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A REVIEW OF COURT CASES INVOLVING DISCRIMINATION
IN PHYSICAL ABILITY TESTING: 1992-2015

A Thesis
Presented to
The Faculty of the Department of Psychological Sciences
Western Kentucky University
Bowling Green, Kentucky

In Partial Fulfillment
Of the Requirements of the Degree
Master of Sciences

By
Casey Biggs

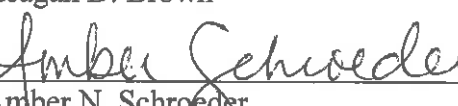
May 2015

A REVIEW OF COURT CASES INVOLVING DISCRIMINATION
IN PHYSICAL ABILITY TESTING: 1992-2015

Date Recommended 04/07/2015


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I dedicate this thesis to my parents, Jimmy and Debbie Biggs, who have supported me throughout my entire educational career and inspired me to be successful. Without their love and encouragement, none of my success would be possible.

ACKNOWLEDGEMENTS

I acknowledge, with gratitude, my debt of thanks to my professors for their assistance, advisement, and encouragement throughout this process. Particularly, I would like to thank Betsy Shoenfelt, whom without her patience, understanding support, and ability to see who I truly am; I would not be where I am today. I would also like to thank my extraordinary friends and colleagues for countless laughs and great times that got me through this process.

CONTENTS

Introduction.....	1
Identifying Essential Tasks.....	2
Validity	4
Adverse Impact	8
Legal Issues.....	11
Title VII of the Civil Rights Act.....	11
Americans with Disabilities Act.....	14
Court System.....	16
The Current Study.....	17
Method	20
Identification of Cases	20
Coding Scheme	20
Results.....	24
Discussion.....	27
Limitations	32
Conclusion	33
References.....	36
Appendix A: List of Cases Reviewed.....	42
Appendix B: List of Cases Excluded.....	44
Appendix C: Table of Case Characteristic Codes for Each Case.....	45
Appendix D: Table of Test Characteristic Codes for Each Case.....	47

LIST OF TABLES

Table 1. Coding Factors: Case and Test Characteristics.....	22
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A REVIEW OF COURT CASES INVOLVING DISCRIMINATION
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May 2015

48 Pages

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Department of Psychological Sciences

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Organizations that employ physically demanding jobs want to ensure their selection procedures distinguish qualified applicants from unqualified applicants. However, such selection tools typically result in adverse impact against various protected groups and often lead to litigation. Various factors influence the court's decision to rule in favor of the plaintiff or the defendant. The purpose of the present study is to identify those factors. The ADA (1990) created strict guidelines for plaintiffs and defendants to follow to be credible in a discrimination case. This study will specifically determine the impact of the ADA guidelines and three additional factors that influence court decisions including job analysis and test validation procedures, and whether the job involves public safety. Organizations can benefit from knowing factors they can control to decrease legal liability. Cases filed from 1992 to the present were reviewed and coded based on each factor. Z-tests for proportions were conducted to determine the proportions of rulings in favor of the plaintiff and defendant based on each factor of interest. Public safety influences the court decisions in favor of the defendant, such that for jobs in which public safety is of concern, the court is more likely to rule in favor of the defendant. Additional factors were not significantly influential. However, some trends are apparent and discussed in the paper. Implications and limitations also are discussed.

Introduction

Throughout the last half-century, researchers have been investigating physical abilities for specific jobs and techniques to assess those abilities accurately to increase quality of hire in selected applicants (Fleishman, 1964). Prior to Fleishman's work, employers selected applicants for strenuous jobs based on factors such as height and weight (Maher, 1984). Since then, established tools have been used in selecting candidates for positions such as police officers, firefighters, corrections officers, military personnel, construction workers, and other physically demanding jobs. In general, physical ability tests (PATs) are intended to assess the physical abilities an individual needs to successfully complete a strenuous job and, as with every other selection test, distinguish high performing applicants from the low performing to identify the most qualified individuals to hire. Employers are interested in the methods used to identify individuals who are able to perform a job effectively and securely (Hogan & Quigley, 1994).

The better able an employer is to identify (and hire) the superior performing applicants, the more likely the organization is to experience a reduction in work-related injuries (Knapik et al., 2007), time lost at work (Baker & Gebhardt, 2001), and an increase in higher performing employees (Biddle & Sill, 1999). The tasks on each PAT will vary depending on the job. For example, police officer PATs often include tasks such as twisting/turning, squatting/kneeling, lifting/carrying a dummy (Anderson, Plecas, & Segger, 2001) and wrestling (Arvey, Landon, Nutting, & Maxwell, 1992). In contrast, firefighter PATs may incorporate tasks that are more relevant to the job of a firefighter, such as carrying a water hose, climbing stairs with a hose, flexibility (Michaelides, Parpa,

Thompson, & Brown, 2008), ladder raise and extension, and ceiling and hydrant hose hookup (Ryan, Greguras, & Ployhart, 1996). Most PATs encompass general tasks as well, such as running and sprinting, strength tasks (e.g., grip strength, pull-ups, push-ups, bench dips, etc.), coordination tasks, and stair climbing (Anderson et al., 2001; Arvey, Landon, Nutting, & Maxwell, 1992; Michaelides et al., 2008; Ryan et al., 1996). As one can see, there are countless tasks and combinations of tasks that could be used on a test. It is important that the test developer take the appropriate steps to ensure all the essential job tasks are represented on the exam.

By identifying essential tasks, employers can distinguish specific skills and abilities needed to complete those tasks and, in turn, the PAT should be job-related. The more a PAT is customized to the job in question, the more likely the test is to be valid, and the less likely the organization will be deemed legally liable for discrimination (Hoffman, 1999). Legal liability can result in decreased organizational attractiveness to future applicants and/or customers and clients, and an increase a negative reputation, which has been shown to influence individuals in the community to perceive an organization negatively (Hoye & Lievens, 2007). Processes for identifying essential tasks and benefits of doing so are discussed in the following section.

Identifying Essential Tasks

In order to evaluate individuals on their ability to perform essential tasks, employers must identify those fundamental tasks that need to be assessed and the level of ability required. To understand PATs, one must have a basic comprehension of how employers and consultants determine what tasks should be included and the practicality of the tests. Job analyses are necessary to identify the physical demands and other job

requirements (Campion, 1983). Likewise, a job analysis is used to assess types of jobs that may require high levels of physical skills or abilities (Hoffman, 1999). Particularly useful is a job analysis survey known as the Position Analysis Questionnaire (PAQ), originally created by McCormick, Jeanneret, and Mecham (1972). The PAQ has been shown to identify positions that require higher levels of physical abilities, which in turn enables employers to distinguish jobs within their organization that may require applicants to pass a physical abilities test. However, the PAQ does not inform employers of the type of physical test that should be used or which tasks to include on the test.

A job analysis identifies the level of physical effort required (Arvey, Landon, Nutting, & Maxwell, 1992) and, therefore, the potential tasks to be included on a PAT. For example, Arvey, Landon, Nutting, and Maxwell (1992) suggested strength and endurance were two underlying constructs of eight different physical ability tests. Chaffin, Herrin, and Keyserling (1978) also recognized strength as a fundamental construct of physical abilities tests. Even more so, a meta-analysis revealed endurance to be a valuable construct, which also should be measured to enhance the content validity of PATs (Campion, 1983). Job analyses, when done correctly, are reliable sources, enabling researchers and employers to verify physical ability tests (PAT) are measuring constructs that will accurately distinguish high performing from low performing applicants for physically demanding jobs.

Another method used to determine the physical demands of a job is a physical effort scale (Fleishman, Gebhardt, & Hogan, 1986). The physical effort scale enables investigators to examine each essential task for a job and determine the intensity of physical effort used in that task. Raters (e.g., supervisors, incumbents, job analysts)

indicate observed level of effort used for each task; tasks with mean ratings above a specified rating (e.g., median) are considered physically demanding. On this scale, the higher the rating, the more physically demanding is the task. Other methods include inventories with behavioral anchors (Gerhardt, 1984) and surveys using Likert or psychomotor ability rating scales (e.g., Fleishman Job Analysis Survey; Fleishman & Quaintance, 1984).

