionally, the attribute that female band teachers looked for most in a mentor was "Knowledgeable" (*M* = 5.67, *SD* = 0.611), and the least mentor attribute was "Gender" (*M* = 2.81, *SD* = 1.520) (See Table 4.24). The successful should "demonstrate passion in the field" (*M* = 5.51, *SD* = 0.798), "provide meaningful feedback" (*M* = 5.46, *SD* = 0.810), "provide constructive feedback" (*M* = 5.40, *SD* = 0.877), "have availability for discussion/meeting" (*M* = 5.40, *SD* = 0.861), "invest in the mentor/mentee relationship" (*M* = 5.24, *SD* = 0.611) and "success in the field" (*M* = 5.16, *SD* = 1.025) (See Table 4.25)

5. Combined responses from participants in two organizations indicated that they were somewhat interested in teaching high school (*M* = 3.41, *SD* = 1.909), and they were less interested in teaching in college (*M* = 2.79, *SD* = 1.677) (See Tables 4.26 & 4.27). However, it was necessary to notice that 46.9% of respondents preferred to teach high school band, and 30.7% of respondents preferred to teach college band. The reasons for preferring to teach high school included "had success with high school-aged students" and "fully utilized the musicianship in work." The disliked reasons for teaching high school were "extra commitments" and "marching band, performance, and fundraising pressure." In addition, the reason for preferring to teach college was to pursue a "higher

paycheck." The disliked reasons for teaching college were the requirements of a "doctoral degree" and proficient "rehearsal/conducting experiences."

6. MANOVA results indicated significant mean differences in the perceptions of discrimination by age when excluding outliers. ANOVA results indicated significant mean differences by age group in Discrimination Scales: "I have been discriminated against at my band-teaching job," "I have been treated unfairly by administrators while I was a band teacher," and "I have been addressed in a less-than-professional way."

MANOVA results indicated significant mean differences in the perceptions of sexism by age when excluding outliers. ANOVA results indicated significant mean differences by age group in Sexism Scales: "I have earned less money than male teachers who teach the same level of the band."

MANOVA results indicated significant mean differences in the perceptions of sex stereotypes by age. ANOVA results indicated significant mean differences by age group in Sex Stereotypes Scales: "I have been turned down for teaching band during the hiring process," "I was treated as if I am not competent," and "I have had my judgment questioned during my band teaching/rehearsal." There were no outliers within the Sex Stereotypes Scales by age group.

MANOVA results indicated significant mean differences in the perceptions of job isolation by age when including outliers. ANOVA results indicated significant mean differences by age group in Job Isolation Scales: "I have felt disconnected from other male band teachers at work," "I have felt myself withdrawing from male attendees when attending instrumental conferences," and "I have felt isolated in the school." The same significant mean differences were maintained in the perceptions of job isolation by age

215

when excluding outliers. Further, there was an additional significant mean difference by age group in Job Isolation Scales: "I have felt isolated when teaching bands."

7. MANOVA results indicated significant mean differences in the perceptions of sexism by levels of teaching when including outliers. ANOVA results indicated significant mean differences by levels of teaching group in Sexism Scales: "I have heard demeaning remarks about myself and/or other females" and "I have earned less money than male teachers who teach the same level of the band." The same significant mean differences were maintained in the perceptions of sexism by levels of teaching when excluding outliers.

MANOVA results indicated significant mean differences in the perceptions of sex stereotypes by levels of teaching. ANOVA results indicated significant mean differences by levels of teaching group in Sex Stereotypes Scales: "I have had my judgment questioned during my band teaching/rehearsal." There were no outliers within the Sex Stereotypes Scales by levels of teaching group.

8. MANOVA results indicated significant mean differences in the perceptions of sexism by years of music teaching experience when excluding outliers. ANOVA results indicated significant mean differences by years of music teaching experience group in Sexism Scales: "I have earned less money than male teachers who teach the same level of the band."

MANOVA results indicated significant mean differences in the perceptions of sex stereotypes by years of music teaching experience when including outliers. ANOVA results indicated significant mean differences by years of music teaching experience group in Sex Stereotypes Scales: "I have been turned down for teaching band during the

216

hiring process," "I was treated as if I am not competent," and "I have had my judgment questioned during my band teaching/rehearsal." The same significant mean differences were maintained in the perceptions of sex stereotypes by years of music teaching experience when excluding outliers.

MANOVA results indicated significant mean differences in the perceptions of job isolation by years of music teaching experience when excluding outliers. ANOVA results indicated significant mean differences by years of music teaching experience in Job Isolation Scales: "I have felt isolated in the school."

9. MANOVA results indicated significant mean differences in the perceptions of sex stereotypes by years of band teaching experience when including outliers. ANOVA results indicated significant mean differences by years of band teaching experience group in Sex Stereotypes Scales: "I have been turned down for teaching band during the hiring process," "I was treated as if I am not competent," and "I have had my judgment questioned during my band teaching/rehearsal." The same significant mean differences were maintained in the perceptions of sex stereotypes by years of band teaching experience when excluding outliers.

MANOVA results indicated significant mean differences in the perceptions of job isolation by years of band teaching experience when excluding outliers. ANOVA results indicated significant mean differences by years of band teaching experience group in Job Isolation Scales: "I have felt disconnected from other male band teachers at work."

Chapter 5

DISCUSSION, FURTHER RESEARCH, AND CONCLUSIONS

The purpose of this study was to investigate the perceptions of female elementary and middle levels (middle school and junior high school) band teachers across the United States to reveal whether they perceive themselves as discriminated against in the profession of band teaching and to examine the influence of various demographic background variables: age, level of education, levels of teaching, location of school, primary instruments played, region of school, type of school, and years of band and music teaching experience. Finally, this study examined the influence of participants' mentors and role models and their perceptions of working motherhood.

The questionnaire was responded to by members from NAfME (N = 198) and WBDI (N = 136). Data were collected via an online survey tool (Qualtrics) through qualtrics.com. The survey instrument (See Appendix B) had six sections: (1) "Qualification Check," (2) "Demographic Information and Relevant Professional Information," (3) "Statements, Perceptions, and Experiences at School," (4) "Personal and Professional Life," (5)"Mentors and Role Models in Professional Life," and (6) "Additional Demographic Information" (Bovin, 2020; Johnson, 2020; Parker & Funk, 2017). Participants responded to "Statements, Perceptions, and Experiences at School" using a 6-point Likert-type scale ranging from 1 to 6 points in four categories: (1) perceptions of discrimination in general, (2) perceptions of sexism, (3) perceptions of sex stereotyping, and (4) perceptions of job isolation (Bovin, 2020; Parker & Funk, 2017).

Discussion

Demographic Background Statistics. Since the valid responses of female band teachers from NAfME ($N = 116$) and WBDI ($N = 125$) had consistent means and standard deviations in the 22 Likert-type scales of discrimination, sexism, sex stereotypes, and job isolation, the data from the two associations were combined for analysis. This study's demographic background data provided a general picture of female band teachers in elementary and middle (middle/junior high) schools in the United States today. Demographic data collection indicated that the mean age of the female band teacher participants in this study was 41.14 years, including younger than 30 years, 22.8%; between 31 and 40 years, 26.1%; between 41 and 50 years, 24.1%; and older than 50 years 24.9%. These female band teacher participants had a bachelor's degree (30.1%), master's degree (60.6%), and doctoral degree (3.73%). Their primary instrument was woodwind (56.0%), brass (26.1%), and others (12.4%). They were teaching the elementary school only (7.5%), the middle school only (27.4%), combined elementary and middle school (26.6%), combined elementary, middle, and high school (18.3%), and combined middle school and high school (14.9%) in urban (14.5%), suburban (48.5%) and rural (31.5%) areas of the Eastern (24.5%), North Central (21.2%), Southern (19.1%), Southwestern (16.6%), Western (11.6%) and Northwest (5.0%) United States. On average, participants had been teaching for 17.59 years in music and 14.45 years in band in American public schools (82.2%) and non-public schools (12.4%). [1]

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[1] These percentage did not add up to 100% because of missing data.

General Perceptions. It seems that elementary and middle-level female band teachers across the United States recognized that discrimination, sexism, sex stereotypes, and job isolation are still problems in their working environments.

Responses from members of both organizations to seven statements measuring female band teachers' perceptions of discrimination had mean scores ranging from 2.62 to 3.44 on a 6-point Likert-type scale, with standard deviations ranging from 1.608 to 1.872. Responses to five statements measuring female band teachers' perceptions of sexism had mean scores ranging from 1.63 to 3.00 on a 6-point Likert-type scale, with standard deviations ranging from .942 to 1.780. Responses to five statements measuring female band teachers' perception of sex stereotypes had mean scores ranging from 2.71 to 3.24 on a 6-point Likert-type scale, with standard deviations ranging from 1.729 to 1.851. Responses to five statements measuring female band teachers' perception of job isolation had mean scores ranging from 3.00 to 3.85 on a 6-point Likert-type scale, with standard deviations ranging from 1.646 to 1.779.

Female band teachers from NAfME and WBDI seemed to perceive some level of discrimination, sexism, sex stereotypes, and job isolation, with varying degrees of agreement and variability in their responses. Those female elementary and middle-level school band teachers who answered "somewhat disagree" believed that they were experiencing discrimination, sexism, sex stereotypes, and job isolation in the profession, which is consistent with reports of previous research about lower-level working environments in the band field (Coen-Mishlan, 2015; Fischer-Croneis, 2016; Jones, 2010; Minette, 2011; Mullan, 2014; Sears, 2010). However, 20 of the 22 items had standard deviation values for the mean scores greater than 1.5, which indicated that the

distribution of the responses was spread widely, although some mean scores were low. Additionally, the mean scores of two job isolation statements, "I have felt isolated in the school" and "I have felt isolated when teaching band," had the two highest means of 3.85 ($SD = 1.692$) and 3.74 ($SD = 1.670$), respectively. One possible reason for this is that, based on several text responses in the questionnaire, the respondents are the "only" band teachers in the school and, therefore, somewhat agreed with the feelings of isolation in the school, teaching band, or conferences.

The mean scores for the 22 statements measuring perceptions of discrimination, sexism, sex stereotypes, and job isolation were around 3, slightly above the midpoint of the 6-point Likert-type scale. The results indicated that female band teachers perceived these issues to some degree. However, the mean scores were not particularly high, suggesting the degree to which individual variation in the teachers' perceptions of discrimination, sexism, sex stereotypes, and job isolation in the workplace. Additionally, the standard deviations implied a fair amount of variability in individual responses to these statements.

Age, Levels of Teaching, and Level of Education. No significant differences were found for any Discrimination, Sexism, Sex Stereotypes, and Job Isolation statements by the interaction among Age, Levels of teaching, and Level of Education.

Age. When outliers were retained in the MANOVA analysis, no significant differences were found for any Discrimination statements by age. However, without those univariate outliers ($n = 9$), the significant difference based on age was discovered in the three Discrimination statements, "I have been discriminated against at my band-teaching job," where the mean was significantly higher for female band teachers' ages

221

21–30 ($M = 3.02$, $SD = 1.785$) than that for individuals above age 50 ($M = 1.73$, $SD = 1.116$); "I have been treated unfairly by administrators while I was a band teacher," where the mean was significantly higher for those ages 21–30 ($M = 2.89$, $SD = 1.781$), 31–40 ($M = 2.76$, $SD = 1.786$), and ages 41–50 ($M = 2.74$, $SD = 1.512$) than that for female band teachers above age 50 ($M = 1.49$, $SD = .727$); "I have been addressed in a less-than-professional way," where the mean was significantly higher for those ages 21–30 ($M = 3.75$, $SD = 1.806$) and ages 31–40 ($M = 3.90$, $SD = 1.700$) than that for female band teachers above age 50 ($M = 2.36$, $SD = 1.433$).

When outliers were retained in the MANOVA analysis, no significant differences were found for any Sexism statements by age. However, without those univariate outliers ($n = 25$), a significant difference based on age was discovered in one Sexism statement, "I have earned less money than male teachers who teach the same level of band," where the mean was significantly higher for female band teachers ages 21–30 ($M = 2.85$, $SD = 1.733$) than that for individuals ages 31–40 ($M = 1.75$, $SD = 1.056$) and above age 50 ($M = 2.36$, $SD = 1.433$).

Significant differences were found by age in three Sex Stereotypes statements, "I was treated as if I am not competent," where the mean was significantly higher for those ages 21–30 ($M = 3.21$, $SD = 1.977$) than that for female band teachers above age 50 ($M = 2.06$, $SD = 1.420$); "I have been turned down for teaching band during the hiring process," where the mean was significantly higher for those ages 21–30 ($M = 3.47$, $SD = 2.084$) and ages 31–40 ($M = 3.63$, $SD = 1.776$) than female band teachers above age 50 ($M = 2.28$, $SD = 1.512$); "I have had my judgment questioned during my band teaching/rehearsal," where the mean was significantly higher for those ages 21–30 ($M =$

4.04, *SD* = 1.532) and ages 31–40 (*M* = 3.57, *SD* = 1.756) than that for female band

teachers above age 50 (*M* = 2.32, *SD* = 1.544).

