

2023

## Exploring Supervisory Experiences After the Legalization of Recreational Marijuana in Colorado

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# Walden University

College of Health Sciences and Public Policy

This is to certify that the doctoral dissertation by

Charles Daniel Mason, Jr.

has been found to be complete and satisfactory in all respects,  
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the review committee have been made.

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Walden University  
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Abstract

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Recreational Marijuana in Colorado

by

Charles Daniel Mason, Jr.

MA, Barry University, 2015

BS, Barry University, 2014

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Policy and Administration-Specialization in Criminal Justice

Walden University

August 2023

## Abstract

Colorado became the first state to decriminalize recreational marijuana in 2014. This new public policy resulted in unproven regulatory changes in any population in the United States. The purpose of the study was to discover the core perspective and experiences of 12 supervisors who experienced this phenomenon in their professional occupations, through the lens of accountability. The risk perceptions of supervisors' due to policy shifts regarding recreational marijuana in Colorado were analyzed using the Delve system and hand coding. Findings indicated employees' use of marijuana had a direct impact on productivity, which decreased significantly over time. Employees displayed signs of reduced engagement with the organization, resulting in decreased morale among staff members. Supervisors also noticed changes in employee behavior, such as absenteeism and increased break time. Security was another concern for supervisors. Administrators may utilize the findings to their advantage in effecting good social change by better comprehending employee concerns and developing implementable solutions.

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## Dedication

I wish to dedicate this dissertation to my grandchildren, Ellora and Tiras. I want to pave the way for them to have a bright future so that they can pursue their dreams and happiness. With the completion of this dissertation, I hope they are encouraged to reach higher highs as they seek to serve their country and their fellow citizens. This dissertation may complete my educational goal and launch me into more lifelong learning avenues. I plan to begin a new path in service to my community and country. My father and mother never lived long enough to see their child grow into adulthood, and I only hope I have done well in their memory. To conclude, I would like to thank all the unnamed helpers in my journey who may have offered a kind word of encouragement on this long road - may God bless you all.

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## Table of Contents

List of Tables.....	v
Chapter 1: Introduction to the Study .....	1
Background.....	4
Problem Statement.....	8
Purpose Statement.....	10
Research Questions.....	12
Theoretical Framework.....	12
Significance of Research.....	18
Definitions of Terms.....	19
Assumptions.....	20
Limitations.....	21
Scope and Delimitations.....	22
Summary and Reflections.....	22
Chapter 2: Literature Review .....	24
Search Strategy.....	25
Literature Review.....	26
Impact of Marijuana (Cannabis) on Physical and Mental Health.....	26
Outcomes of Recreational Use of Marijuana.....	32
Federal and Colorado Legislation on Marijuana.....	33
Workplace Safety.....	36
Employees' Health.....	37



Impact of Marijuana Use on the Work Environment .....	39
Drug Testing .....	42
Employee’s Misconduct .....	44
Policy Feedback .....	45
Synthesizing Literature.....	46
Chapter 3: Research Method.....	64
Introduction.....	64
Research Philosophy .....	64
Research Design .....	68
Role of the Researcher .....	70
Sample and Sampling Process.....	71
Sample Size.....	74
Participants Selection Reasoning.....	76
Recruitment Procedures.....	77
Inclusion and Exclusion Measures.....	79
Participation Procedures.....	79
Debriefing .....	80
Instrumentation .....	81
Data Collection .....	82
Data Analysis.....	84
Reliability.....	88
Confirmability.....	88

Pilot Testing.....	89
Expert Committee .....	90
Content Validity.....	90
Summary and Reflections.....	93
Chapter 4: Results.....	95
Introduction.....	95
Participant Information.....	95
Demographics .....	100
Data Collection .....	102
Data Analysis.....	103
Evidence of Trustworthiness .....	114
Credibility .....	115
Transferability .....	118
Dependability .....	121
Confirmability .....	124
Process of Coding .....	124
Content Analysis.....	125
Deductive and Inductive Methods .....	127
Responses to Research Questions.....	135
RQ1	135
RQ2	136
RQ3	137