Those who have taken a PAT or are aware of the existence and purpose of a PAT perceive them to be job-related and understand their necessity (Ryan et al., 1996). Furthermore, the more job-related (i.e., customized to the job) a PAT, the better. There is a lower likelihood of legal liability (Hoffman, 1999), happier test-takers (Ryan et al., 1996), easier scoring guides (Biddle & Sill, 1999), and better predictive ability (Michaelides et al., 2008) when a PAT is job-related. The purpose of administering a PAT is to distinguish high performing from low performing individuals on tasks that are representative of the job in question. Validation procedures and techniques assist test developers in ensuring the test is job-related and necessary for successful job completion. Validation approaches and their importance are discussed in the following section.

Validity

It is important to validate PATs because, without validity evidence, it is difficult to demonstrate the test's job-relatedness and essentiality to the job. Validating a test provides evidentiary support of the test's job-relatedness. Different types of validation may yield different support for a test's utility. According to the Equal Employment Opportunity Commission (EEOC) Uniform Guidelines on Employee Selection Procedures (1978), *content validity* requires data to provide evidence that the PAT

requires candidates to perform tasks that are representative of important aspects of the job; *construct validity* involves the use of data supporting the PAT in a way that demonstrates individuals who perform well on the test possess the underlying constructs needed to perform the job successfully; and in *criterion-related* test validation, scores on the PAT predict successful job performance or yield a significant correlation between test performance and essential job elements.

In recent years, the EEOC, the Civil Rights Act (CRA), the Americans with Disabilities Act (ADA), and the Society of Industrial Organizational Psychology (SIOP) have emphasized the importance of validation and job-relatedness of selection tools. However, many employers lack validity evidence for the PATs they use (Lonsway, 2003). Lonsway found that across 55 organizations, of those that required applicants to pass a PAT, the tasks included on the test were not consistent across organizations testing for the same job (e.g., police officer). Furthermore, of the inconsistent tasks presumably measuring the same constructs, some tested for abilities not learned until after being hired (e.g., learned in the police academy), and some had different levels of acceptable standards for performance, ultimately producing inconsistent assessments. Therefore, there was inconsistent evidence for content or predictive (criterion-related) validity. In contrast, many researchers investigate these validation approaches in an attempt to provide sound and generalizable procedures in selecting candidates for physically demanding jobs (Anderson, et al., 2001; Arvey, Landon, & Nutting, 1992; Hoffman, 1999; Michaelides et al., 2008). The majority of such research is focused on construct validity with the intention of identifying the underlying constructs that PATs should

assess (Arvey, Landon, & Nutting, 1992; Arvey, Landon, Nutting, & Maxwell, 1992; Hoffman, 1999).

With construct valid tests, individuals who perform well on the test should ultimately perform well on the job. Presumably, the test is measuring characteristics or constructs that are necessary to successfully complete tasks on the job. Depending on the type of job, the characteristics and skills required to successfully complete tasks will vary. Arvey, Landon, Nutting, and Maxwell (1992) conducted a study to provide evidentiary support that two constructs, strength and endurance, were significantly related to various police officer PATs. Their study indicated statistically significant relationships to both constructs and, ultimately, the tasks performed on the tests in question were job-related. Support was provided that successful completion of the PAT was necessary to be qualified for hiring. Earlier, Colker (1986) found that many PATs involve tasks intended to assess speed and strength attributes, as well. More recently, Anderson et al. (2001) identified a number of police work-related physical activities including climbing stairs, running, lifting and carrying, and pushing and pulling. The list is not exhaustive, however these abilities could be categorized into strength (i.e., lifting/carrying and pulling/pushing), endurance (i.e., climbing stairs and running), and speed, if appropriate measures were used (e.g., a stopwatch or timer). Anderson et al.'s results provide support for tasks that share a basis similar to those found in the other studies, suggesting consistency across tasks, constructs, and, ultimately, tests that select for jobs such as police officers. However, these results are inconsistent with Lonsway's (2003) findings and exemplify the controversy regarding PAT validity.

Researchers attempted to find solutions for the lack of validity for PATs, proposing that physiological measures would correlate highly with physical ability tasks (Campion, 1983) and load onto the overall factor of endurance. Therefore, measuring blood pressure, heart rate, and maximum oxygen capacity would indicate one's ability to perform physical activities and could be compared across candidates (Arvey, Landon, & Nutting, 1992). However, physiological measures are administered through a medical exam, and the ADA (1978) states no medical exams can be administered until after a conditional job offer has been presented to the applicant. Other solutions proposed by researchers include elimination of physical testing altogether, an overall health screening, simulation of physical tasks, post-testing after a conditioning program (i.e., length of time for candidates to train and practice with professionals; Lonsway, 2003), and a selection tool that assesses additional constructs other than strength and endurance (Arvey, Landon, Nutting, & Maxwell, 1992; Campion, 1983). Although these solutions are not flawless in themselves, they may reduce adverse impact and, therefore, increase a test's defensibility in court.

PATs will continue to be useful for jobs that require physical effort such as public safety and military jobs; the evidence demonstrates their success in identifying high performers and their predictive ability for future job success. It is now the employers', consultant's, and test-development professionals' responsibility to recommend and facilitate the development of valid, job-related, tests that select an acceptable representation of all groups from the applicant pool. Future PAT test development and research should allow for replication and/or generalizable test construction. Criterion-related validity should be involved in this investigation because it has been shown

deference by the courts; however, it is common for PATs to be developed first using content validity and later criterion validity. Validating selection tools decreases illegal adverse impact, the likelihood of legal liability, and enables the better, more qualified applicants to be hired. Next, we will consider severity of the adverse impact of PATs on multiple protected groups and the importance of this topic.

Adverse Impact

There is a relatively little research on PATs that result in adverse impact based on race and disability when compared to the amount of research investigating gender-based adverse impact. Gender-based adverse impact is present for PATs when men, who typically are stronger and faster than women and therefore score higher than women, are ultimately hired more frequently than are women (Birzer & Craig, 1996; Courtright, McCormick, Postlethwaite, Reeves, & Mount, 2013). However, if the PAT is valid, this is legal because the rejected women would not perform as well as men on job-related tasks. Conversely, if women do not score as high as men on the PAT but are able to perform the job duties as well as men, the test is unfair and illegal. Research suggests that such adverse impact greatly influences the number of women certain jobs, specifically in law enforcement (Lonsway, 2003; Schuck, 2014). Schuck (2014) reported agencies that required applicants to pass a PAT had substantially fewer women than did those that did not require a PAT to be passed. In addition, Lonsway (2003) found 31% fewer women were represented in law enforcement positions of agencies whose applicants had to pass a PAT than those that did not. The researchers infer the shortage of women in law enforcement agencies is a result of PAT adverse impact. Other researchers found significant scoring differences for men and women such that women scored significantly

lower than did men on PATs (Arvey, Landon, Nutting, & Maxwell, 1992; Birzer & Craig, 1996; Courtright et al., 2013).

The protected group impacted depends on the type of test and tasks involved. For example, people of Hispanic descent may experience disparate impact if a PAT requires a specific height to successfully complete a task such as pulling a ladder from the top of a fire truck, because individuals of Hispanic descent are typically shorter than other ethnicities (Ogden, Cheryl, Fryar, Carroll, & Flegal, 2004). The Hispanic applicants may be perceived to be incapable of performing the job when in fact that task may not be required for effective firefighter performance because some ladders are located on the sides of fire trucks where height is not a factor. Moreover, individuals with disabilities may possess the skills and abilities to perform the job of a firefighter; however, they may become disqualified because they did not score high enough on a PAT.