Significant differences were found by age in three Job Isolation statements, "I

have felt disconnected from other male band teachers at work," where the mean was

significantly higher for those ages 21–30 (*M* = 3.62, *SD* = 1.824), and ages 31–40 (*M* =

3.49, *SD* = 1.757) than that for female band teachers above age 50 (*M* = 2.35, *SD* =

1.632); "I have felt myself withdrawing from male attendees when attending instrumental

conferences," where the mean was significantly higher for those ages 31–40 (*M* = 3.76,

SD = 1.535) than for female band teachers above age 50 (*M* = 2.67, *SD* = 1.543); "I have

felt isolated in the school," where the mean was significantly higher for those ages 21–30

(*M* = 4.51, *SD* = 1.473) and ages 31–40 (*M* = 4.29, *SD* = 1.472) than for female band

teachers above 50 (*M* = 3.37, *SD* = 1.727). Results also showed that individuals ages 21–

30 (*M* = 4.51, *SD* = 1.473) and 31–40 (*M* = 4.29, *SD* = 1.472) had significantly higher

means than female band teachers 41–50 (*M* = 3.46, *SD* = 1.668). When univariate outliers

(*n* = 7) were excluded, one more Job Isolation statement revealed a significant difference,

"I have felt isolated when teaching bands," where the mean was significantly higher for

those ages 31–40 (*M* = 4.48, *SD* = 1.273) than for female band teachers above 50 (*M* =

3.27, *SD* = 1.794).

In the present study, female band teachers between the ages of 21 and 30 and

between the ages of 31 and 40 had significantly higher mean scores than those above 50

in perceptions of discrimination, sexism, sex stereotypes, and job isolation. These female

elementary and middle-level school band teachers younger than 40 years old perceived

discrimination, sexism, sex stereotypes, and job isolation generationally differently than

their counterparts above 50. The reasons for these findings were unknown based on the data collection in the current study. Even though previous studies have reported age discrimination or ageism based on female band teachers' personal career experiences (Bovin, 2020; Cohen-Mishlan, 2015; Fischer, 2013; Fitzpatrick, 2013; Jones, 2010; Mullan, 2014; Sears, 2010), the perceptions of discrimination, sexism, sex stereotypes, and job isolation with age differences in this study need to explore for future in-depth research.

In addition, Hancock (2008) noted that female music teachers under the age of 40 were more likely to be at high risk for attrition than older teachers, and music teachers aged 30 to 39 years were even more likely to be a high risk for attrition than younger than 30 years music teachers. These findings corresponded with increased discrimination, sex stereotypes, and job isolation faced by female band teachers younger than 40 in the present study, especially the 31–40 age group reported the highest mean score within three statements of Job Isolation Scales, one statement of Sex Stereotypes Scales and one statement of Discrimination Scales. Sindberg and Lipscomb (2005) reported that "isolating work conditions" influenced teachers to leave the profession. Therefore, future studies need to explore what causes female band teachers between 30 and 39 to experience more discrimination, sex stereotyping, and job isolation. One possible explanation is that female band teachers ages 31–40 must spend time away from jobs when pregnant and raising children (Hancock, 2008). Further, participants in an open-ended question commented that they chose to "take several years off" from full-time work when their child was young. This comment may be one reason why female music teachers between the ages of 30 and 39 were found to be at higher risk for attrition in

Hancock's (2008) study, but more research is necessary to study in more depth the correlation among age, discrimination, sex stereotyping, isolating, raising children and attrition.

Levels of teaching. No significant differences were found for any Discrimination and Job Isolation statement by the levels of teaching. Significant differences were discovered in two Sexism statements, with or without outliers, by the levels of teaching: "I have heard demeaning remarks about myself and/or other females," where the mean was significantly higher in combined middle school only ($M = 3.41$, $SD = 1.753$) than for female band teachers in combined elementary and middle school ($M = 2.33$, $SD = 1.605$); "I have earned less money than male teachers who teach the same level of the band," where the mean was significantly higher for those who taught combined middle school and high school ($M = 3.34$, $SD = 1.895$) than for female band teachers in elementary school only ($M = 1.67$, $SD = .900$). Significant differences were found in one Sex Stereotypes statement by the levels of teaching: "I have had my judgment questioned during my band teaching/rehearsal," where the mean was significantly higher for those who taught combined middle school and high school ($M = 4.10$, $SD = 1.814$) than for female band teachers in combined elementary and middle school ($M = 2.57$, $SD = 1.632$).

Female middle-level school band teachers in this study reported experiencing more sexism and sex stereotypes than elementary school band teachers. Respondents who are simultaneously teaching in high schools encounter even more problems. Pay differentials for men and women who teach both at the middle and high school level may be due to activities such as marching band, evening concerts, and field trips. Female band teachers teaching middle and high school might not receive a stipend because they do not

take those extra assignments. Additionally, elementary band teachers commonly do not have after-school programs, so men and women teaching at the elementary level receive equal pay. It is important to investigate further the reasons behind the significant difference in pay between female and male band teachers at the middle and high school levels to ensure that all teachers are fairly compensated for their work. In addition, respondents who are teaching in both middle and high schools ($M = 4.10$, $SD = 1.814$) scored higher for the "I have had my judgment questioned during my band teaching/rehearsal," which is consistent with the way that high school teachers were misjudged in terms of their musical capabilities in the previous studies (Bovin, 2020; Coen-Mishlan, 2015; Jones, 2010; Minette, 2011; Sears, 2010). In contrast, female band teachers working in both elementary and middle schools in this study reported being less likely to be challenged. It is possible that their teaching position at the lower grades is more in alignment with social expectations for their gender.

Level of Education. In this study, more than half the female band teachers (60.6%) from the two organizations NAfME (53.4%) and WBDI (67.2%) held a master's degree. Since only nine respondents held a doctoral degree (3.7%), those respondents and 146 master's-degree-holders were combined as a Graduate group ($N = 155$, 64.3%). No significant differences were found for any perception statements by the level of education.

The undergraduate and graduate respondents in this study have similar perceptions of discrimination, sexism, sex stereotypes, and job isolation, with most of their mean scores below 3.5. The finding indicated that female elementary and middle-level band teachers holding bachelor's or higher degrees are in the middle with

agreements and disagreements with experience on discrimination, sexism, sex stereotypes, and job isolation.

In addition, two Job Isolation statements: "I have felt isolated in the school" for the undergraduate group ($M = 3.94$, $SD = 1.625$) and the graduate group ($M = 3.84$, $SD = 1.721$) and "I have felt isolated when teaching bands" for the undergraduate group ($M = 3.68$, $SD = 1.644$) and the graduate group ($M = 3.73$, $SD = 1.705$), revealed higher mean scores than all the other statements. The standard deviation indicated that some female band teachers in this study agreed with being isolated in the workplace. This is consistent with the overall results that job isolation is probably a common experience for all female band teachers in this study, regardless of holding a bachelor's or higher degree.

The degrees of elementary and middle-level school band teachers were consistent with the preference for higher education among female high school band directors in high school or college (Feather, 1980; Greaves-Spurgeon, 1998). Examining why female band teachers in elementary and middle-level schools pursue master's or doctoral degrees is of interest for future study.

Primary Instrument. No significant differences were found for any perception statements by primary instrument. The majority of respondents indicated that their primary instruments are woodwind (56.0%), brass (26.1%), or other instruments (12.4%), which is consistent with the research on gender stereotypes of musical instruments (Abeles, 2009; Abeles & Porter, 1978; Delzell & Leppla, 1992; Fortney et al., 1993; Griswold & Chroback, 1981; Hallam et al., 2008; Payne, 2009). Researchers have found no change in gender stereotyping of instrument selections across three decades in the United States.

The brass and woodwind respondents in this study have similar perceptions of employment. Responses to the statement "I have had a hard time finding band jobs because I am female" for brass ($M = 2.31$, $SD = 1.581$) and woodwinds responses ($M = 2.39$, $SD = 1.473$) and the statement "I have been turned down to teach band during the hiring process" for brass ($M = 3.15$, $SD = 1.824$) and woodwinds responses ($M = 3.04$, $SD = 1.917$), suggest that female band teachers in elementary and middle-level schools, whether they play brass or woodwinds, somewhat disagree that there is a lack of job opportunities in the profession, although there a high stand deviation which indicated nearly 2 points spread. This finding contradicts Sears' (2010) finding that her participants observed more job opportunities for brass than woodwind players.

Teaching Experience. Significant differences were found for sex stereotypes and job isolation statements by years of music teaching and band teaching. First, regarding the Sex Stereotypes statements, female band teachers in this study with over 20 years of music or band teaching experienced less discrimination during the hiring process. Female band teachers in this study with 11–15 ($M = 3.65$, $SD = 1.773$) years of music teaching experience and with 6–10 ($M = 3.47$, $SD = 1.692$) years of music teaching experience, and 11–15 ($M = 3.50$, $SD = 1.907$) years of band teaching experience, they still perceived that they experienced rejection in their search for a band teaching position. Female band teachers with 1–5 years of music ($M = 4.09$, $SD = 1.464$) and band ($M = 3.93$, $SD = 1.609$) teaching experience perceived they were more likely to be questioned about their band teaching/rehearsal abilities. However, for the statements, "I was treated as if I am not competent," and "I have been turned down for teaching band during the hiring process," the mean score of the 1–5 years of music teaching experience group was not

228

significantly higher than that of any other longer years-of-music or band teaching groups. This is an interesting finding. When outliers were removed for the statement "I was treated as if I am not competent," female band teachers whose years of teaching experience was 1–5 years ($M = 3.06$, $SD = 1.969$) and the band teaching experience was 1–5 years ($M = 3.07$, $SD = 1.932$) had significantly higher means than did those with music-teaching experience above 25 years ($M = 1.56$, $SD = .867$) and band-teaching experience above 25 years ($M = 1.64$, $SD = .952$). For the statement "I have been turned down for teaching band during the hiring process, " female band teachers whose years of teaching experience was 1–5 years ($M = 3.53$, $SD = 2.135$) and band teaching experience was 1–5 years ($M = 3.65$, $SD = 2.126$) had significantly higher means than did female band teachers whose years of music-teaching experience was 21–25 years ($M = 1.38$, $SD = .500$) and above 25 years ($M = 2.07$, $SD = 1.543$), and the band-teaching experience was either 21–25 years ($M = 1.50$, $SD = .607$) or above 25 years ($M = 2.04$, $SD = 1.457$).

These findings partially coincide with those of Sears (2010). According to Sears (2010), study participants who had over 20 years of teaching experience indicated that they did not face any discrimination, while those who had short teaching experience reported more discrimination issues. Possible reasons for this outcome could not be described as discrimination and sex stereotyping based on the results of data analysis, although similar findings have been made in this study with a previous study by Sears (2010). After all, inexperienced band teachers may encounter more challenges in the band position search and careers. It is worth noting that school administrators considered inexperienced male band teachers adequate for band positions in several previous studies (Coen-Mishlan, 2015; Fischer-Croneis, 2016; Jones, 2010; Sears, 2010). Given that this

study focused on female elementary and middle-level school band teachers rather than the female high school band directors in most prior research, participants with 1–5, 6–10, and 11–15 years of music and band teaching experience likely encounter more competency prejudice, band-position rejection, and other sex stereotypes than do band teachers with more than 20 years of teaching experience. Thus, one possibility that has to be acknowledged is that those female band teachers with less teaching experience may be more likely to face additional challenges in their job search and careers due to their gender.