RQ4	138
RQ5	139
Implications .....	139
Chapter 5: Discussion, Conclusions, and Recommendations.....	143
Implications .....	144
Employee Performance.....	146
Recreational Marijuana Use During Breaks .....	147
Lack of Consensus .....	149
Increased Risk of Job-Related Injuries.....	152
Rise in Marijuana Availability .....	153
Potential Risks .....	154
Established Policy .....	155
Lack of Clarity .....	157
Limitations.....	158
Subjective Views .....	158
Recommendations.....	159
Future Research .....	160
References .....	161
Appendix A: Questionnaire.....	193
Appendix B: Citi Program Course Completion.....	195

## List of Tables

Table 1. Comparison of CBD and THC Effect .....	29
Table 2. Effect of Recreational Marijuana on Health).....	31
Table 3. Participant Demographics.....	102
Table 4. Participant Data.....	106

## Chapter 1: Introduction to the Study

The purpose of this generic qualitative research study was to investigate the core understanding of the outer world of supervisors working in warehouse/distribution centers in Colorado and to gain their perspectives as they experienced in their professional careers. In 2000, Colorado passed Amendment 20, which legalized marijuana for medical purposes, making it one of only five states to enter this experimental change in policy (Anderson et al., 2018; Barry & Glantz, 2018; Davis et al., 2016). Many potential patients did not make use of this state law provision until October 2009 (Burroughs, 2019; Calonge, 2018), which is when the U.S. Attorney General relinquished police action to state law enforcement agencies regarding marijuana use and possession (Blake & Finlaw, 2014; Carboni, 2016; Kamin, 2019).

These state-level changes in policy and law began to be implemented across the United States as other states passed medical marijuana and recreational marijuana laws (Burdick, 2019; Brown et al., 2020; Chapkis, 2015). This liberalization of national policy effectively led to policy development on marijuana in Colorado (Weiss et al., 2017; Yates & Speer, 2018). In 2012, Colorado became the first state to legalize recreational marijuana use and possession by passing Amendment 64 (Cupit, 2015; Hall et al., 2019). As of 2020, 33 states allowed the use of marijuana in some manner, most allowing the use of marijuana for therapeutic purposes (Brown et al., 2020). Also, 11 states legalized the use of recreational marijuana (DISA Global Solutions, 2019; Gomez, 2020).

The complete outcome of this transformation in drug policy, particularly in the workplace, is still unknown (Brinkman & Mok-Lamme, 2019; Sanchez, 2018; Stufano, 2018). Nevertheless, Dougherty (2016) revealed that marijuana was linked to

increased workplace accidents and injuries (Peterman, 2019). Fardhosseini and Esmaeili (2016) showed that marijuana causes health problems for workers. It is also associated with increased vehicular deaths (Arkell et al., 2019; Aydelotte et al., 2019; Cole, 2018). Despite this vital need for understanding supervisors' perceptions in warehouses/distribution centers, research findings indicate a gap in the literature about incentives that can empower accountable behavior through external and internal influences (Knouse, 1979)

In this qualitative study, I examined how supervisors described their experiences concerning employees and organizational changes in a warehouse/distribution facility in Colorado after the legalization of recreational marijuana. A generic qualitative study is a descriptive approach designed to comprehend how people understand the meaning of a phenomenon and is used in discovering answers for the issues under examination (Moser & Korstjens, 2017). My goal was to understand increased availability of recreational marijuana affected the employees in an organization. I used the generic qualitative inquiry (GQI) to draw on a single approach to benefit the analysis without adhering to the five established qualitative methods.