Another consideration is the lack of consistency across PATs in terms of tasks. Because PATs are so controversial, no one method is preferred or the best. Inconsistent scoring methods and tasks across tests make it difficult to generalize the degree of expected adverse impact. Nonetheless, the workforce is increasing in diversity, creating more opportunities for adverse impact to result. To decrease adverse impact, some researchers suggest eliminating the physical test all together and creating a training program to systematically teach individuals to perform the physically demanding tasks (Lonsway, 2003), and training programs have been shown to improve women's scores on PATs (Courtright et al., 2013). Training programs, however, require a cut off score or a certain achievement level to have been reached for successful completion and, therefore, a standard needs to be determined that does not result in adverse impact against protected

groups. Scoring methods greatly influence the amount of adverse impact (Campion, 1983) and should be carefully determined by employers and test developers to limit adverse impact.

To decrease legal liability, employers must show the connection between scoring methods and the ability requirements needed for successful job performance (Campion, 1983). In other words, there needs to be justification supporting the cut off score in relation to the job. For example, someone who scores at or above the cutoff score needs to be able to perform the job, while someone who scored below the cutoff score should not be able to complete the job without significant mistakes. Hiring only the top scorers is known as top down hiring. Employers that use top down hiring on selection tests are more likely to encounter adverse impact (Biddle & Sill, 1999). *Banding* has been suggested as a method that may reduce adverse impact, but does not guarantee its elimination. A common method for top down banding uses the standard error of the difference of the scores of the current applicant pool to determine bandwidth. All applicants scoring within a band are considered equal; applicants are then selected from the band randomly or based on additional job-related elements (Biddle & Sill, 1999). Expectancy bands build on criterion-related validity studies and rely on subject matter experts (SMEs) who are job incumbents who complete the PAT. The widths of the bands are determined by SME scores on the PAT and their job performance ratings (Biddle & Sill, 1999). According to Biddle and Sill, SMEs are used to distinguish levels of low, moderate, and high performances on the PAT. Those levels paired with expectancy model concepts (e.g., Lawshe expectancy model) can identify expected job performance levels of applicants based on their PAT scores. It is suggested by the researchers that

strict top-down hiring is advantageous to employers in terms of selecting the most qualified applicants; however, banding may be more acceptable and less controversial. Banding methods can encompass criterion-related validity data and expectancy models to distinguish applicant expected performance abilities.

According to the Title VII of the CRA (1991), employers must show the test in question is assessing skills and abilities necessary for successful job performance and that without those skills the individual would not be able to successfully perform the job; otherwise, the test is not valid and resulting adverse impact is illegal. It is important to note that although a test may be valid and job-related, if another test exists that results in less adverse impact and is equally valid, it is required by law that the organization use that test for selection rather than the former. The issue of adverse impact is important because many court case claims regarding PAT selection tools are filed on the basis of disparate impact against a specific protected group. However, the ADA (1990), Americans with Disabilities Act Amendments Act (ADAAA; 2008), and Title VII of the CRA (1964; 1972; 1991) have specific qualifications that need to be met and guidelines that need to be followed for a claim to proceed through the system. Details of the acts and current literature are discussed in the following section.

Legal Issues

Title VII of the Civil Rights Act

Title VII states that no employer can deny rights and privileges of employment to any individual based on race, color, sex, religion, or national origin, and requires any selection tool that results in adverse impact to have evidence showing its job relatedness and necessity to perform the job (CRA, 1964; 1972; 1991). The original Civil Rights Act

of 1964 forced employers to change the basis on which they selected employees; they were forced to utilize selection procedures that did not discriminate against protected groups. However, at the time, it was not anticipated that certain well-developed selection tests that were necessary to identify individuals capable of completing the job (e.g., those who are strong enough to lift a 100 lb. person out of a burning building) also unintentionally had disparate impact against certain groups of applicants.

Not until a prominent case, *Griggs v. Duke Power Company* (1971), was unintentional discrimination ruled a violation of Title VII; that is, any disparate impact, whether intentional or unintentional, is illegal discrimination (Hollar, 2000). The *Griggs v. Duke Power Company* (1971) case involved discrimination against African Americans. A standard for promotion eligibility (i.e., passing an exam or presenting a high school diploma) resulted in African American employees more often being disqualified than White employees. The courts ruled this selection approach to be unlawful discrimination, even though it was unintentional. However, not all tests that result in adverse impact breach Title VII. In other words, those tests that are valid and job-related may result in adverse impact; that is, if tests measure abilities necessary for applicants to perform the job successfully, they are not illegal. Nonetheless, following *Griggs v. Duke Power*, it was unclear what factors qualify a test that creates adverse impact to be job-related and valid (Hollar, 2000).

A few years later, the *Albemarle Paper Company v. Moody* (1975) case ultimately clarified the ambiguity of the qualifications. The courts created the burden-shifting method, which sets standards for who is responsible for providing appropriate evidence to defend their position (Hollar, 2000). First, the plaintiff must demonstrate a test

disproportionately rejects members of a protect group. If the plaintiff demonstrates this, the ‘burden shifts’ to the employer who is now responsible for demonstrating job relatedness of the test, such as a positive correlation between the test scores and performance on the job. In other words, when a plaintiff demonstrates adverse impact of a selection procedure, it is the employer’s responsibility to demonstrate job-relatedness and that meeting the standards or passing the test is necessary for successful job performance. The courts place emphasis on validation and job-related tests such that employers need to follow good personnel practice to gain credibility in the courtroom. For example, in *Legault v. aRusso* (1994), the test in question was an exact simulation of tasks performed as a firefighter, yet the court ruled for the plaintiff on the basis of insufficient details in the job analysis to support various tasks on the test. Similarly, in *United States v. City of Erie* (2005), a police officer test lacked job analysis support, and even though validity was established by using current incumbent abilities, the courts ruled against the defendant and expressed concern about job analysis quality, validation techniques, and scoring methods.

The CRA and its protection of certain groups in employment selection practices has resulted in some employers using tests resulting in the least amount of adverse impact while allowing minimally qualified applicants to be hired; this results in less than ideal job success. These factors may encourage employers to include additional, more subjective tools that are not validated, but are known to retain representative proportions of protected groups (Shoben, 1977). Some employers are following these practices because they do not have the time and/or resources to develop and validate a rigorous

selection procedure that demonstrates job-relatedness and necessity, and enables only high performing applicants to be hired while resulting in the least adverse impact.

Americans with Disabilities Act

In order to ensure disabled individuals are protected from unfair discrimination, the ADA has guidelines employers must follow when selecting applicants. This includes any type of evaluation or classification of a candidate for reasons such as pay, promotion, hiring, terminating, transfer, demoting, training, or any instance where the employee is denied equal treatment compared to other candidates (ADA, 1990). Although there is little research in the area of discrimination against disabled candidates on a PAT, a number of court cases have involved applicants claiming to have been discriminated against based on their disability status. *Starkey v. City of Burnsville* (2008), *Kotwica v. Rose* (2011), *Chicago Region v. Thorne Associates* (2012), and *Spires v. Ingersoll* (2013) are a few recent court cases where an individual or group of individuals claim they were discriminated against on the basis of a disability. Discrimination claims make it to the courtroom only if the plaintiff meets specific qualifications.

According to the ADA (1990), to qualify as disabled, the plaintiff must provide sufficient evidence of legal disability such that two requirements are met. First, the plaintiff must express a current mental or physical impairment that restricts life behaviors, have a history of such a deficiency, or be deemed as mentally or physically harmed. Additionally, the plaintiff must possess the essential knowledge, skills, and abilities to perform the job as well as have the capability to perform the tasks on the job with or without reasonable accommodation. If the applicant or employee proves they have a disability under the law, the employer must offer reasonable accommodation.

Reasonable accommodations may involve job restructuring, part-time or modified work schedules, reassignment to a vacant (accessible) position, modifying equipment utilization, and many more. Accommodations that are perceived as unreasonable include requesting reassignment to an unavailable position, supervisory changes, or requesting accommodations that are not available to an individual of that status (Gutman, Koppes, & Vodanovich, 2010).