On the other hand, no significant differences were found for any job isolation statement by years of music teaching and years of band teaching. This is not surprising as the majority of female band teachers agreed consistently with Job Isolation statements, which suggested that female elementary and middle-level band teachers commonly felt lonely in the profession. Although the "Good Old Boys' Club" seems to be "dying out" (Fischer-Croneis, 2016; Minette, 2011; Wilson, 2014), female band teachers are probably still isolated or excluded when teaching band in schools, which is similar to findings by Fischer-Croneis (2016), Grant (2000), Minette (2011), Mullan (2014), Sears (2010). The possible reasons might be related to years of teaching experience. When the outliers were removed, two Job Isolation statements displayed significant differences. Female band teachers whose years of music teaching experience was 1–5 years ($M = 3.07$, $SD = 1.932$) and 6–10 years ($M = 3.24$, $SD = 1.742$) had significantly higher means for the statement "I have felt disconnected from other male band teachers at work" than did female band teachers whose years of teaching experience was above 25 years ($M = 1.64$, $SD = .952$). In addition, those with band teaching experience in the range of 1–5 years ($M = 3.57$, SD

= 1.797) also had significantly higher means for the statement "I have felt disconnected from other male band teachers at work" than did female band teachers whose years band teaching experience was above 25 years ($M = 1.54$, $SD = .932$). Also, female band teachers whose years of music teaching experience in 1–5 years ($M = 4.61$, $SD = 1.358$) and 11–15 years ($M = 4.86$, $SD = .891$) had significantly higher means for the statement "I have felt isolated in the school" than female band teachers whose years of teaching experience was above 25 years ($M = 3.30$, $SD = 1.682$). Compared to those female band teachers with long years of teaching experience, female band teachers with shorter years of music teaching experience felt less connection with male band teachers in the school. Grant (2000) and Gould (2001) indicated that a network of women music educators in instrumental music education would help support women music educators. Considering that the female band teachers in this study have insufficient female mentors and role models, it may be difficult for women to have active networks in the early stages of their profession in comparison to women who have taught for a longer time. Discovering the exact reasons for this will require more in-depth study.

   Region, Location, and Type of School. No significant differences were found for any perception statements by region, location, type of school, and the interaction among region, location, and type of school. All valid responses show similar mean scores from the Eastern (22.8%), North Central (21.8%), Southern (21.3%), Southwestern (16.3%), and Western (17.8%) regions of the United States. The Western group was created for this study by combining the original Western (Arizona, California, Hawaii, Nevada, and Utah) and the original Northwest (Alaska, Idaho, Montana, Oregon, Washington, and Wyoming) because the original Northwest group had only 12 valid

231

responses. The findings revealed that the responses of the majority of mean scores were below 4 by region of school except for the means of the Southern group responses of the statement "I have felt isolated in the school" ($M = 4.33$, $SD = 1.426$) and "I have felt isolated when teaching bands" ($M = 4.00$, $SD = 1.589$). For the Southern group, the first of these two job isolation statements had a higher mean range of 3.50 to 4.33 on a 6-point Likert-type scale, a standard deviation of 1.426 to 1.812, while the second had a higher mean range of 3.39 to 4.00 on a 6-point Likert-type scale, a standard deviation of 1.589 to 1.753.

All valid responses displayed similar mean scores across Rural (35.1%), Suburban (49.0%), and Urban (15.8%). The findings revealed that the responses of the majority of mean scores were below 4 by location except for the means of Urban responses to the statement "I have felt isolated in the school" ($M = 4.31$, $SD = 1.554$) and "I have felt isolated when teaching bands" ($M = 4.06$, $SD = 1.564$). Compared to means for the Suburban and Rural groups, for the Urban group, these two job isolation statements had a higher mean range of 3.52 to 4.31 on a 6-point Likert-type scale, a standard deviation of 1.554 to 1.722, and a higher mean range of 3.41 to 4.06 on a 6-point Likert-type scale, a standard deviation of 1.564 to 1.714.

All valid responses showed similar mean scores from public schools (87.6%) and non-public schools (12.4%). The non-public schools consisted of private, charter, and home schools. The findings revealed that the responses of all mean scores were below 4 by type of school. The interesting findings are the same for two job isolation statements: (1)"I have felt isolated in the school," for Public-School responses of $M = 3.92$, $SD = 1.658$, and Non-public-School responses of $M = 3.56$, $SD = 1.895$, and (2) "I have felt

isolated when teaching bands" with Public-School responses of $M = 3.69$, $SD = 1.671$, and Non-public-School responses of $M = 3.88$, $SD = 1.787$. One possible reason for this is that the "only" band teacher in the school is probably common in elementary and middle-level schools, no matter where they teach in any region, location, or type of school.

The previous studies were regional investigations. For example, Minette (2011) investigated middle school and high school female band teachers in Iowa, Wisconsin, and Minnesota. Fischer-Croneis (2016) examined middle school and combined elementary, middle, and high school female band teachers in Ohio. Mullan (2014) studied the experience of high school female band directors in California, but she had only four participants; these individuals were also teaching elementary or middle-level classes. The findings of this current study reveal that regardless of region, location, and type of school, female band teachers in elementary and middle-level schools somewhat disagree that they face discrimination, sexism, and sex stereotypes. This is consistent with Minette's (2011) regional study in the North Central part of the United States. However, this study's findings of job isolation responses somewhat contradict Fischer-Croneis's (2016) study in Ohio and Mullan's (2014) study in California. One possible reason is that the participants in Fischer-Croneis's (2016) and Mullan's (2014) studies were teaching multi-grades, but the scholars did not discuss the impact of teaching levels on the findings separately.

Furthermore, Fiske (1997) indicated that more women were employed in public school music programs than in private schools. Non-public-school female band teachers in this current study reflected similar perceptions of discrimination, sexism, sex

stereotypes, and job isolation as their counterparts in public schools. Two female teachers in the present study who taught in a home-school band program noted that "gender" was not the key factor in the discrimination they experienced in their careers. Rather, the home-school band program itself was always met with skepticism by parents or students, although they indicated that "gender" might have exacerbated this mistrust. Therefore, future research is needed on female band teachers in home-school band programs.

Motherhood. The survey results in this study provided perceptions about the impact and concerns of becoming a mother on careers. Respondents (N = 132, 54.8%) who have children agree their work had been affected by pregnancy (n = 77, 58.33%, M = 3.68, SD = 1.809) and their work had been affected by raising children (n = 101, 76.5%, M = 4.43, SD = 1.489). Respondents (N = 81, 33.6%) without children have concerns that having children will affect their careers (n = 50, 61.72%, M = 3.84, SD = 1.836). Half of the respondents who did not have children said they did not want children.

The percentage of female elementary and middle-level school band teachers with children is not as small as that of high school female band directors (Greaves-Spurgeon, 1998; Mullan, 2014; Sears, 2010). However, female elementary and middle-level band teachers have similar perceptions as well as many concerns about the impact of parenting on their profession as that high school female band directors do. According to optional comments in the survey, some respondents said they felt guilty about spending less time with their children. At the same time, they were anxious about not having enough energy to help guide their students, which is consistent with the findings in the previous studies about high school female band directors (Bovin, 2020; Jones, 2010; Fitzpatrick, 2013; Mullan, 2014; Terban, 2011).

Solutions to having children as a working mother include finding a "supportive" school or school district and collaborating with "a supportive husband," which are similar to solutions reported by Fiske (1997), Jackson (1996), and Terban (2011). Another solution offered by the present study's current female band teachers was "getting a part-time teaching job while raising children," similar to what has been reported in previous studies (Fitzpatrick, 2013; Terban, 2011). In addition, respondents in the present study suggested "taking several years off" from full-time work when their children were young and "enrolling their children in their own band program" when children grew up.

Mentors and Role Models. Grant (2000) defined a mentor as a teacher offering support, help, and teaching through example. A role model is a person who inspires and motivates others, is respected (Sealy & Singh, 2010), and is looked up to as an example and imitated by others (Bricheno & Thornton, 2007; Osabu-kle, 2005). The survey results revealed perceptions of professional mentors and role models of elementary and middle-level female band teachers. Respondents ($N = 213$) rated the importance of mentors in their profession. Female band teachers ($n = 176$, 82.63%) in this study agreed that mentors are important in their careers ($M = 4.90$, $SD = 1.449$). Respondents ($N = 203$) rated the importance of role models in their profession. Female band teachers ($n = 143$, 70.44%) in this study agreed that role models are important to their careers ($M = 4.45$, $SD = 1.674$), regardless of gender.

Female band teachers in this study indicated that most of their mentors ($N = 169$), female mentors ($N = 123$), role models ($N = 126$), and female role models ($N = 101$) were colleagues in their careers. Other types of mentors included retired band directors, their high school band directors, and professional musicians. Other role models included

clinicians, professional conductors, and high school directors. Since 54 respondents indicated they had no female mentors, and 65 respondents indicated no female role models, they likely lacked female mentors or role models. This finding is consistent with previous studies (Gould, 1996; Grant, 2000; Johnson, 2020; Jones, 2010).

Numerous studies recognized that mentors and role models could potentially help female band teachers pursue their careers (Fiske, 1997; Gould,1996, 2001; Grant, 2000; Johnson, 2020; Jones, 2010; Minette, 2011). The present study investigated attributes that female band teachers considered important for effective mentors. According to the results of the mentor's attribute, being knowledgeable ($N = 212$, $M = 5.67$, $SD = .611$) is the most highly valued attribute among the respondents, and gender ($N = 209$, $M = 2.81$, $SD = 1.520$) was the least important attribute for female band teachers in this study. Respondents ($N = 135$, 55.9%) reported not considering gender important when selecting mentors. This finding is consistent with several previous studies. For example, male mentors and role models were acceptable as long as they were excellent musicians (Fiske, 1997; Grant, 2000; Johnson, 2020; Minette, 2011). Sometimes male mentors were probably more helpful (Grant, 2000; Mullan, 2014). However, the current findings somewhat contradict Sears (2010), who reported that having same-sex mentors and role models could provide more support for female high school band directors.

Teaching at High School and College. Regarding the survey question, "I would like to teach high school band," respondents ($N = 226$, $M = 3.41$, $SD = 1.909$) rated their interest in teaching high school band. Regarding the other survey question, "I would like to teach college band," respondents ($N = 227$, $M = 2.79$, $SD = 1.677$) rated their interest in teaching college band. Female band teachers ($n = 153$, 67.40%) expressed little interest

in college teaching. Interestingly, an equal number of female band teachers ($n = 113$, 50%) were interested or not in teaching in high school.

This study's elementary and middle-level female band teachers enjoy teaching at the current school levels. The reasons could be summarized in two categories based on the optional comments from respondents in this study. First, female band teachers in this study considered music education for young musicians valuable since it paves the way for their intermediate and advanced band performances. The participants described their teaching responsibilities in the elementary or middle-level school as "a rewarding job." Second, female band teachers reported that elementary and middle-level school schedules and curricula were conducive to achieving a balance between life and work. These teachers state that, compared to high school or college teaching, they had more time to spend with their families and enough energy to cope with their teaching duties.

Being a high school band director involves not only a lot of classroom teaching and rehearsal work but also organizing many extracurricular activities, marching band performances, and field trips. In the open-ended questions, participants indicated that a high school band teaching position meant high-stress levels and additional commitments and giving up that healthy work/life balance. Respondents' comments on high school teaching expressed similar opinions to those reported by the previous scholars (Bovin, 2020; Greaves-Spurgeon, 1998; Jones, 2010; Fitzpatrick, 2013; Minette, 2011; Mullan, 2014; Terban, 2011; Sears, 2010).

However, as a personal choice, career paths depend on individual aspirations and ambitions for the career. An equal number of respondents indicated they desired to teach at the high school level as those wishing to stay at the elementary or middle levels. In the

open-ended questions, comments from some female band teachers in this study described the belief that working with high school students would increase their sense of accomplishment. Other participants noted that rehearsing for high school band students allows for fully using their musical skills and abilities. In addition, female band teachers in the present study appeared less interested in teaching college bands. They pointed out that a doctoral degree was necessary because college band teaching requires greater musical proficiency in rehearsal and conducting, but they also suggested that "higher paychecks" might motivate them to pursue college positions when they answered the open-ended question.

Future Research

The current study investigated how female elementary and middle-level band teachers in the United States perceived discrimination, motherhood, mentorship, and role models. As a result, it has generated a variety of hypotheses and findings that require further research. The followings are suggestions for potential research:

- Based on the findings of this study, further research needs to explore the reasons behind the generational differences in perceptions of discrimination, sexism, sex stereotypes, and job isolation among female elementary and middle-level band teachers. Previous research has shown that age discrimination is prevalent in the profession, but the specific factors contributing to these generational differences need to be identified. Additionally, further investigation is necessary into the correlation between age, discrimination, sex stereotyping, job isolation, raising children, and attrition among female band teachers. Understanding the reasons

238

why female elementary and middle-level school band teachers pursue master's or doctoral degrees is also an area that requires further exploration. Finally, the lack of female mentors and role models reported by the participants suggests a need for research on establishing a supportive network for women in the early stages of their careers. These future studies can provide insights into addressing the challenges faced by female band teachers and improving their professional development opportunities.

- Future research could examine the age and experiences of those in different stages of their careers since the present study found significant differences in the perception of discrimination, sexism, sex stereotypes, and job isolation by age and teaching experience among female elementary and middle-level band teachers. Future research might focus on the experiences of female band teachers in the early stages of their professions, particularly those ages 21–30 and 31–40, as well as those teaching for more than 10 or 15 years. One-on-one interviews and focus groups could be utilized to gain a deeper understanding of the difficulties these female band teachers confront. Future research would enable the exploration of specific issues, such as sex stereotypes and job isolation, that female band teachers may experience at different stages of their careers and provide insights into the specific challenges faced by female band teachers, and develop targeted interventions to promote equity and inclusion in the profession of instrumental music education.

- Since few studies focus on elementary and middle-level teachers, future research could include more qualitative studies on successful female elementary and

middle-level school band teachers. Concentrating and analyzing individual

successful stories may provide unique strategies to support female band teachers

ages 21–30 and 31–40 and provide solutions to combat the challenges of sex

stereotypes and job isolation in band teaching positions early in their careers.

- Data collection in the study indicated that male band teachers ($N = 77$) and

  transmale band teachers ($N = 8$) attempted to respond to the questionnaire.

  Therefore, it is crucial to investigate the experiences of male and transgender

  elementary and middle-level band teachers to ensure that all individuals working

  in the profession are supported and valued. Future research could conduct

  qualitative research to explore the personal experiences of discrimination faced by

  male and transgender band teachers compared to their female counterparts to

  identify any unique challenges and barriers male and transgender band teachers

  may face. Also, future research could replicate the current survey investigation

  with this population. This study could identify if male and transgender band

  teachers face workplace discrimination and, if so, what forms of discrimination

  they encounter. This information could then be used to develop targeted training

  and resources to support male and transgender band teachers. Finally, future

  research could employ a mixed methods approach, including a new national

  survey, interviews, and focus groups, concerning job satisfaction, work-life

  balance, and support networks and reveal the unique challenges and opportunities

  for male and transgender band teachers. This study could identify strategies for

  supporting male and transgender band teachers, such as developing mentoring

  programs and professional networks.

- Female band teachers in this study who are mothers reflected that their work had been affected by pregnancy and raising children. Supporting these female band teachers is essential to promote retention and career growth. Therefore, future research could conduct a longitudinal study to comprehensively understand the challenges and successes of female band teachers who are also mothers. This study could identify factors contributing to successful work-family balance and barriers to success. In the meantime, future research could also develop and test interventions such as time management training, mentorship programs, and support groups to support female band teachers who are mothers. The intervention research could also provide and collaborate with school administrators and policymakers to implement flexible policies and schedules that support the needs of working mothers.

- Data collection indicated that 46.9% of respondents preferred to teach high school band, and over 30.7% preferred to teach college band if they changed jobs. Supporting these female band teachers' career development and advancement is necessary. Therefore, future research could conduct surveys, interviews, or focus groups with female elementary and middle-level band teachers to further determine their motivations and aspirations for pursuing high school or college positions. The study could also identify factors that influence their desire to teach in high school or college and examine the barriers that prevent them from pursuing these positions, such as lack of opportunities, gender bias, or expensive degrees. Moreover, reviewing existing literature on career development and advancement for women in band teaching could provide valuable information on

effective strategies and best practices. Future research could examine the
experiences and career paths of successful female high school and college band
directors to identify common strategies and factors that contributed to their
success. Finally, to prepare female elementary and middle-level band teachers for
doctoral conducting programs, future research could examine the requirements for
applying to a doctoral conducting program and recommend strategies for
partnership or pathways for these female teachers to apply.

Conclusion

Female elementary and middle-level band teachers in the United States may
struggle less than female high school band directors with experiencing discrimination in
the profession, regardless of variables such as education, primary instruments, region,
location, and school type, which is certainly encouraging. Factors such as age, levels of
teaching, and years of teaching experience probably influence the perception of the
experience of sex stereotypes and job isolation by these female elementary and middle-
level band teachers. In this study, sex stereotypes and job isolation were seen among
female band teachers aged 21–30 and 31–40 or who had 1–5 and 6–10 years of teaching
experience, but all levels reported some discrimination, sexism, sex stereotypes, and job
isolation.

However, female elementary and middle-level band teachers experience anxiety
about becoming mothers while pursuing this career, suggesting that women teaching
band in the lower grades may face the same issues as those high school female band
directors, as described in previous studies (Bovin, 2020; Jones, 2010; Fitzpatrick, 2013;

Minette, 2011; Mullan, 2014; Terban, 2011; Sears, 2010). Therefore, female band teachers with issues or concerns about childbirth and raising children may not be able to solve the problem simply by changing their teaching grade level.

In this study, in-service female elementary and middle-level band teachers reported that the majority of their mentors and role models were their colleagues rather than through formal mentoring programs. Many female elementary and middle-level band teachers have few same-sex mentors, although they believe that gender is not a necessary attribute when selecting their mentor. Since the female band teachers in this study reported that their career aspiration was to teach in high school, mentors and role models could help support and clarify their career aspirations especially same-sex mentors, and role models could help female high school band directors gain more support, such as a professional network.

In summary, female elementary and middle-level band teachers may face less discrimination than female high school band directors today. However, concerns about childbirth and motherhood continue to cause them distress as they pursue their careers. The social system needs to provide more support for working mothers, which would help to alleviate these fears. Formal or informal mentors and role models are necessary for these women teachers in elementary and secondary schools, regardless of gender, as those professional aspirations need support from mentors whose knowledge they value. Male band conductors, administrators, and other female band directors need to support female band directors and be aware of the types of discrimination, sexism, sex stereotypes, and job isolation so that they can avoid harassing behavior that would lead to women dropping out of the profession.

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APPENDIX A

INSTITUTIONAL REVIEW BOARD APPROVAL

EXEMPTION GRANTED

Jill Sullivan
MDT: Music
480/965-7369
Jill.Sullivan@asu.edu

Dear Jill Sullivan:

On 2/8/2022 the ASU IRB reviewed the following protocol:

Type of Review:	Initial Study
Title:	A Survey of Elementary and Middle School Female Band Teachers: Sexism, Family, Mentor and Role Models.
Investigator:	Jill Sullivan
IRB ID:	STUDY00015030
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	• The Recruitment Letter, Category: Recruitment Materials; • Consent Form.docx.pdf, Category: Consent Form; • Questionnaire Word Version, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions); • Social Behavior Protocol, Category: IRB Protocol;

The IRB determined that the protocol is considered exempt pursuant to Federal Regulations 45CFR46 (2) Tests, surveys, interviews, or observation on 2/8/2022.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

If any changes are made to the study, the IRB must be notified at research.integrity@asu.edu to determine if additional reviews/approvals are required.

Changes may include but not limited to revisions to data collection, survey and/or interview questions, and vulnerable populations, etc.

REMINDER - Effective January 12, 2022, in-person interactions with human subjects require adherence to all current policies for ASU faculty, staff, students and visitors. Up-to-date information regarding ASU's COVID-19 Management Strategy can be found here. IRB approval is related to the research activity involving human subjects, all other protocols related to COVID-19 management including face coverings, health checks, facility access, etc. are governed by current ASU policy.

Sincerely,

IRB Administrator

cc: Xiaotian Xu
        Jill Sullivan
        Xiaotian Xu

APPENDIX B

INFORMED CONSENT LETTER AND QUESTIONNAIRE

<center>Cover Letter</center>

Dear Participant:

My name is Xiaotian Xu, and I am a doctoral student at Arizona State University under the direction of Professor Jill Sullivan. For my dissertation, I am studying women teaching elementary and middle/junior high school bands in the United States. Because you are part of this population of female band teachers, I invite you to please participate in this research study by completing the attached survey.

The following questionnaire will require approximately 10 minutes to complete. There is no compensation for responding, nor is there any known risk. To ensure that all information will remain completely anonymous, please do not include your name anywhere. If you choose to participate in this project, please answer all questions as accurately as possible. Participation is strictly voluntary, and you may decide not to participate at any time by exiting the questionnaire. If you choose not to participate or to withdraw from the study at any time, there will be no penalty. However, if you complete the survey you will be entered into a raffle to win a Visa eGift Card worth up to a $100 prize. The prizes will be awarded to 7 people, including 1 for $100, 1 for $50, 1 for $25, and 4 for $10. You will be directed to another web page where you enter your email to participate in this raffle and at no time will your email be associated with your survey responses. In addition, the raffle website will not save your email for future uses.

Thank you for taking the time to assist me in my dissertation research. The data collected will provide useful information regarding investigating the experiences of female elementary and middle/junior high school band teachers across the United States, and examine the influence of mentors and role models on female elementary and middle/junior high school band directors. If you need additional information or have questions, please contact me or my advisor at the emails listed below.

Sincerely,
Xiaotian Xu
Doctoral student, Music Learning and Teaching
Arizona State University
xiaotia3@asu.edu

Jill Sullivan, PhD
Professor, Music Learning and Teaching
Arizona State University
Jill.Sullivan@asu.edu

0% Survey Completion

I am a doctoral student under the direction of Dr. Jill Sullivan in the Herberger Institute for Design and the Arts, School of Music, Dance and Theatre, Music Learning and Teaching program at Arizona State University. I am conducting a research study on the perceptions of women elementary and middle/junior high school band teachers to reveal whether they perceive themselves as discriminated against in the band-teaching profession and also examine the influence of their mentors and role models.

Voluntary participants should be at least 21 years old, teaching elementary or middle/junior high school level band as part of your position, identify as a woman, and must be a music educator in the United States. I am inviting your participation, which will involve completing an online survey via Qualtrics that will take approximately 12 minutes. Your responses and identity will be completely anonymous. The researcher will never have access to your name or personal information connected to your answers. To ensure that all information will remain completely anonymous, please do not include your name or school's name at any time during the survey.

There will be multiple survey questions about your band-teaching experiences and the influence of mentors and role models. You have the right not to answer any question and to stop your participation at any time. If you choose to withdraw from the study at any time, there will be no penalty. There are no foreseeable risks or discomforts to your participation.

There is no compensation for participation in this study. However, after completing the survey, you will be provided the opportunity to enter a drawing for a Visa eGift Card worth **up to a $100 prize**. After you finish taking the survey, you will be directed to another web page not associated with the survey software or this study, where you will be asked to enter your email to participate in the drawing. The drawing website will not save your email for future use.

Although you may not directly benefit from the study, the study may provide valuable information for the band-teaching profession. The raw anonymous data will be part of an appendix in my dissertation, which could be used by future investigators to help their studies, but the data will never include your name or information that could identify you because as mentioned previously, your survey responses are anonymous.

If you would like to know the results from this study and/or have any questions concerning the research, please contact the investigators, Dr. Jill Sullivan at Jill.Sullivan@asu.edu and Xiaotian Xu at xiaotia3@asu.edu. If you have any questions about your rights as a participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788.

By checking the box below, you agree to participate in this study. By selecting "I agree," you are consenting to the conditions described above.

○ I agree

○ I disagree

Next page >

260

*1. I describe myself as

◯ Female

◯ Male

◯ Transfemale

◯ Transmale

*2. Are you currently teaching elementary (K–5) and/or middle/junior high school band
(Grade 6–9) as any position of your work?

◯ Yes

◯ No

3. Age in years:

4. In which U.S. state do you currently work?

5. Including this year, how many years have you taught music in any setting? If this is your
first year, type 1; if this is your fifteenth year, type 15, etc.

6. Including this year, how many years have you taught elementary and/or middle/junior
high school band? If this is your first year, type 1; if this is your fifteenth year, type 15, etc.

7. Please check all grades levels which you are currently teaching band.

☐ Grade 4

☐ Grade 5

☐ Grade 6

☐ Grade 7

☐ Grade 8

☐ Grade 9

☐ Grade 10

☐ Grade 11

☐ Grade 12

☐ Other (Please Specify)

8. Your primary instrument is

- ○ Bassoon
- ○ Cello

- ○ Clarinet
- ○ Electric Bass

- ○ Electric Guitar
- ○ Euphonium/Baritone

- ○ Flute
- ○ French Horn

- ○ Guitar
- ○ Harp

- ○ Oboe
- ○ Organ

- ○ Piano/Keyboard
- ○ Percussion

- ○ Saxophone
- ○ String Bass

- ○ Trombone
- ○ Trumpet

- ○ Tuba
- ○ Viola

- ○ Violin
- ○ Voice

- ○ Other (Please Specify)

9. Your highest level of education is:

○ Bachelor's degree

○ Master's degree

○ Doctoral degree (e.g.: PhD, DMA, EdD, etc.)

10. The location of your (current teaching position) school:

○ Rural

○ Suburban

○ Urban

11. Your (current position) type of school:

○ Charter School

○ Private School

○ Public School

○ Other (Please Specify) [   ]

12. I would like to teach high school band.

○ Strongly Agree

○ Agree

○ Somewhat Agree

○ Somewhat Disagree

○ Disagree

○ Strongly Disagree

13. I would like to teach college band.

◯ Strongly Agree

◯ Agree

◯ Somewhat Agree

◯ Somewhat Disgree

◯ Disagree

◯ Strongly Disagree

14. Please feel free to explain why or why not you plan to continue as an elementary and/or middle/junior high school band teacher until you retire or leave the profession?