Recently, the ADAAA (2008) modified and broadened the term disability such that individuals are more likely to qualify as disabled under the law and, therefore, more cases are progressing through the court system. Researchers encouraged employers to forecast potential consequences of these changes as plaintiffs more likely will meet the qualifications for claiming disability and may win their case more easily (Bradbury & Jacobson, 2013; Slack, 2009). An additional burden an employer may experience deals with carrying out the ADA guidelines regarding an employee requiring accommodation. Nored, Goodman, and Thompson (2001) showed that employees who receive ADA accommodation are more likely to leave the organization or have more frequent absences than employees who do not require accommodation. Employers go to great lengths to reduce absences and avoid high turnover; therefore, hiring or promoting individuals who are likely to increase those rates is undesirable.

In contrast, the purpose of the ADA (Title I) is to protect disabled individuals from being unfairly turned down for a position, promotion, training, etc. Prior to establishing ADAAA, there were cases (e.g., *D'Angelo v. ConAgra Foods, Inc.*, 1999) where individuals claimed unfair discrimination and the individual was asked to provide evidence of disability as defined by the law and to verify capability to perform the

essential tasks for the job before requesting reasonable accommodation. Such instances resulted in qualified disabled individuals losing cases due to misinterpretations of the law. The courts ruled in favor of the defendant based on the plaintiff not being legally disabled under the statute's definition. However, if the employer perceived the individual to be disabled and therefore terminated him/her, discrimination occurred (Egan, 2007). In the case of *D'Angelo v. ConAgra Foods, Inc.* (2005), the employer was aware of the plaintiff's impairment and pursued termination, resulting in discrimination; the courts interpreted the statute improperly and ruled for the employer. An appeal of the case further clarified contrasting interpretations of the law when circuits were on opposing sides of the decision regarding the legal definition of disabled. Because the ADA (1990) was interpreted differently throughout districts and circuits, ambiguity was clearly an issue and led to the ADAAA (2008). Before the ADA was passed to protect individuals with disabilities, the Civil Rights Acts of 1964, 1972, and 1991 were adopted to protect minority groups including race, sex, color, religion, and national origin. However, much like disability discrimination, there is little research investigating PATs and discrimination against protected groups such as race, religion, and national origin. Adverse impact or discrimination allegations may be filed in a state or the federal court system. A summary of the Federal court system is provided in the following section.

Court System

In the Federal court system, there are 94 districts courts, 13 circuit court of appeals (i.e., 12 regional and one federal), and one Supreme Court. District courts are the lowest level in the system and are called trial courts; there is at least one district for every state. The second level is the circuit courts, which are the court of appeals. Each circuit

contains several districts. Finally, the third and highest level is the Supreme Court, which entails all circuits and districts. Discrimination claims are first filed at the district level; decisions in these courts are binding on all organizations within the district. Cases at the circuit level are binding on the district courts and all organizations within the circuit. District and Circuit courts may produce conflicting decisions on similar cases due to different interpretations of the law. To resolve these inconsistencies, the case may be re-tried at the Supreme Court level. Supreme Court decisions are binding on all courts and can only be overturned or changed if Congress passes a new law.

In 1997, fewer than 10% of police and firefighter PATs were successfully defended in the courts (Shepherd, 1997). Although this time period was almost 20 years ago, these issues are still of interest and, with an increasingly diverse workforce, employers need to ensure their tests are valid to prevent liability. Furthermore, with the recent act updates (i.e., ADA, 1990; CRA 1991; ADAAA 2008), court decisions (i.e., ruling for the plaintiff or the defendant) are changing direction and are being persuaded by the new laws and guidelines of unfair discrimination and adverse impact. Researchers have examined variables that may contribute to what determines the courts decisions and ultimate rulings; however, the recently modified ADA requirements regarding reasonable accommodation and plaintiff proof of disability were not included in the contributing factors. Court rulings may be influenced by such factors; organizations and future applicants will likely benefit from understanding the impact of various determinants.

The Current Study

Current literature and research has focused on the importance of the CRA (1964; 1972; 1991), the ADA (1990), and the ADAAA (2008) with regard to protected classes.

PATs are greatly impacted by these statutes and influence organizational well-being and employee effectiveness. The present study further examined the guidelines of the ADA (1990) and the CRA (1964; 1972; 1991) and their influences on court rulings in PAT discrimination cases. Cases based on PAT discrimination were examined across multiple characteristics of the case and the test in question. The purpose of the current study is to identify characteristics of discrimination cases that affect the decision in which the court rules for the defendant or the plaintiff.

To identify essential tasks necessary to complete a job successfully, a detailed job analysis is essential and is the most reliable source of job information (Campion, 1983). A job analysis is the basis for which tasks are included on the PAT and enables employers to assess applicants on the abilities that are relevant to that of the job. The following hypothesis has been proposed due to the imperative nature of a job analysis.

Hypothesis 1 (H1): The court will rule in favor of the plaintiff more often for cases without a job analysis than for those with a job analysis.

Validating PATs is becoming increasingly important. The terms and classifications of the ADAAA (2008) have expanded since the CRA (1964) and the ADA (1991), resulting in multiple interpretations (Bradbury & Jacobson, 2013; Slack, 2009) of the same laws. Title VII of the CRA (1991) specifies that in any disparate impact allegation, the organization must provide evidence that the test is job-relevant and necessary for the job to be completed successfully and safely. In order to acquire sufficient evidence for job-relevance and essentiality of the test, it must be properly validated. Validation allows demonstration that successful test completion is necessary for effective job performance; therefore, the following hypothesis has been developed.

Hypothesis 2 (H2): The court will rule in favor of the plaintiff more often for cases without a properly validated test than for those with a properly validated test.

Two constructs that have been identified to be the basis of the tasks in most PATs are strength and endurance (Arvey, Landon, Nutting, & Maxwell, 1992; Campion, 1983; Chaffin et. al., 1978). It is important for employers and those who develop selection procedures to consider the suggested constructs because hiring unqualified applicants for positions requiring higher physical effort may result in detrimental consequences for the organization, especially in public safety jobs. For example, an individual that is hired as a firefighter who did not perform well on the ladder extension and carry task is not likely to use appropriate technique and successfully extend and place the ladder during a fire rescue in a tall building, which could result in severe injury or even death. If the public is at risk because physically incapable employees are performing their job ineffectively, their purpose is meaningless and thus the following hypothesis has been proposed.

Hypothesis 3 (H3): The court will rule in favor of the defendant more often for cases where the job concerns public safety than for those where the job does not concern public safety.

The ADA (1990) requires plaintiffs of disability discrimination cases to meet two qualifications, providing proof of disability and possession of knowledge, skills, and abilities necessary for completing essential job functions. However, defendants also are required to meet one qualification in that the employer must provide opportunities for reasonable accommodation to the plaintiff. Because these qualifications are required to be met by the law, Hypotheses 4 and 5 are predicted below.

Hypothesis 4 (H4): The court will rule in favor of the defendant more often for cases where the plaintiff did not provide sufficient evidence of disability and the ability to perform essential job functions with or without accommodation than for those where the plaintiff did provide sufficient evidence of disability and ability to perform the essential job functions with or without accommodation.

Hypothesis 5 (H5): The court will rule in favor of the plaintiff more often for cases where the defendant did not provide reasonable accommodation for the plaintiff than for those where the defendant did provide reasonable accommodation.

Method

Identification of Cases

The current study is a modified replication of previous research that reviewed court cases from 1992 to early 2014 (Starling, 2006; Westlin, 2014). Similar to those studies, cases were identified through the Lexis-Nexis academic database using *Physical Ability Test*, *Physical Agility Test*, *Physical Fitness Test*, and *Physical Capability Test* as key search terms. District, Circuit, and Supreme Court level cases were included in order to have a large number of cases for review. Cases from previous studies were reviewed and recoded as well as reviewing and coding additional cases found to date. A total of 48 cases were examined in the review, 23 cases were at the district level and 25 at the circuit level. No cases were found at the Supreme Court level.