15. The following are a list of statements related to elementary and/or middle/junior high school band teaching at your current position along with this workplace experiences. Please read each statement carefully then decide how strongly you agree or disagree with each statement based on your personal experiences.

	Strongly Agree (6)	Agree (5)	Somewhat Agree (4)	Somewhat Disagree (3)	Disagree (2)	Strongly Disagree (1)
I have been discriminated against at my current band-teaching job.	◯	◯	◯	◯	◯	◯
I have been treated unfairly by administrators because I am a female band teacher.	◯	◯	◯	◯	◯	◯
I feel like I'm not respected because I teach at the elementary or middle school levels.	◯	◯	◯	◯	◯	◯
My ideas and opinions are often ignored by fellow band teachers.	◯	◯	◯	◯	◯	◯
My ideas and opinions are often ignored by principals.	◯	◯	◯	◯	◯	◯
I have been addressed in a less-than-professional way.	◯	◯	◯	◯	◯	◯
I have been mistaken for teaching general music or choir instead of the band.	◯	◯	◯	◯	◯	◯
I have heard demeaning remarks about myself and/or other females.	◯	◯	◯	◯	◯	◯
I have earned less money than male band teachers who teach the same level of band.	◯	◯	◯	◯	◯	◯
I have received less support than male band teachers.	◯	◯	◯	◯	◯	◯
I have trouble finding a band job because I am a female.	◯	◯	◯	◯	◯	◯
I have trouble keeping a band job because I am a female.	◯	◯	◯	◯	◯	◯
I was treated as if I am not competent.	◯	◯	◯	◯	◯	◯
I have been turned down for teaching band during the hiring process.	◯	◯	◯	◯	◯	◯
I have been misjudged by school/district administrators about my capabilities.	◯	◯	◯	◯	◯	◯
I have needed to provide more evidence of my musicianship and competence than others.	◯	◯	◯	◯	◯	◯
I have had my judgment questioned during my band teaching/rehearsal.	◯	◯	◯	◯	◯	◯
I have felt disconnected from other male band teachers at work.	◯	◯	◯	◯	◯	◯
I have felt myself withdrawing from male attendees when attending instrumental conferences.	◯	◯	◯	◯	◯	◯
I have felt alienated from my male colleagues.	◯	◯	◯	◯	◯	◯
I have felt isolated in the school.	◯	◯	◯	◯	◯	◯
I have felt isolated when teaching band.	◯	◯	◯	◯	◯	◯

16. Please feel free to add any additional comments about your current position and any other instances in your workplace or the band-teaching profession that you wish to share about discrimination that you have experienced. Comments are optional.

17. Please select your current relationship status.

○ Married

○ Single

○ Other (Please Specify)

18. Do you have children?

○ Yes

○ No, and I do not want children.

○ No, but I want children one day.

19-1. Has your work been affected by a pregnancy?

○ Strongly agree

○ Agree

○ Somewhat agree

○ Somewhat disagree

○ Disagree

○ Strongly disagree

19-2. Has your work been affected by raising children?

- ◯ Strongly agree

- ◯ Agree

- ◯ Somewhat agree

- ◯ Somewhat disagree

- ◯ Disagree

- ◯ Strongly disagree

19-3. Do you have any concerns that having children will affect your job?

- ◯ Extremely concerned

- ◯ Very concerned

- ◯ Concerned

- ◯ Moderately concerned

- ◯ A little concerned

- ◯ Not at all concerned

20. Please feel free to explain your answer about having children. Comments and recommendation are optional.

21. Grant (2000) defined a mentor as a teacher who will offer support, help, and teach through example. Approximately how many mentors have you had since you began teaching?

- ◯ 1

- ◯ 2

- ◯ 3

- ◯ 4

- ◯ 5

- ◯ Other (Please Specify)

22. Who has served as an impactful mentor to you in your development as an elementary/middle/junior high school band teacher? Select all that apply

☐ Colleague

☐ College Band Director

☐ Private Lesson/Studio Teacher

☐ Professor

☐ Student Teaching Mentor Teacher

☐ None

☐ Other (Please Specify) [_____]

23. Approximately how many of these mentors were female?

◯ 1

◯ 2

◯ 3

◯ 4

◯ 5

◯ Other (Please Specify) [_____]

24. Who has served as an impactful <u>female mentor</u> to you in your development as an elementary/middle/junior high school band teacher? Select all that apply

☐ Colleague

☐ College Band Director

☐ Private Lesson/Studio Teacher

☐ Professor

☐ None

☐ Other (Please Specify) [_____]

25. How important was the impact of your mentors to the success of your career as an elementary/middle/junior high school band teacher?

○ Extremely Important

○ Very Important

○ Important

○ Moderately Important

○ Slightly Important

○ Not Important

26. When you think about selecting a mentor, please decide how important each of the following attributes of the mentor are by selecting your level of agreement for each.

	Strongly Agree (6)	Agree (5)	Somewhat Agree (4)	Somewhat Disagree (3)	Disagree (2)	Strongly Disagree (1)
Conducting/Rehearsal experiences	○	○	○	○	○	○
Gender	○	○	○	○	○	○
Knowledgeable	○	○	○	○	○	○
Personality	○	○	○	○	○	○
Professional achievements	○	○	○	○	○	○
Reputation	○	○	○	○	○	○
Other (Please Specify) _____	○	○	○	○	○	○

269

27. With a current or past mentor, what ways did they serve as a successful mentor? Please select all that apply.

	Strongly Agree (6)	Agree (5)	Somewhat Agree (4)	Somewhat Disagree (3)	Disagree (2)	Strongly Disagree (1)
Invested in the mentor/mentee relationship	○	○	○	○	○	○
Provided constructive feedback for personal growth	○	○	○	○	○	○
Demonstrated passion for the field	○	○	○	○	○	○
Was available to meet/have discussions	○	○	○	○	○	○
Provided evidence of success in the field	○	○	○	○	○	○
Provided meaningful feedback	○	○	○	○	○	○
Other (Please Specify)	○	○	○	○	○	○

28. Please explain how a female mentor impacted your career as elementary and/or middle/junior high school band teacher. Comments and recommendations are optional.

29. Role model is a person who inspires and motivates others and is respected (Sealy & Singh 2010) and is looked up to as an example and imitated by others (Bricheno & Thornton 2007; Osabu-Kle, 2005). Who is currently your role model(s) for your development as an elementary/middle/junior high school band teacher? Select all that apply

☐ Colleague

☐ College Band Director

☐ Famous Musician

☐ Private Lesson/Studio Teacher

☐ Professor

☐ None

☐ Other (Please Specify)

30. Approximately how many of these role models were female?

○ 1

○ 2

○ 3

○ 4

○ 5

○ Other (Please Specify) [   ]

31. Who is currently an impactful _female role model(s)_ for your development as an elementary/middle/junior high school band teacher? Select all that apply

☐ Colleague

☐ College Band Director

☐ Famous Musician

☐ Private Lesson/Studio Teacher

☐ Professor

☐ None

☐ Other (Please Specify) [   ]

32. How important was the impact of your role model to the success of your career as an elementary/middle/junior high school teacher?

○ Extremely Important

○ Very Important

○ Important

○ Moderately Important

○ Slightly Important

○ Not Important

33. Please explain how a female role model impacted your career as elementary and/or middle/junior high school band teacher. Comments and recommendations are optional.

34. Your ethnicity background,

○ Alaskan Native

○ American Indian

○ Asian

○ Black or African American

○ Hispanic, Latino or Spanish Origin of any race

○ Pacific Islander

○ Native Hawaiian

○ White

○ Race and Ethnicity unknown

○ Other (Please Specify)

35. Which of the following classes are you currently teaching, please select all that apply.

☐ AP Music Class

☐ Band

☐ Choir

☐ General Music

☐ Guitar

☐ Jazz Band

☐ Orchestra

☐ Percussion

☐ Piano

☐ Technology and Music

☐ Other (Please Specify) [   ]

36. Please choose the answer that best describes your current type of employment:

◯ I am a full-time teacher.

◯ I am a part-time teacher.

◯ Other (Please Specify) [   ]

37. Would you like to enter a raffle to win a prize? Your responses will still remain anonymous.

◯ Yes

◯ No

School of Music, Dance and Theatre

ASU Herberger Institute for
Design and the Arts
Arizona State University

100% Survey Completion

We thank you for your time spent taking this survey.
Your response has been recorded.

APPENDIX C

NAfME/SRME APPLICATION FORM

Submission

NAfME provides a listserv research service to student and professional members who are engaged in survey research and whose applications are approved by the SRME Executive Committee. Members may be awarded one request every two years. Review cycle begins September 1 – ends August 31. If the initial request application is rejected, the applicant may revise and resubmit only once within the 2-year cycle. If the application is accepted, the applicant is responsible for a nominal fee for the service. Student applicants must provide NAfME membership information of the university academic advisor.

Note: emails from OpenConf may be directed to you spam or junk folder.

Researcher Information

Author 1

First Name:

[   ]

Last/Family Name:

[   ]

Email:

[   ]

NAfME ID Number:

[   ]

Phone Number:

[   ]

Institution Affiliation :

[   ]

Professional Status:
- ☐ Undergraduate Student
- ☐ Graduate Student
- ☐ Elementary Teacher
- ☐ Secondary Teacher
- ☐ University Professor
- ☐ Private Instructor
- ☐ Other

Add Author

Contact Author

Contact Author: [⌄]

Author who will serve as the point of contact for correspondence about the submission.

For student requests

Academic Advisor (name):

[   ]

Advisor NAfME ID:

[   ]

Advisor Email:

[   ]

Advisor Phone Number:

[   ]

Content

Project Title:

[   ]

IRB Protocol & Survey Form (Including Approval Documentation):

[Choose File] No file chosen   Format: PDF

File upload limit through this form is 64.0MB.

Abstract:

[   ]

250 word limit

Background, Purpose,
and Rationale:

250 word limit

Research Question(s):

250 word limit

Targeted Respondent
Population:

Procedures (including
contact strategy):

250 word limit

How would this
research benefit the
NAfME membership?:

150 word max

277

National Association for Music Education

RESEARCH ASSISTANCE ORDER FORM

NAME Xiaotian Xu   Member ID 002060715

COMPANY / INSTITUTIUON Arizona State University   IRB Number STUDY00015030

PHONE (520)270-0918   E-MAIL xiaotia3@asu.edu

ADDRESS 1890 S Country Club Way, Apt. 2010

CITY Tempe   ST/PROV Arizona   ZIP 85281

List Criteria (first 2 are free):

Please list any specifications below, according to geography (ZIP, state, foreign), teaching level (elementary, higher education, etc.) and/or teaching area (choral, instrumental, jazz, etc.).

Geography (if applicable):   ☐ BY STATE   ☐ BY ZIP CODE (range)
Details: _____

Teaching Level:
☐ Private/Studio   ☐ Pre-School
■ Elementary Only   ■ Middle School / Jr. High Only
☐ High School Only   ☐ K-12   ☐ Collegiate (students)
☐ College/University (professor/staff)
☐ Other (please list): _____

Interest Area:
■ Band   ☐ Orchestra   ☐ Choral   ☐ Marching Band
☐ Guitar   ☐ Voice   ☐ Show Choir
☐ Jazz   ☐ Special Education ☐ Teacher Education
☐ Research   ☐ Hist/Theor/Comp ☐ General Music
☐ Mariachi   ☐ Technology   ☐ Keyboard

Services Requested (select all that apply, and list the number of additional on the line):

✓	Transmission to 5,000 members (see details on page 1):	$50.00
✓	Basic Proofing/Programming Time :	Included
☐	Additional List Criteria (in excess of 2):	$10.00 x _____
☐	Transmission to an additional 5,000 members	$25.00 x _____
☐	Re-send (limit one):	$25.00
☐	Rush Order (guaranteed transmission < 5 business days):	$50.00

SUBTOTAL: $ 135

Agreement: By signing this form below, you agree that you have the full power and authority to enter into this agreement on behalf of your company or institution. The company / institution agrees that this transmission shall be for legitimate research purposes, and is not intended to serve as a sales tool.

Signature of Representative: _Xiaotian Xu_   **Date:** 11/12/2022

Current as of 06/2021. This service is available to members only. Rules and restrictions subject to change without notice.

278

John Donaldson <johnd@nafme.org>
to me ▾

Mon, Oct 3, 2022, 12:26 PM ⭐ ↩ ⋮

Dear Xiaotian

Sorry for the delay in getting back to you.

I have good news. Your research assistance proposal has been approved by our NAfME reviewers.

The next step is for you to fill out the form, attached, and provide a ready-to-go email for your survey.

Then, I will forward that to our Marketing/Membership team to invoice you and organize sending the survey out.

Best wishes,

John

John C. Donaldson
Assistant Executive Director for Professional Development and Publications
National Association for Music Education
1806 Robert Fulton Drive, Reston, VA 20191
703-860-4000 | Direct 571-323-5899
E-mail: johnd@nafme.org
nafme.org

Betty Cook <bettyc@nafme.org>
to me ▾

Mon, Nov 21, 2022, 1:14 PM ☆ ↩ ⋮

Hello Xiaotian,
The receipt for your survey is attached. The first email will go out tomorrow at 1 and the second email will go on 12/01 at 3:00. Let me know if you need anything further.

Thanks,
Betty

Betty Cook
Senior Manager of Member Services | National Association *for* Music Education
800-336-3768/703-860-4000/direct 571-323-3392
bettyc@nafme.org
Twitter | Facebook | Instagram

Together, We Are NAfME!

Xiaotian Xu <xiaotia3@asu.edu>
to John, Betty ▾

Tue, Jan 10, 8:00 AM ☆ ↩ ⋮

Hello John and Betty,

I hope you are doing well and having a good time in the holidays.

I'm writing to you because I re-applied to send out additional 5,000 memberships before Christmas, but I didn't get approval to make it happen. I plan to finish the data collection this coming week. Could you please help me to send out additional 5,000 memberships and then re-sent the survey to my original 5,000 membership? I would appreciate your support.

Additionally, may I ask you an important question about your membership? My professor Dr. Jill Sullivan and I would like to know how many of you members in NAfME are elementary and/or middle/junior high school band teachers? Do you know the numbers of females and males as these band teachers?

I'm looking forward to hearing from you.

Thank you so much!

Warm regards,
Xiaotian

Betty Cook <bettyc@nafme.org>
to me, John ▾

Tue, Jan 10, 2:06 PM ☆ ↩ ⋮

Hello Xiaotian,
We did send your survey on December 15 for a third time. Here are the stats for your 3 sends...
  • 11.22.22: 41% open rate (1,705); 2.4% click rate (101 clicks)
  • 12.1.22: 43% open rate (1,760); 2% click rate (67 clicks)
  • 12.15.22: 43% open rate (1,759); 1% click rate (59 clicks)
We have approximately 23,800 band teachers who have selected either elementary, JR/Middle or both as their teaching level. At this time we do not collect gender status of our members.
Thanks,
Betty

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APPENDIX D

WBDI APPLICATION CONTACT EMAILS

Xiaotian Xu <xiaotia3@asu.edu>
to beth.adams

Oct 10, 2022, 8:52 AM

Dear Ms. Bethann Adams,

My name is Xiaotian Xu, and I am a doctoral candidate in the Music Learning and Teaching PhD program at Arizona State University under the direction of Professor Jill Sullivan, a long-time member of WBDI.

I am writing this email because I am researching female band teachers as my dissertation, and I would like to send my survey out to WBDI participants. I am asking you to please consider distributing a link to my survey questionnaire to your members of the Women Band Director International. Would you please discuss this with your board members to see if they would give permission for my survey to be sent to your membership?

This dissertation aims to investigate the perceptions of women elementary and middle-level school band teachers across the United States to reveal whether they perceive themselves as discriminated against in the profession, and also to investigate the influence of mentors and role models on women elementary and middle/junior high school band teachers. The ASU Institutional Review Board has approved my study. The IRB approval document is attached.

I prefer to send out my survey to the WBDI organization because my doctoral peer, Theresa Hoover (also a member of WBDI), recommended that a lot of the members at WBDI are interested in my research topic and fit my target research participants (women elementary and middle-level band teachers). Theresa Hoover strongly suggested that I contact you.

Please let me know if you require me to submit any materials or applications to WBDI to get this research request approved. Also, if you'd like to read the survey in advance, I'd be happy to send you a copy.

Thank you so much for your consideration to help with the continued support of important research on women band teachers.

Warmly regards.

Sincerely,

Xiaotian

beth.adams@windstream.net <beth.adams@windstream.net>
to Theresa, Xiaotia3, beth.adams@windstream.net

Oct 21, 2022, 12:42 PM

Theresa,

Can we please include this in our next email to membership?

Thank you,
Bethann Adams

Theresa Hoover <musicaltheresa@gmail.com>
to me

Oct 23, 2022, 1:08 PM

Hi Xiaotian,
I will include this in our next email to the membership.
Can you please send me the link to the survey and a few sentences to put in the body of the email, explaining what the survey is?
I would need this information by October 28th to be included in our November 1st email.
Thanks!

Theresa Hoover
Music Education & Technology Integration Specialist
Doctoral Student, Music Learning and Teaching, Arizona State University
www.musicaltheresa.com
@MusicalTheresa

Xiaotian Xu <xiaotia3@asu.edu>
to Theresa, beth.adams, Jill

Sun, Oct 23, 2022, 4:23 PM

Hello Theresa,

It was very nice to meet you on Thursday. I am so excited to receive your email. I also greatly appreciate your help me distributing the survey in WBDI.

However, I cannot send the survey out right now because I have not finished the pilot test so far. I already forwarded your email to Dr. Sullivan and confirmed that with her. We are super grateful to you and Ms. Bethann.

In the last two weeks, I have sent the twice invitations to the pilot testers. Unfortunately, they don't give me any response. I will keep contacting them this week. Could you please give me a few more weeks and allow me to finish the pilot test before I distribute the survey formally?

I really appreciate everything you did for me.

Sincerely,
Xiaotian

…

Theresa Hoover <musicaltheresa@gmail.com>
to me ▾

Oct 23, 2022, 4:34 PM

Hi Xiaotian, it was so nice to meet you as well!

Not a problem to wait. I misunderstood and thought you had the survey ready to go.
I try to send emails on the 1st and 15th of each month, and just need a few days prep time to get each email ready.
So whenever you have the survey ready, it will be included in that next email.
Thanks!

Theresa Hoover
Music Education & Technology Integration Specialist
Doctoral Student, Music Learning and Teaching, Arizona State University
www.musicaltheresa.com
@MusicalTheresa

Xiaotian Xu <xiaotia3@asu.edu>
to Theresa ▾

Oct 23, 2022, 4:54 PM

Hi Theresa,

Thank you so much for your understanding!

I finished the pre-tests with you and the other two scholars. Then I contacted some real elementary/middle school band directors for the pilot test. At the same time, I also applied to the survey distribution in NAfME and WBDI.

Hopefully, I can complete the pilot tests before the week of 15th November. I will send you the ready-to-go email and link to my survey a few days before the 15th.

Thanks a lot!

Xiaotian

Xiaotian Xu <xiaotia3@asu.edu>
to Theresa ▾

Jan 13, 2023, 9:17 PM

Hello Theresa,

I hope you are doing well with the new semester. I know you are not working with WBDI any more. But can I ask you some questions about the membership of WBDI?

Dr. Sullivan asked me to search about how many membership of WBDI are elementary or/and middle/junior high school band teachers? Do you have any idea about the numbers? Also can I ask you about how many members would see my survey distribution via the email you help me send out?

Thank you for your help!

Warm regards,
Xiaotuan

Theresa Hoover <thoover5@asu.edu>
to me ▾

Jan 16, 2023, 2:24 PM

Hi Xiaotian,
Here's what I can gather from the website information:
In 2022, there were 329 active members.
Of those, 172 indicated they teach elementary school or middle school as all (or part) of their job.

The email was sent to 333 people. It looks like 139 people opened the email the first time, and 159 opened the email the second time.
It was shared in the Facebook group of 3,600 people. I don't know how many people saw it, but the post received 29 "likes" and 6 people responded in the comments that they completed it.

I hope this helps!
-Theresa
•••
--
Theresa Hoover, Graduate Teaching Assistant
Doctoral Student, Music Teaching & Learning, Arizona State University
Phone: (484) 467-8749
Email: musicaltheresa@gmail.com
www.musicaltheresa.com

APPENDIX E

COMPARISON OF DATA BEFORE AND AFTER THE REMOVAL OF OUTLIERS

FOR RESEARCH QUESTIONS #6-1, #6-5, #6-6, #6-13, #8-4, #8-7, & #8-8

Sub-research Question #6-1: Are there significant mean differences in the female band teachers' perceptions of discrimination by age? (Survey Questions 3 & 15)

Female Band Teachers' Perceptions toward Discrimination by Age with Outliers

Statements	Age Group	*M*	*SD*	*N*
I have been discriminated against at my band-teaching job.	21–30	3.02	1.785	44
	31–40	2.78	1.620	41
	41–50	2.65	1.663	46
	Above 50	2.13	1.520	53
I have been treated unfairly by administrators while I was a band teacher.	21–30	2.89	1.781	44
	31–40	2.76	1.786	41
	41–50	2.74	1.512	46
	Above 50	2.02	1.461	53
I feel like I'm not respected because I teach at the elementary or middle school levels.	21–30	3.52	1.592	44
	31–40	3.24	1.496	41
	41–50	3.54	1.601	46
	Above 50	2.70	1.671	53
My ideas and opinions are often ignored by fellow band teachers.	21–30	2.68	1.596	44
	31–40	2.80	1.691	41
	41–50	2.93	1.555	46
	Above 50	2.40	1.573	53
My ideas and opinions are often ignored by principals.	21–30	3.09	1.736	44
	31–40	2.80	1.504	41
	41–50	3.07	1.526	46
	Above 50	2.72	1.703	53
I have been addressed in a less-than-professional way.	21–30	3.75	1.806	44
	31–40	3.90	1.700	41

Statements	Age Group	*M*	*SD*	*N*
	41–50	3.52	1.835	46
	Above 50	2.77	1.683	53
I have been mistaken for teaching general music or choir instead of the band.	21–30	3.50	2.040	44
	31–40	3.44	1.937	41
	41–50	2.96	1.873	46
	Above 50	2.36	1.570	53

Sub-research Question #6-1: Are there significant mean differences in the female band teachers' perceptions of discrimination by age? (Survey Questions 3 & 15)

Female Band Teachers' Perceptions toward Discrimination by Age without Outliers

Statements	Age Group	*M*	*SD*	*N*
I have been discriminated against at my band-teaching job.	21–30	3.02	1.785	44
	31–40	2.78	1.620	41
	41–50	2.65	1.663	46
	Above 50	1.73	1.116	45
I have been treated unfairly by administrators while I was a band teacher.	21–30	2.89	1.781	44
	31–40	2.76	1.786	41
	41–50	2.74	1.512	46
	Above 50	1.49	.727	45
I feel like I'm not respected because I teach at the elementary or middle school levels.	21–30	3.52	1.592	44
	31–40	3.24	1.496	41
	41–50	3.54	1.601	46
	Above 50	2.42	1.469	45
My ideas and opinions are often ignored by fellow band teachers.	21–30	2.68	1.596	44
	31–40	2.80	1.691	41
	41–50	2.93	1.555	46
	Above 50	2.27	1.498	45
My ideas and opinions are often ignored by principals.	21–30	3.09	1.736	44
	31–40	2.80	1.504	41
	41–50	3.07	1.526	46
	Above 50	2.38	1.512	45
I have been addressed in a less-than-professional way.	21–30	3.75	1.806	44
	31–40	3.90	1.700	41

Statements	Age Group	M	SD	N
	41–50	3.52	1.835	46
	Above 50	2.36	1.433	45
I have been mistaken for teaching general music or choir instead of the band.	21–30	3.50	2.040	44
	31–40	3.44	1.937	41
	41–50	2.96	1.873	46
	Above 50	2.24	1.510	45

Sub-research Question #6-5: Are there significant mean differences in the female band teachers' perceptions of sexism by age? (Survey Questions 3 & 15)

Female Band Teachers' Perceptions toward Sexism by Age with Outlier

Statements	Age Group	*M*	*SD*	*N*
I have heard demeaning remarks about myself and/or other females.	21–30	3.23	1.991	47
	31–40	3.55	1.704	47
	41–50	2.66	1.536	47
	Above 50	2.33	1.676	49
I have earned less money than male teachers who teach the same level of the band.	21–30	2.83	1.723	47
	31–40	2.26	1.581	47
	41–50	2.23	1.433	47
	Above 50	1.94	1.345	49
I have received less support than male band teachers.	21–30	3.23	1.844	47
	31–40	3.36	1.634	47
	41–50	2.79	1.680	47
	Above 50	2.59	1.619	49
I have trouble finding a band job because I am a female.	21–30	2.74	1.775	47
	31–40	2.55	1.613	47
	41–50	2.17	1.404	47
	Above 50	1.94	1.088	49
I have trouble keeping a band job because I am a female.	21–30	1.94	1.292	47
	31–40	1.60	0.876	47
	41–50	1.45	0.583	47
	Above 50	1.53	0.844	49

Sub-research Question #6-5: Are there significant mean differences in the female band teachers' perceptions of sexism by age? (Survey Questions 3 & 15)