Coding Scheme

The original coding scheme was created by Werner and Bolino (1997) to examine performance appraisal court cases and was adapted by Shoenfelt and Pedigo (2005) to

investigate cognitive ability test factors that influence court rulings. These studies included 15 factors relating to test development, case characteristics, and court decisions. Because the ADA (1991) and ADAAA (2008) protect certain individuals from unfair discrimination based on disabilities, it is important to understand specific factors related to these acts that drive PAT court decisions. The current study added to the coding scheme the legal criteria plaintiffs are required to meet in order to qualify as legally disabled. Therefore, the coding scheme in the current study included 17 factors with several factors broken down into subfactors. For example, ADA characteristics required three codes: the plaintiff provided evidence of disability (yes/no), the plaintiff demonstrated ability to perform essential job functions with or without reasonable accommodation (yes/no), and whether the employer/organization attempted to provide reasonable accommodation (yes/no). A team of Industrial-Organizational Psychology graduate students rated the cases. Two raters rated each case and highlighted within the case where the coding information is indicated. Inter-rater agreement was computed; for any factor where disagreement occurred between raters, a third party determined the code. The coding factors, a description of each factor, and levels for each are included in Table 1.

Table 1

Coding Factor: Case Characteristics

Coding Factor	Definition	Code	No Information
Court Level	What level court was the claim made?	District, Circuit/Appellate, Supreme	NI
	If District, what district was the case in?	1-94	NI
	If Circuit, what circuit was the case in?	1-13	NI
Basis for Lawsuit	What did the plaintiff argue as the basis for discrimination?	ADA, Gender, Race, Age, Other	NI
ADA Qualifications	Did the plaintiff provide legal proof of disability?	Yes, No	NI
	Did the plaintiff provide proof ability to perform essential job functions?	Yes, No	NI
	Did the organization provide reasonable accommodation?	Yes, No	NI
Race/Ethnicity of Plaintiff	What was the plaintiff's race/ethnicity?	Caucasian, African American, Hispanic, Native American, Other	NI
Gender of Plaintiff	What was the plaintiff's gender?	Male, Female	NI
Number of Plaintiffs	Was the plaintiff one person, or was this a class action lawsuit?	Individual, Multiple, Class Action	NI
Type of Job	What type of job was in question in the lawsuit?	Industrial, Professional, Civil Service	NI
Public Safety Issue	Was the job a public safety position?	Yes, No	NI

Coding Factor	Definition	Code	No Information
Personnel Decision Type	What was the purpose of taking the test?	Selection, Promotion, Reentry	NI
Retesting	Were applicants allowed to retake the PAT more than once?	Yes, No	NI

Coding Factor: Test Characteristics

Coding Factor	Definition	Code	No Information
Job Analysis	Was a job analysis performed?	Yes, No	NI
Standardized/Professionally Developed Test	Was the test used in the selection procedure standardized/professionally developed?	Yes, No	NI
Test Validation	Was the test that was used for selection validated?	Yes, No	NI
	What type of validation study was conducted?	Construct, Content, Criterion-Related	NI
In-House or Consultant	Was the test developed in-house or by a consultant?	In-House, Consultant	NI
Type of PAT	Did the test consist of on-the-job behaviors or other general physical conditions, such as strength or stamina?	Work Sample, Pure Ability, Other	NI
Additional Selection Tests	Were additional tests used as part of the selection process?	Yes, No	NI
Practice or Training Available	Were training materials or practice time offered prior to testing?	Yes, No	NI
Court Verdict	Did the court rule in favor of the defendant or the plaintiff?	Plaintiff, Defendant, Settlement, Summary Judgment Defendant, Summary Judgment Plaintiff	NI

Results

Forty-eight cases were found that related to PAT and discrimination. All 48 cases were reviewed and coded on the 17 factors in the coding system. After a more thorough review, 21 cases were excluded because the basis for the lawsuit did not involve discrimination due to a PAT or the case had been dismissed by the courts (cases that were reviewed and excluded are listed in Appendices A and B, respectively). Thus, the final number of cases included in the study is 27. However, in one case (*Starkey v. City of Burnsville*, 2008) the plaintiff filed two separate claims that resulted in two different rulings (one sex-based, one ADA-based); this case was treated as two separate cases, resulting in a total n of 28.

Raters indicated *no information* (NI) when the case did not contain information regarding a factor. Cases that lacked information on a factor were excluded from analyses for that factor. For example, if one case did not identify whether a job analysis was performed, that case would not be included in the analysis for Hypothesis 1. Only one transcript of a case was reviewed. When a case was appealed or remanded, factors in the final ruling were included in the analyses. Across all 28 cases and all coding variables, inter-rater agreement (i.e., percentage agreement on coding each factor) was 77.7%. A third party independently reviewed each disagreement to determine the correct code. Tables with results of the case and test characteristic codes for each case are provided in Appendices C and D.

It is important to note that due to the small number of cases reviewed and a desire to retain as many cases as possible in the analyses, those cases that were identified as settled were coded as wins for the plaintiff because it was considered that the settlements

were driven by defendant's desire to avoid the costs of further litigation (e.g., time, expense). Hypotheses 1 through 5 were tested using a z test for differences between proportions between independent samples. The formula for this test is provided below.

$$z = \frac{\frac{r_1}{n_1} - \frac{r_2}{n_2}}{\sqrt{\left(\frac{r_1 + r_2}{n_1 + n_2}\right) \left[1 - \left(\frac{r_1 + r_2}{n_1 + n_2}\right)\right] \left(\frac{1}{n_1} + \frac{1}{n_2}\right)}}$$

Where:

r_1 is the number of people in Group 1 who meet the criteria for success.

n_1 is the total number of people in Group 1.

r_2 is the number of people in Group 2 who meet the criteria for success.

n_2 is the total number of people in Group 2.

Because all the hypotheses are directional, all analyses are unidirectional; thus, the critical z value for all analyses is 1.65. For example, for Hypothesis 1, r_1 signifies cases in which a job analysis was performed and r_2 signifies cases in which a job analysis was not performed. The total number of cases for group 1 (n_1) is the number of cases in which a job analysis was performed and the total number for cases for group 2 (n_2) is the number of cases that did not involve a job analysis. As noted earlier, cases that did not provide information regarding whether a job analysis was performed were not included in this analysis. Results for Hypothesis 1, which stated that the court will rule in favor of the plaintiff more often for cases without a job analysis than for those with a job analysis, were inconclusive. Of the 28 cases, four involved a job analysis and the remaining did not include any information regarding whether a job analysis was performed. Thus, the

analysis could not be performed because group 2 (i.e., cases where a job analysis was not performed) contained zero cases.

Hypothesis 2 stated that the court will rule in favor of the plaintiff more often for cases without a properly validated test than for those with a properly validated test. There were a total of eight cases that provided information regarding test validation; the remaining 20 did not provide information regarding test validation. Of the eight, three involved validated tests (n_1), and five cases did not have validated tests (n_2). Of the three that used validated tests, the court ruled in favor of the plaintiff in two of the cases (r_1) and for the defendant in one. Of the five that did not have a properly validated test, the court ruled in favor of the plaintiff in three cases (r_2), and for the defendant in two cases. The results for Hypothesis 2 were not significant, $z = 0.19$, $p > .05$; thus, Hypothesis 2 was not supported.

Hypothesis 3 dealt with whether the jobs in question concerned public safety, predicting that jobs concerning public safety would have justification for more stringent hiring standards and the courts would, therefore, rule in favor of the defendant more often than the plaintiff when the case involves such a position. Of the 28 cases, 20 involved jobs that consist of providing protection for the public and eight involved positions of other types. Of the 20 that involved protection of public safety, the court ruled in favor of the defendant in 14 cases and in six cases the court found for the plaintiff. Of the eight cases involving other types of jobs, the court found for the defendant in two cases and for the plaintiff in six. Hypothesis 3 was supported ($z = 2.17$; $p < .05$).

Hypothesis 4 stated the court will rule in favor of the defendant more often for cases where the plaintiff either did not provide sufficient evidence of disability or failed

to demonstrate their ability to perform essential job functions with or without accommodation than for those where the plaintiff provided sufficient evidence of disability and demonstrated their ability to perform essential job functions with or without accommodation. A total of six cases were reviewed on the basis of an ADA discrimination claim, five of which the plaintiff met only one or neither of the conditions necessary to be qualified as disabled. The one case in which the plaintiff met both requirements, the plaintiff won. Of the five cases where the plaintiff met only one of the requirements, the defendant won four of the cases, and one was settled. With this small number of cases, the analysis failed to reach statistical significance ($z = 1.55; p > .05$); therefore, Hypothesis 4 was not supported. A follow-up shortfall analysis was conducted to determine practical significance. The results indicated that if one case won by the plaintiff had been won by the defendant the results of the z test would have been statistically significant ($z = 1.95; p < .05$).

Hypothesis 5 stated the court would rule in favor of the plaintiff more often for cases where the defendant did not meet their ADA requirement (i.e., providing reasonable accommodation for the plaintiff) than for those where the defendant did provide reasonable accommodation. Of the six cases involving ADA claims, the defendant met their requirement in one case, and did not meet the requirement in four cases. The one case in which the defendant did provide reasonable accommodation the defendant won. Of the four cases in which the defendant did not meet the requirement, the defendant won three and the plaintiff won two, including one settlement. Hypothesis 5 was not supported ($z = 0.73; p > .05$).

Discussion

To include as many cases as possible for this review, district, circuit, and Supreme Court cases were included. However, many of the analyses were not significant. It is important to understand the implications. For example, findings yielded inconclusive results regarding court rulings in cases where a job analysis was conducted and those in which a job analyses was not (Hypothesis 1). There were a small number of cases in this analysis due to the lack of job analysis information in most of the case reports. This finding was unexpected; however, consistent with previous research, a job analysis is a necessary task in creating a job related PAT (Gutman et al., 2011; Hoffman, 1999).

Research states the best way to avoid litigation or reduce legal liability is to have a high quality job analysis performed prior to test identification or development (Gutman et al., 2011). A job analysis provides descriptive and statistical support for physical tasks that are performed on a job and, therefore, their justification for being assessed on the PAT (Arvey, Landon, Nutting, & Maxwell, 1992). Despite the current findings failure to support the hypothesis that cases in which the organization failed to conduct a job analysis would more often be found for the plaintiff, research suggests a job analysis is an essential characteristic for employers to avoid legal liability (Gutman et al., 2011). A job analysis is not the sole determinant of a job related test, although it is an important prerequisite.

Hypothesis 2 takes Hypothesis 1 one step further by predicting that the court will more often rule in favor of the plaintiff in cases without validated tests compared to cases with validated tests. Hypothesis 2 varies from Hypothesis 1 in the sense that it examines whether validation procedures were carried out on the actual test, rather than whether job

analyses were performed. Hypothesis 2 was not supported, as the court did not tend to rule in favor of the plaintiff in cases without validated tests compared to cases with validated tests. The results do suggest, however, that even when a PAT has been validated, the court may still rule in favor of the plaintiff. Although, this is inconsistent with the prediction in Hypothesis 2, some previous cases have shown this to be true. For example, in *United States v. City of Erie* (2005) despite having a validated PAT, the court ruled for the plaintiff expressing concern about the validation techniques and quality of job analysis.

Additionally, according to the present study results, when a PAT has not been validated, it is unclear whether the court will rule in favor of the plaintiff or the defendant. As noted earlier, validation provides evidence that the test is job-related; that is, the test is assessing applicant's abilities on tasks that are essential to job performance. Research has shown that validated PATs are less frequent than one would assume (Lonsway, 2003) given the fact selection tools that result in adverse impact are required by law to be job-related (i.e., shown through validation). That being said, validated PATs are important in reducing employer liability; quality of techniques and procedures are essential in reducing liability, as well.

Hypothesis 3 was supported such that the court tended to rule in favor of the defendant more often in cases where the job concerned public safety than in those that the job does not concern public safety. When the job concerns public safety, the court ruled for the defendant in 14 cases and ruled for the plaintiff in 6 cases. When public safety was not an issue, the court ruled in favor of the defendant in 2 cases and ruled for the plaintiff in 6. The findings suggest that employers with positions involving public safety

are more likely to win a PAT discrimination case than are employees with jobs that do not involve public safety. This finding is consistent with the assumption that jobs with potentially more detrimental consequences (e.g., death of civilians) from failure to effectively perform should have higher standards than jobs in which failure will not result in severe consequences. Furthermore, it can be inferred that the court supports PATs for jobs involving public safety; however, they do not always support PATs for jobs not involving public safety.

Hypothesis 4 was not supported. Cases in which the plaintiff does not meet their required qualifications to establish disability under the ADA were not more frequently ruled in favor of the defendant. However, follow up shortfall analyses were performed to determine practical significance with because of the small sample. The short fall analysis indicated that if one case that the court ruled in favor of the plaintiff had been ruled for the defendant, the results would have been significant. Thus, there is a tendency for the court to rule in favor of the defendant; however, it is not frequent enough to reach statistical significance. In other words, even when the plaintiff does not meet all of their required qualifications to be deemed legally disabled, the court still will not always rule in favor of the defendant. This may be consistent with recent research that has suggested plaintiffs are more frequently gaining credibility for disability in court and, thus, progressing through the court system more easily (Bradbury & Jacobson, 2013; Slack, 2009). These increases likely are due to the recent ADAAA (2008) amendment in which the definition of being disabled is broadened, lightening the burden for plaintiffs to be viewed as disabled.

The guidelines established in the ADA of 1990 require plaintiffs to meet both of two requirements to be legally qualified as disabled. They must provide evidence of being disabled or being regarded as disabled by the employer and demonstrate they are capable of performing the essential functions of the job. Hypothesis 4 addressed those two qualifications. There was only one case (of six cases) where the plaintiff met these requirements; the plaintiff won that case. However, more interestingly, when plaintiff's met only one or neither of the two requirements the plaintiff still won once (20%). These results were not statistically significant; however, the follow up analysis suggests that there is a tendency for the court to rule in favor of the defendant more often when the plaintiff has not met the legal requirements for establishing disability. These findings also suggest that when plaintiffs meet their requirements, employers may be at a loss without sufficient evidence countering the plaintiffs' claims.

Hypothesis 5 was not supported; it is not clear that the court will rule in favor of the plaintiff more often in cases where the defendant did not provide reasonable accommodation than for those where the defendant did provide reasonable accommodation. However, according to the present study results, if the defendant does provide reasonable accommodation for the plaintiff, they are likely to win. When the defendant did not provide reasonable accommodation, the plaintiff won twice (40%) and the defendant won three times (60%). Therefore, it is unclear whether the court will support the defendant or plaintiff in cases where the defendant did not provide reasonable accommodation. It has been shown there are accommodations that are not reasonable (Gutman et al., 2011). For example, plaintiffs who request transfer to positions they are not qualified for or positions that are not vacant have been deemed unreasonable and the

employers are not required to accommodate. These barriers may contribute to the inconsistent findings of Hypothesis 5. The current results do suggest, however, that it is in the employer's best interest to ensure reasonable accommodation has been tried when dealing with an employee or applicant that may be disabled or require accommodation.

Limitations

It is important to note the small number of cases reviewed in this study, specifically the number of cases for each factor. However, there are only so many actual cases concerning PAT discrimination. This study only examined cases that were found in the Lexis-Nexis database, which may not include cases found in other databases such as Google Scholar or Pacer. That is, there may be other cases on the basis of PAT discrimination that were not found in the Lexis-Nexis database. Future research should examine cases in additional databases. Additionally, the key terms searched in the Lexis-Nexis database were limited to the common labels of physical ability tests (i.e., physical ability test, physical agility test, physical fitness test, and physical capability test), whereas different key terms may have yielded additional cases.