Female Band Teachers' Perceptions toward Sexism by Age without Outlier

Statements	Age Group	*M*	*SD*	*N*
I have heard demeaning remarks about myself and/or other females.	21–30	3.10	1.998	41
	31–40	3.37	1.705	40
	41–50	2.66	1.536	47
	Above 50	2.26	1.743	39
I have earned less money than male teachers who teach the same level of the band.	21–30	2.85	1.711	41
	31–40	1.75	1.056	40
	41–50	2.23	1.433	47
	Above 50	1.41	.595	39
I have received less support than male band teachers.	21–30	3.10	1.814	41
	31–40	3.18	1.647	40
	41–50	2.79	1.680	47
	Above 50	2.26	1.517	39
I have trouble finding a band job because I am a female.	21–30	2.51	1.705	41
	31–40	2.62	1.690	40
	41–50	2.17	1.404	47
	Above 50	1.62	0.815	39
I have trouble keeping a band job because I am a female.	21–30	1.54	0.711	41
	31–40	1.58	0.931	40
	41–50	1.45	0.583	47
	Above 50	1.33	0.530	39

Sub-research Question #6-6: Are there significant mean differences in the female band teachers' perceptions of sexism by levels of teaching? (Survey Questions 7 & 15)

Female Band Teachers' Perceptions toward Sexism by Levels of teaching with Outliers

Statements	Levels of teaching	*M*	*SD*	*N*
I have heard demeaning remarks about myself and/or other females.	Combined elementary and middle school	2.33	1.605	52
	Combined elementary, middle and high school	2.86	1.823	36
	Combined middle and high school	3.55	1.956	29
	Elementary only	2.27	1.223	15
	Middle school only	3.41	1.753	59
I have earned less money than male teachers who teach the same level of the band.	Combined elementary and middle school	2.21	1.433	52
	Combined elementary, middle and high school	2.28	1.386	36
	Combined middle and high school	3.34	1.895	29
	Elementary only	1.67	0.900	15
	Middle school only	2.10	1.505	59
I have received less support than male band teachers.	Combined elementary and middle school	2.77	1.616	52
	Combined elementary, middle and high school	2.75	1.500	36
	Combined middle and high school	3.76	1.845	29
	Elementary only	2.73	1.387	15
	Middle school only	3.03	1.847	59
I have trouble finding a band job because I am a female.	Combined elementary and middle school	2.19	1.560	52
	Combined elementary, middle and high school	2.19	1.390	36
	Combined middle and high school	2.86	1.552	29
	Elementary only	3.00	1.512	15
	Middle school only	2.15	1.448	59

Statements	Levels of teaching	*M*	*SD*	*N*
I have trouble keeping a band job because I am a female.	Combined elementary and middle school	1.58	0.893	52
	Combined elementary, middle and high school	1.42	0.554	36
	Combined middle and high school	1.93	1.412	29
	Elementary only	1.87	0.915	15
	Middle school only	1.59	0.873	59

Sub-research Question #6-6: Are there significant mean differences in the female band teachers' perceptions of sexism by levels of teaching? (Survey Questions 7 & 15)

Female Band Teachers' Perceptions toward Sexism by Levels of teaching without Outliers

Statements	Levels of teaching	M	SD	N
I have heard demeaning remarks about myself and/or other females.	Combined elementary and middle school	2.02	1.351	41
	Combined elementary, middle and high school	2.86	1.823	36
	Combined middle and high school	3.32	1.887	25
	Elementary only	2.15	1.223	13
	Middle school only	3.19	1.758	48
I have earned less money than male teachers who teach the same level of the band.	Combined elementary and middle school	1.93	1.081	41
	Combined elementary, middle and high school	2.28	1.386	36
	Combined middle and high school	3.16	1.864	25
	Elementary only	1.38	0.506	13
	Middle school only	1.58	0.767	48
I have received less support than male band teachers.	Combined elementary and middle school	2.32	1.350	41
	Combined elementary, middle and high school	2.75	1.500	36
	Combined middle and high school	3.44	1.781	25
	Elementary only	2.54	1.391	13
	Middle school only	2.81	1.794	48
I have trouble finding a band job because I am a female.	Combined elementary and middle school	1.51	.675	41
	Combined elementary, middle and high school	2.19	1.390	36
	Combined middle and high school	2.52	1.327	25
	Elementary only	2.77	1.481	13

Statements	Levels of teaching	*M*	*SD*	*N*
	Middle school only	1.94	1.327	48
I have trouble keeping a band job because I am a female.	Combined elementary and middle school	1.39	0.542	41
	Combined elementary, middle and high school	1.42	0.554	36
	Combined middle and high school	1.44	0583	25
	Elementary only	1.69	0.751	13
	Middle school only	1.35	0.565	48

Sub-research Question #6-13: Are there significant mean differences in the female band teachers' perceptions of job isolation by age? (Survey Questions 3 & 15)

Female Band Teachers' Perceptions toward Job Isolation by Age with Outlier

Statements	Age Group	*M*	*SD*	*N*
I have felt disconnected from other male band teachers at work.	21–30	3.62	1.824	47
	31–40	3.49	1.757	49
	41–50	2.74	1.592	54
	Above 50	2.35	1.632	52
I have felt myself withdrawing from male attendees when attending instrumental conferences.	21–30	3.28	1.703	47
	31–40	3.76	1.535	49
	41–50	3.00	1.566	54
	Above 50	2.67	1.543	52
I have felt alienated from my male colleagues.	21–30	3.34	1.736	47
	31–40	3.37	1.679	49
	41–50	2.89	1.550	54
	Above 50	2.50	1.515	52
I have felt isolated in the school.	21–30	4.51	1.473	47
	31–40	4.29	1.472	49
	41–50	3.43	1.766	54
	Above 50	3.37	1.727	52
I have felt isolated when teaching bands.	21–30	4.11	1.618	47
	31–40	4.10	1.503	49
	41–50	3.46	1.668	54
	Above 50	3.27	1.794	52

Sub-research Question #6-13: Are there significant mean differences in the female band teachers' perceptions of job isolation by age? (Survey Questions 3 & 15)

Female Band Teachers' Perceptions toward Job Isolation by Age without Outlier

Statements	Age Group	*M*	*SD*	*N*
I have felt disconnected from other male band teachers at work.	21–30	3.62	1.824	47
	31–40	3.74	1.726	42
	41–50	2.74	1.592	54
	Above 50	2.35	1.632	52
I have felt myself withdrawing from male attendees when attending instrumental conferences.	21–30	3.28	1.703	47
	31–40	3.86	1.539	42
	41–50	3.00	1.566	54
	Above 50	2.67	1.543	52
I have felt alienated from my male colleagues.	21–30	3.34	1.736	47
	31–40	3.62	1.637	42
	41–50	2.89	1.550	54
	Above 50	2.50	1.515	52
I have felt isolated in the school.	21–30	4.51	1.473	47
	31–40	4.74	1.014	42
	41–50	3.43	1.766	54
	Above 50	3.37	1.727	52
I have felt isolated when teaching bands.	21–30	4.11	1.618	47
	31–40	4.48	1.273	42
	41–50	3.46	1.668	54
	Above 50	3.27	1.794	52

Sub-research Question #8-4: Are there mean significant differences in the female band teachers' perceptions of sexism by years of teaching experience? (Survey Questions 5 & 15)

Female Band Teachers' Perceptions toward Sexism by Years of Teaching with Outliers

Statements	Years of Teaching Experience	*M*	*SD*	*N*
I have heard demeaning remarks about myself and/or other females.	1–5 years	3.14	1.958	35
	6–10 years	3.47	1.954	19
	11–15 years	3.21	1.702	34
	16–20 years	3.14	1.779	28
	21–25 years	3.05	1.527	22
	Above 25 years	2.30	1.659	53
I have earned less money than male teachers who teach the same level of the band.	1–5 years	3.03	1.757	35
	6–10 years	2.32	1.529	19
	11–15 years	2.03	1.291	34
	16–20 years	2.50	1.667	28
	21–25 years	1.95	0.999	22
	Above 25 years	2.09	1.584	53
I have received less support than male band teachers.	1–5 years	3.11	1.827	35
	6–10 years	3.16	1.573	19
	11–15 years	3.35	1.686	34
	16–20 years	3.29	1.843	28
	21–25 years	2.59	1.368	22
	Above 25 years	2.64	1.722	53
I have trouble finding a band job because I am a female.	1–5 years	2.63	1.816	35
	6–10 years	2.63	1.674	19
	11–15 years	2.47	1.522	34

Statements	Years of Teaching Experience	*M*	*SD*	*N*
	16–20 years	2.82	1.786	28
	21–25 years	1.82	0.795	22
	Above 25 years	1.94	1.134	53
I have trouble keeping a band job because I am a female.	1–5 years	1.89	1.301	35
	6–10 years	1.84	1.119	19
	11–15 years	1.44	0.561	34
	16–20 years	1.75	1.041	28
	21–25 years	1.45	0.510	22
	Above 25 years	1.51	0.846	53

Sub-research Question #8-4: Are there mean significant differences in the female band teachers' perceptions of sexism by years of teaching experience? (Survey Questions 5 & 15)

Female Band Teachers' Perceptions toward Sexism by Years of Teaching without Outliers

Statements	Years of Teaching Experience	*M*	*SD*	*N*
I have heard demeaning remarks about myself and/or other females.	1–5 years	2.90	1.921	31
	6–10 years	3.65	1.998	17
	11–15 years	3.14	1.779	28
	16–20 years	3.14	1.779	28
	21–25 years	3.10	1.586	20
	Above 25 years	2.15	1.577	46
I have earned less money than male teachers who teach the same level of the band.	1–5 years	2.94	1.769	31
	6–10 years	2.41	1.583	17
	11–15 years	1.57	.573	28
	16–20 years	2.50	1.667	28
	21–25 years	1.75	0.786	20
	Above 25 years	1.76	1.233	46
I have received less support than male band teachers.	1–5 years	2.87	1.765	31
	6–10 years	3.06	1.600	17
	11–15 years	3.29	1.802	28
	16–20 years	3.29	1.843	28
	21–25 years	2.45	1.356	20
	Above 25 years	2.33	1.521	46
I have trouble finding a band job because I am a female.	1–5 years	2.29	1.616	31
	6–10 years	2.47	1.700	17

Statements	Years of Teaching Experience	M	SD	N
	11–15 years	2.21	1.287	28
	16–20 years	2.82	1.786	28
	21–25 years	1.70	0.657	20
	Above 25 years	1.63	.771	46
I have trouble keeping a band job because I am a female.	1–5 years	1.48	.570	31
	6–10 years	1.59	.870	17
	11–15 years	1.36	.559	28
	16–20 years	1.75	1.041	28
	21–25 years	1.45	.510	20
	Above 25 years	1.33	.560	46

Sub-research Question #8-7: Are there mean significant differences in the female band teachers' perceptions of sex stereotypes by years of teaching experience? (Survey Questions 5 & 15)

Female Band Teachers' Perceptions toward Sex Stereotypes by Years of Teaching with Outliers

Statements	Years of Teaching Experience	M	SD	N
I was treated as if I am not competent.	1–5 years	3.06	1.969	34
	6–10 years	3.29	1.793	21
	11–15 years	2.94	1.774	34
	16–20 years	2.85	1.617	34
	21–25 years	2.74	1.602	23
	Above 25 years	2.04	1.441	53
I have been turned down for teaching band during the hiring process.	1–5 years	3.53	2.135	34
	6–10 years	3.29	1.901	21
	11–15 years	3.65	1.773	34
	16–20 years	3.09	1.747	34
	21–25 years	2.17	1.527	23
	Above 25 years	2.32	1.650	53
I have been misjudged by school/district administrators about my capabilities.	1–5 years	3.53	1.796	34
	6–10 years	3.52	1.806	21
	11–15 years	3.56	1.580	34
	16–20 years	3.41	1.893	34
	21–25 years	3.22	1.678	23
	Above 25 years	2.66	1.860	53

Statements	Years of Teaching Experience	*M*	*SD*	*N*
I have needed to provide more evidence of my musicianship and competence than others.	1–5 years	3.32	1.804	34
	6–10 years	3.33	1.798	21
	11–15 years	3.06	1.890	34
	16–20 years	3.35	1.921	34
	21–25 years	3.04	1.665	23
	Above 25 years	2.40	1.714	53
I have had my judgment questioned during my band teaching/rehearsal.	1–5 years	4.09	1.464	34
	6–10 years	3.81	1.721	21
	11–15 years	3.50	1.780	34
	16–20 years	3.29	1.835	34
	21–25 years	2.78	1.704	23
	Above 25 years	2.32	1.516	53

Sub-research Question #8-7: Are there mean significant differences in the female band teachers' perceptions of sex stereotypes by years of teaching experience? (Survey Questions 5 & 15)

Female Band Teachers' Perceptions toward Sex Stereotypes by Years of Teaching without Outliers