Another limitation to this study is the lack of information provided in the documents reviewed regarding each case. Further information may have been provided if more extensive investigation had been conducted. For example, there were 24 cases (86%) that did not yield information on whether a job analysis was performed; it is possible job analyses were conducted and the documents and information gathered from Lexis-Nexis did not provide that information. The lack of information limited the clarity of the coded factors and the power of the analyses. For example, the vagueness of information reported may have resulted in coders indicating the information was not

present when in reality the information may have been inferred. Information that could have been but was not inferred may have inflated the “no information” code because coders did not infer specific information or did not identify information that was not explicitly stated. An additional note is that the researcher used the cases identified by Starling (2006) and Westlin (2014) as the cases tried between 1992 and 2014. Additional cases were identified from 2014 to the present. Future research should verify that there are no additional cases that were overlooked by Starling and Westlin.

Future research should include cases from multiple databases and utilize a variety of key words. These improvements may yield a larger number of cases. It may also benefit researchers to investigate individual circuit and district court databases because they provide additional documents regarding various aspects of the case. Those resources may provide more information on characteristics that would be helpful in coding factors that influence court decisions based on PAT selection tests. Because validation is so important in determining job relatedness, it is recommended to investigate the type of validity procedures performed and the influences each type of validity has on the court ruling. Employers will increasingly conduct validity procedures in order to comply with the law, and the type of validity may play a role. Finally, as noted earlier, a larger sample size enabling the examination of factors within factors (e.g., if a job analysis was performed, who performed it) will provide additional, more informative data. For example, further analyses could examine whether the test was created in-house or by a consultant. In this case, the assumption would be that those tests developed in-house (in which the developer is not always a trained Industrial-Organizational psychologist)

would be less credible in court decisions than those tests developed by an outside Industrial-Organizational consultant.

Conclusion

Although the results of the present study are nonsignificant, a job analysis and test validation are essential for gaining support by the court. Job analysis and test validation are very valuable in developing PATs that are job-related. Jobs that deal with public safety (e.g., firefighters, police officers) appear to have justification for rigorous hiring standards that are likely to be supported by the court. Regarding ADA requirements, on one hand, it is still unclear whether plaintiffs meeting the legal requirements, for establishing disability, will automatically lead to a ruling for the defendant. However, the follow up analyses suggest it is likely an influential factor. Moreover, it also is unclear whether a defendant meeting their requirements to provide reasonable accommodation plays a role in who the court will support. Finally, it is important to keep in mind the small number of cases reviewed and the effect a small sample size has on the findings. Future research should utilize a larger, more in-depth investigation of court cases. Above all, the current findings suggest there are factors that influence court rulings and employers will only benefit from findings of future research clarifying the role these factors play in the determination of court decisions.

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APPENDIX A: LIST OF CASES REVIEWED

- Andrews v. City of Cookeville, 63 Fed. Appx. 804 (6th Cir. 2003).
- Bauer vs. Holder, 25 F.3d Supp. 842 (E.D.Vir. 2014).
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- EEOC v. Lyon-Dell-Citgo Refining, H-06-2738 (S.D. Tex. 2008).
- Ellis v. Chertoff, 4:07CV00041 JMM (E.D. Ark. 2008).
- Ernst v. City of Chicago, 08 C 4370 (N.D. Il. 2013).
- Garcia v. City of Houston, 201 F. 3d 672 (5th Cir. 2000).
- Godfrey v. City of Chicago, 12 C 08601 (N.D. Il. 2013).
- Hunter v. Santa Fe Protective Services, 822 F. Supp. 2d 1238 (M.D. Al. 2011).
- Koger v. Reno, 98 F. 3d 631; (D. Col. 1996).
- Kotwica v. Rose Packing Company, Inc., 637 F.3d 744 (7th Cir. 2010).
- Lanning v. SEPTA, 308 F.3d 286; (3rd Cir. 2002).
- Merritt v. Old Dominion Freight Line, Inc., 601 F.3d 289 (4th Cir. 2010).
- Norman v. Healthsouth Rehab. Centers of Louisville, 06-465-C (W.D. Ken. 2008).
- Peanick v. Morris, 96 F.3d 316 (8th Cir. 1996).
- Peightal v. Metropolitan Dade County, 58 F.3d 1545; (11th Cir. 1995).
- Pietras v. Board of Fire Comm'rs, 180 F.3d 468; (2nd Cir. 1999).
- Spires v. Ingersoll Rand and Trane U.S. Inc., 3:11-2530-TLW-SVH (D. S. Car. 2013).
- Stahl v. Board of Wyandotte County Comm'rs, 101 Fed. Appx. 316 (10th Cir. 2004).
- Starkey v. City of Burnsville, 07-1948 DWF/SRN (D. Minn. 2008).
- United States of America v. The Commonwealth of Massachusetts, 781 F. Supp. 2d 1 (D. Mass. 2011).
- Vasich v. City of Chicago, 11 C 04843 (N.D. Il. 2013).

Webster v. City of Fairfield, 18 F. Supp. 3d 913 (S.D. Oh. 2014).

Wright v. Illinois Dep't of Corrections, 204 F. 3d 727; (7th Cir. 2000).

APPENDIX B: LIST OF CASES EXCLUDED

- Barrientos v. City of Eagle Pass, 444 F. Appx. 756 (5th Cir. 2011).
- Brunet v. City of Columbus, 1 F. 3d 390 (6th Cir. 1993).
- Cindea v. Jackson Township, 97-3280 (6th Cir. 1998).
- Cox v. Columbia Casualty Co., et al., 12-306-SDD-SCR (M.D. Lou. 2014).
- Danskine v. Miami Dade Fire Dep't., 253 F. 3d 1288 (11th Cir. 2001).
- Davis v. CDA Inc., 1:09 CV-406-WKW (M.D. Al. 2010).
- Davoll v. Webb, 194 F.3d 1116 (10th Cir. 1999).
- Dyke v. O'Neal Steel, Inc., 327 F. 3d 628 (7th Cir. 2002).
- EEOC v. Akal Security, Inc., 08-1274-JTM-KMH (D. Ka. 2009).
- EEOC v. Wal-Mart Stores East, 6:13-95 (E.D. of Kent. 2014).
- Eudy v. The City of Ridgeland, 464 F. Supp. 2d 580 (S.D. Miss. 2006).
- Gilbert v. Village of Cooperstown, 3:09-CV-754 (N.D. N. Y. 2011).
- Godoy v. Habersham County, 2:04-CV-211-RWS (N.D. Ge. 2006).
- Holiday v. City of Chattanooga, 206 F. 3d 637; (6th Cir. 1999).
- Howard v. City of Southfield, 95-1014 (6th Cir. 1996).
- International Guards Union of America v. C&D Security, Inc., 07-CV-523 MCA/ACT (D. New Me. 2007).
- International Union, United Plant Guard Workers v. Lockheed Martin Utility Services, Inc., 97-3495; (6th Cir. 1998).
- James v. Sheahan, 137 F. 3d 1003; (7th Cir. 1997).
- Jansen v. City of Cincinnati, 977 F. 2d 238 (6th Cir. 1992).
- Lanning v. SEPTA, 181 F. 3d 478 (3rd Cir. 1999).
- Thomas v. City of Omaha, 63 F.3d 763; (8th Cir. 1995).
- Turner v. Arkansas Children's Hospital, 4:10CV00746 SWW (E.D. Ark. 2011).