Statements	Years of Teaching Experience	*M*	*SD*	*N*
I was treated as if I am not competent.	1–5 years	3.06	1.969	34
	6–10 years	3.29	1.793	21
	11–15 years	2.94	1.774	34
	16–20 years	2.85	1.617	34
	21–25 years	2.19	1.167	16
	Above 25 years	1.56	.867	45
I have been turned down for teaching band during the hiring process.	1–5 years	3.53	2.135	34
	6–10 years	3.29	1.901	21
	11–15 years	3.65	1.773	34
	16–20 years	3.09	1.747	34
	21–25 years	1.38	.500	16
	Above 25 years	2.07	1.543	45
I have been misjudged by school/district administrators about my capabilities.	1–5 years	3.53	1.796	34
	6–10 years	3.52	1.806	21
	11–15 years	3.56	1.580	34
	16–20 years	3.41	1.893	34
	21–25 years	2.63	1.360	16
	Above 25 years	2.24	1.667	45

Statements	Years of Teaching Experience	*M*	*SD*	*N*
I have needed to provide more evidence of my musicianship and competence than others.	1–5 years	3.32	1.804	34
	6–10 years	3.33	1.798	21
	11–15 years	3.06	1.890	34
	16–20 years	3.35	1.921	34
	21–25 years	2.50	1.366	16
	Above 25 years	2.16	1.609	45
I have had my judgment questioned during my band teaching/rehearsal.	1–5 years	4.09	1.464	34
	6–10 years	3.81	1.721	21
	11–15 years	3.50	1.780	34
	16–20 years	3.29	1.835	34
	21–25 years	2.06	.772	16
	Above 25 years	2.02	1.270	45

Sub-research Question #8-8: Are there mean significant differences in the female band teachers' perceptions of sex stereotypes by years of band teaching experience? (Survey Questions 6 & 15)

Female Band Teachers' Perceptions toward Sex Stereotypes by Years of Band Teaching with Outliers

Statements	Years of Band Teaching Experience	M	SD	N
I was treated as if I am not competent.	1–5 years	3.07	1.932	43
	6–10 years	3.24	1.742	34
	11–15 years	2.83	1.859	30
	16–20 years	2.50	1.590	38
	21–25 years	2.46	1.532	24
	Above 25 years	2.00	1.259	30
I have been turned down for teaching band during the hiring process.	1–5 years	3.65	2.126	43
	6–10 years	3.50	1.907	30
	11–15 years	2.50	1.590	38
	16–20 years	2.08	1.472	24
	21–25 years	3.47	1.692	34
	Above 25 years	2.20	1.562	30
I have been misjudged by school/district administrators about my capabilities.	1–5 years	3.49	1.751	43
	6–10 years	3.65	1.756	34
	11–15 years	3.53	1.776	30
	16–20 years	2.95	1.845	38
	21–25 years	3.13	1.727	24
	Above 25 years	2.63	1.847	30

Statements	Years of Band Teaching Experience	M	SD	N
I have needed to provide more evidence of my musicianship and competence than others.	1–5 years	3.23	1.784	43
	6–10 years	3.15	1.811	34
	11–15 years	3.50	1.925	30
	16–20 years	3.00	1.986	38
	21–25 years	2.79	1.474	24
	Above 25 years	2.20	1.648	30
I have had my judgment questioned during my band teaching/rehearsal.	1–5 years	3.93	1.609	43
	6–10 years	3.85	1.690	34
	11–15 years	3.37	1.810	30
	16–20 years	2.92	1.715	38
	21–25 years	2.63	1.765	24
	Above 25 years	2.07	1.258	30

Sub-research Question #8-8: Are there mean significant differences in the female band teachers' perceptions of sex stereotypes by years of band teaching experience? (Survey Questions 6 & 15)

Female Band Teachers' Perceptions toward Sex Stereotypes by Years of Band Teaching without Outliers

Statements	Years of Band Teaching Experience	M	SD	N
I was treated as if I am not competent.	1–5 years	3.07	1.932	43
	6–10 years	3.24	1.742	34
	11–15 years	2.83	1.859	30
	16–20 years	2.50	1.590	38
	21–25 years	2.15	1.226	20
	Above 25 years	1.64	.952	25
I have been turned down for teaching band during the hiring process.	1–5 years	3.65	2.126	43
	6–10 years	3.50	1.907	30
	11–15 years	2.50	1.590	38
	16–20 years	2.08	1.472	24
	21–25 years	1.50	.607	20
	Above 25 years	2.04	1.457	25
I have been misjudged by school/district administrators about my capabilities.	1–5 years	3.49	1.751	43
	6–10 years	3.65	1.756	34
	11–15 years	3.53	1.776	30
	16–20 years	2.95	1.845	38
	21–25 years	2.95	1.761	20
	Above 25 years	2.36	1.753	25

Statements	Years of Band Teaching Experience	*M*	*SD*	*N*
I have needed to provide more evidence of my musicianship and competence than others.	1–5 years	3.23	1.784	43
	6–10 years	3.15	1.811	34
	11–15 years	3.50	1.925	30
	16–20 years	3.00	1.986	38
	21–25 years	2.55	1.356	20
	Above 25 years	1.84	1.434	25
I have had my judgment questioned during my band teaching/rehearsal.	1–5 years	3.93	1.609	43
	6–10 years	3.85	1.690	34
	11–15 years	3.37	1.810	30
	16–20 years	2.92	1.715	38
	21–25 years	2.20	1.508	20
	Above 25 years	1.60	.645	25

Sub-research Question #8-10: Are there mean significant differences in the female band teachers' perceptions of job isolation by years of teaching experience? (Survey Questions 5 & 15)

Female Band Teachers' Perceptions toward Job Isolation by Years of Teaching with Outlier

Statements	Years of Teaching Experience	M	SD	N
I have felt disconnected from other male band teachers at work.	1–5 years	3.58	1.811	36
	6–10 years	3.30	1.750	20
	11–15 years	3.44	1.795	34
	16–20 years	3.29	1.679	34
	21–25 years	2.68	1.492	25
	Above 25 years	2.26	1.677	53
I have felt myself withdrawing from male attendees when attending instrumental conferences.	1–5 years	3.28	1.614	36
	6–10 years	3.10	1.586	20
	11–15 years	3.79	1.513	34
	16–20 years	3.35	1.535	34
	21–25 years	3.20	1.848	25
	Above 25 years	2.57	1.526	53
I have felt alienated from my male colleagues.	1–5 years	3.33	1.656	36
	6–10 years	3.20	1.704	20
	11–15 years	3.35	1.704	34
	16–20 years	3.12	1.737	34
	21–25 years	2.96	1.541	25
	Above 25 years	2.45	1.488	53

Statements	Years of Teaching Experience	*M*	*SD*	*N*
I have felt isolated in the school.	1–5 years	4.61	1.358	36
	6–10 years	4.25	1.650	20
	11–15 years	4.26	1.543	34
	16–20 years	3.53	1.727	34
	21–25 years	3.64	1.846	25
	Above 25 years	3.30	1.682	53
I have felt isolated when teaching bands.	1–5 years	4.19	1.704	36
	6–10 years	3.85	1.348	20
	11–15 years	4.15	1.598	34
	16–20 years	3.50	1.523	34
	21–25 years	3.76	1.855	25
	Above 25 years	3.19	1.744	53

Sub-research Question #8-10: Are there mean significant differences in the female band teachers' perceptions of job isolation by years of teaching experience? (Survey Questions 5 & 15)

Female Band Teachers' Perceptions toward Job Isolation by Years of Teaching without Outlier

Statements	Years of Teaching Experience	*M*	*SD*	*N*
I have felt disconnected from other male band teachers at work.	1–5 years	3.58	1.811	36
	6–10 years	3.65	1.656	17
	11–15 years	3.68	1.701	28
	16–20 years	3.29	1.679	34
	21–25 years	2.68	1.492	25
	Above 25 years	2.26	1.677	53
I have felt myself withdrawing from male attendees when attending instrumental conferences.	1–5 years	3.28	1.614	36
	6–10 years	3.47	1.419	17
	11–15 years	3.79	1.475	28
	16–20 years	3.35	1.535	34
	21–25 years	3.20	1.848	25
	Above 25 years	2.57	1.526	53
I have felt alienated from my male colleagues.	1–5 years	3.33	1.656	36
	6–10 years	3.59	1.543	17
	11–15 years	3.57	1.643	28
	16–20 years	3.12	1.737	34
	21–25 years	2.96	1.541	25
	Above 25 years	2.45	1.488	53

Statements	Years of Teaching Experience	*M*	*SD*	*N*
I have felt isolated in the school.	1–5 years	4.61	1.358	36
	6–10 years	4.82	.951	17
	11–15 years	4.86	.891	28
	16–20 years	3.53	1.727	34
	21–25 years	3.64	1.846	25
	Above 25 years	3.30	1.682	53
I have felt isolated when teaching bands.	1–5 years	4.19	1.704	36
	6–10 years	4.06	1.249	17
	11–15 years	4.64	1.283	28
	16–20 years	3.50	1.523	34
	21–25 years	3.76	1.855	25
	Above 25 years	3.19	1.744	53

Sub-research Question #8-11: Are there mean significant differences in the female band teachers' perceptions of job isolation by years of band teaching experience? (Survey Questions 6 & 15)

Female Band Teachers' Perceptions toward Job Isolation by Years of Band Teaching with Outliers

Statements	Years of Band Teaching Experience	*M*	*SD*	*N*
I have felt disconnected from other male band teachers at work.	1–5 years	3.57	1.797	44
	6–10 years	3.26	1.781	34
	11–15 years	3.25	1.849	32
	16–20 years	2.88	1.713	40
	21–25 years	2.70	1.490	23
	Above 25 years	2.14	1.597	29
I have felt myself withdrawing from male attendees when attending instrumental conferences.	1–5 years	3.30	1.706	44
	6–10 years	3.38	1.393	34
	11–15 years	3.56	1.684	32
	16–20 years	3.20	1.667	40
	21–25 years	2.87	1.687	23
	Above 25 years	2.45	1.429	29
I have felt alienated from my male colleagues.	1–5 years	3.39	1.755	44
	6–10 years	3.32	1.646	34
	11–15 years	3.22	1.660	32
	16–20 years	2.90	1.661	40
	21–25 years	2.61	1.406	23
	Above 25 years	2.31	1.417	29

312

Statements	Years of Band Teaching Experience	*M*	*SD*	*N*
I have felt isolated in the school.	1–5 years	4.43	1.576	44
	6–10 years	4.18	1.547	34
	11–15 years	3.72	1.746	32
	16–20 years	3.58	1.824	40
	21–25 years	3.52	1.806	23
	Above 25 years	3.52	1.503	29
I have felt isolated when teaching bands.	1–5 years	4.07	1.690	44
	6–10 years	4.09	1.401	34
	11–15 years	3.78	1.718	32
	16–20 years	3.38	1.644	40
	21–25 years	3.83	1.825	23
	Above 25 years	3.07	1.731	29

Sub-research Question #8-11: Are there mean significant differences in the female band teachers' perceptions of job isolation by years of band teaching experience? (Survey Questions 6 & 15)

Female Band Teachers' Perceptions toward Job Isolation by Years of Band Teaching without Outliers

Statements	Years of Band Teaching Experience	M	SD	N
I have felt disconnected from other male band teachers at work.	1–5 years	3.57	1.797	44
	6–10 years	3.26	1.781	34
	11–15 years	3.25	1.849	32
	16–20 years	2.88	1.713	40
	21–25 years	2.33	1.188	18
	Above 25 years	1.54	.932	24
I have felt myself withdrawing from male attendees when attending instrumental conferences.	1–5 years	3.30	1.706	44
	6–10 years	3.38	1.393	34
	11–15 years	3.56	1.684	32
	16–20 years	3.20	1.667	40
	21–25 years	2.11	.900	18
	Above 25 years	2.13	1.361	24
I have felt alienated from my male colleagues.	1–5 years	3.39	1.755	44
	6–10 years	3.32	1.646	34
	11–15 years	3.22	1.660	32
	16–20 years	2.90	1.661	40
	21–25 years	2.11	.900	18
	Above 25 years	1.92	1.213	24

Statements	Years of Band Teaching Experience	*M*	*SD*	*N*
I have felt isolated in the school.	1–5 years	4.43	1.576	44
	6–10 years	4.18	1.547	34
	11–15 years	3.72	1.746	32
	16–20 years	3.58	1.824	40
	21–25 years	3.11	1.641	18
	Above 25 years	3.33	1.523	24
I have felt isolated when teaching bands.	1–5 years	4.07	1.690	44
	6–10 years	4.09	1.401	34
	11–15 years	3.78	1.718	32
	16–20 years	3.38	1.644	40
	21–25 years	3.39	1.787	18
	Above 25 years	2.79	1.719	24