APPENDIX C: TABLE OF CASE CHARACTERISTIC CODES FOR EACH CASE

Case	Lawsuit	ADA Plaintiff	ADA Plaintiff	ADA Defendant	Race	Gender	# of P's	Job Type	Public Safety	Decision Type	Retesting available
Andrews v. City of Cookeville	Age	NI	NI	NI	NI	Male	Individual	Civil Service	Yes	Selection	NI
Bauer v. Holder	Gender	NI	NI	NI	NI	Male	Individual	Civil Service	Yes	Selection	Yes
Brunet v. City of Columbus	Gender	NI	NI	NI	NI	Female	Class Action	Civil Service	Yes	Selection	NI
Chicago v. Thorne Associates	ADA	Yes	Yes	No	NI	Male	Individual	Professional	No	Selection	NI
Dugan v. Amtex	Age	NI	NI	NI	NI	NI	Multiple	Professional	Yes	Reentry	Yes
Easterling v. State of Conn.	Gender	NI	NI	NI	NI	Female	Class Action	Civil Service	No	Selection	Yes
EEOC v. Lyon-Dell-Citgo	ADA	No	Yes	No	NI	Male	Individual	Industrial	No	Selection	NI
Ellis v. Chertoff	Race	NI	NI	NI	African American	Female	Individual	Civil Service	Yes	Selection	No
Ernst v. City of Chicago	Gender	NI	NI	NI	NI	Female	Multiple	Civil Service	Yes	Selection	NI
Garcia v. City of Houston	Race	NI	NI	NI	Hispanic	Male	Individual	Civil Service	Yes	Promotion	No
Godfrey v. City of Chicago	Gender	NI	NI	NI	AA	Female	Multiple	Civil Service	Yes	Selection	No
Hunter v. Santa Fe	Age	NI	NI	NI	NI	NI	Multiple	Professional	Yes	Selection	Yes
Koger v. Reno	Age	NI	NI	NI	NI	NI	Class Action	Civil Service	Yes	Promotion	NI
Kotwica v. Rose Packing Company	ADA	No	No	No	NI	Female	Individual	Industrial	No	Reentry	NI
Lanning v. SEPTA	Gender	NI	NI	NI	NI	Female	Multiple	Civil Service	Yes	Selection	No
Merritt v. Old Dominion Freight Line	Gender	NI	NI	NI	NI	Female	Individual	Industrial	No	Reentry	NI
Norman v. Healthsouth Rehab	OTHER	NI	NI	NI	NI	Male	Individual	Industrial	No	Selection	Yes

Note. NI = no information.

Case	Lawsuit	ADA Plaintiff	ADA Plaintiff	ADA Defendant	Race	Gender	# of P's	Job Type	Public Safety	Decision Type	Retesting available
Peanick v. Morris	Gender	NI	NI	NI	Native American	Male	Individual	Civil Service	Yes	Selection	Yes
Peightal v. Metro Dade County	Race	NI	NI	NI	Caucasian	Male	Individual	Civil Service	Yes	Selection	NI
Pietras v. Board of Fire Comm'rs	Gender	NI	NI	NI	NI	Female	Individual	Civil Service	Yes	Promotion	Yes
Spires v. Ingersoll Rand & Trane US	ADA	Yes	No	No	NI	Female	Individual	Industrial	No	Reentry	No
Stahl v. Bd. Of County Comm'rs	Gender	NI	NI	NI	NI	Female	Individual	Civil Service	Yes	Reentry	No
Starkey v. City of Burnsville	ADA	No	Yes	No	NI	Female	Individual	Civil Service	Yes	Reentry	NI
Starkey v. City of Burnsville	Gender	No	Yes	No	NI	Female	Individual	Civil Service	Yes	Reentry	NI
USA v. Commonwealth of Mass.	Gender	NI	NI	NI	NI	Female	Class Action	Civil Service	No	Selection	NI
Vasich v. City of Chicago	Gender	NI	NI	NI	NI	Female	Class Action	Civil Service	Yes	Selection	NI
Webster v. City of Fairfield	Gender	NI	NI	NI	NI	Female	Individual	Civil Service	Yes	Selection	Yes
Wright v. Illinois Dep't of Corrections	ADA	No	Yes	Yes	NI	Male	Individual	Civil Service	Yes	Selection	NI

Note. NI = no information.

APPENDIX D: TABLE OF TEST CHARACTERISTIC CODES FOR EACH CASE

Case	JA	Standardization	Valid	Type of Validity	Developer	PAT Type	Additional Tests	Practice	^aVerdict
Andrews v. City of Cookeville	NI	NI	NI	NI	NI	NI	Yes	NI	S
Bauer v. Holder	Yes	Yes	Yes	NI	In-house	Pure Ability	Yes	Yes	P
Brunet v. City of Columbus	Yes	Yes	Yes	Criterion-Related Validity	Consultant	Work Sample	Yes	NI	D
Chicago v. Thorne Associates	NI	Yes	NI	NI	Consultant	Work Sample	Yes	NI	P
Dugan v. Amtex	NI	NI	NI	NI	Consultant	NI	NI	NI	SJD
Easterling v. State of Conn.	NI	Yes	No	NI	NI	Pure Ability	Yes	Yes	SJP
EEOC v. Lyon-Dell-Citgo	NI	Yes	NI	NI	Consultant	Pure Ability	Yes	NI	SJD
Ellis v. Chertoff	NI	NI	NI	NI	NI	Work Sample	Yes	NI	SJD
Ernst v. City of Chicago	Yes	Yes	Yes	NI	Consultant	Pure Ability	NI	No	P
Garcia v. City of Houston	NI	NI	NI	NI	NI	NI	Yes	NI	D
Godfrey v. City of Chicago	NI	NI	NI	NI	NI	NI	Yes	NI	D
Hunter v. Santa Fe	NI	Yes	NI	NI	Consultant	Pure Ability	No	No	SJD
Koger v. Reno	NI	NI	NI	NI	NI	NI	Yes	NI	SJD
Kotwica v. Rose Packing Company	NI	NI	NI	NI	NI	Pure Ability	Yes	NI	SJD
Lanning v. SEPTA (2002)	NI	No	No	NI	Consultant	Pure Ability	NI	Yes	D
Merritt v. Old Dominion Freight Line	NI	Yes	NI	NI	Consultant	Pure Ability	NI	NI	S
Norman v. Healthsouth Rehab	NI	NI	NI	NI	NI	Pure Ability	NI	No	S

Note. NI = no information.

^aVerdict: P = plaintiff, D = defendant, S = settlement, SJD = summary judgment for the defendant, SJP = summary judgment for the plaintiff.

Case	JA	Standardization	Valid	Type of Validity	Developer	PAT Type	Additional Tests	Practice	^a Verdict
Peanick v. Morris	NI	NI	NI	NI	NI	Pure Ability	NI	Yes	D
Peightal v. Metro Dade County	NI	NI	No	NI	NI	NI	Yes	NI	D
Pietras v. Board of Fire Comm'rs	NI	No	No	NI	In-house	Work Sample	Yes	No	P
Spires v. Ingersoll Rand & Trane US	NI	NI	NI	NI	NI	NI	No	NI	S
Stahl v. Bd. Of County Comm'rs	NI	NI	No	NI	NI	Pure Ability	NI	Yes	SJD
Starkey v. City of Burnsville (Gender)	NI	NI	NI	NI	NI	Work Sample	Yes	No	SJD
Starkey v. City of Burnsville (Gender)	NI	NI	NI	NI	NI	Work Sample	Yes	No	P
USA v. Commonwealth of Mass.	Yes	Yes	No	NI	NI	Pure Ability	Yes	NI	NI
Vasich v. City of Chicago	NI	NI	NI	NI	NI	NI	NI	NI	S
Webster v. City of Fairfield	NI	NI	NI	NI	In-house	Work Sample	NI	No	SJD
Wright v. Illinois Dep't of Corrections	NI	NI	NI	NI	NI	Pure Ability	Yes	NI	SJD

Note. NI = no information.

^aVerdict: P = plaintiff, D = defendant, S = settlement, SJD = summary judgment for the defendant, SJP = summary judgment for the plaintiff.