Accountability has been used in healthcare and management research (Knouse, 1979; Oussedik et al., 2017). The psychological theory of accountability (PTA) created by Knouse (1979) is centered on the management methodology of the Lawler-Rhode organizational control model and the psychological approach of the Knouse individual model (Knouse, 1979). In addition to classifying and articulating workplace concepts, supervisors are also responsible for establishing the criteria used to assess employee performance (Stahl et al., 2020). This classifying and articulating can be done by evaluating job descriptions, setting individual goals and objectives,

providing feedback and guidance regularly, and conducting performance reviews (Jordan & Matt, 2014). By doing this, supervisors can ensure that employees understand their organizational roles and accomplish their tasks effectively. Furthermore, supervisors should ensure that these performance standards remain consistent across the organization and are updated as needed (Jordan & Matt, 2014). Through such measures, supervisors can maintain a productive and safe work environment for their employees (Stahl et al., 2020).

Research showed increased marijuana use in Colorado after legalizing recreational marijuana (Albertson et al., 2016; Aydelotte et al., 2017; Hall et al., 2019). These policy changes were contrary to longstanding legislation and public policies relating to workplace safety and zero drug tolerance policies (Barry & Glantz, 2018; Burdick, 2019; Calonge, 2018). Further, these changes raised workplace safety and disruption questions through lawsuits, absenteeism, accidents, mishaps, and incidents (Davis et al., 2016; DeVeaux & Mostad-Jensen, 2015).

Chapter 1 includes an overview of the gap in the literature regarding studies of supervisors' experiences relating to employees and administrative modifications after the legalization of marijuana in Colorado. Chapter 1 includes the problem statement and the purpose of the study to recognize associations regarding these concerns to show the need for the study. Chapter 1 also includes a discussion of the research questions and how the study adds to the knowledge of supervisors' perceptions of employees' accountability in a recreational marijuana-friendly culture. In this chapter, I also discuss the qualitative methodology and research design used to collect data. Finally, Chapter 1 concludes with definitions of key terms and reasons for the assumptions, limitations and delimitations essential in a qualitative analysis of this kind.

## **Background**

States' motivation to circumvent federal laws persists as more Americans perceive marijuana as a noncriminogenic natural product (Albertson et al., 2016; Burroughs, 2019). In this study, I addressed the literature gap on warehouse/distribution center supervisors' experiences in Colorado after legalizing recreational marijuana. One such problem facing supervisors is the increasing potency of marijuana and its growing availability due to legalization (American College of Occupational and Environmental Medicine, 2019; Wilson et al., 2017). Finally, these supervisors have needed to adapt policies while also needing to maintain a safe and drug-free work environment (Carboni, 2016; Davis et al., 2016; Weiss, 2015).

In the 1970s, marijuana was classified as a Schedule I drug under the Controlled Substance Act. As a Schedule I drug, the Drug Enforcement Administration (DEA) and the Food and Drug Administration (FDA) deemed marijuana as having no acceptable medical treatment value (Cole, 2018; Miller, 2018). Albertson et al. (2016) emphasized the increasing potency of marijuana in the United States. and its growing availability due to the legalization of drugs in several states. There is a perceived underlying danger of mishaps occurring due to workers' drug use in some literature (Calonge, 2018; Camarena-Michel, 2017; Carliner et al., 2017).

Studies show the possible detrimental effect marijuana can have on the users' mental and physical states, with a significant difference between male and female users (Albertson et al., 2016; Aloï et al., 2018; Camarena-Michel, 2017). Research shows that legislators have not fully used their current alcohol and tobacco regulatory powers to govern marijuana and its use, nor have they used the lessons learned from prior regulatory actions in the alcohol and tobacco process (Brinkman & Mok-



Lamme, 2019). According to Calonge (2018), the need for policy changes concerning recreational marijuana includes reducing misuse, safety precautions, workplace safety, and product safety.

Supervisors have experienced numerous unfavorable conditions due to marijuana legalization, affecting their feelings about the recent recreational marijuana policy changes (Camarena-Michel, 2017; Carboni, 2016; Cupit, 2015; Weiss, 2015). Additionally, workers who use marijuana can put themselves in dangerous situations and adversely affect their overall health (Chilukuri, 2017; Davis et al., 2016; Hansen et al., 2018). The American College of Occupational and Environmental Medicine (2019) proclaimed that marijuana misuse could lead to unnecessary mental and physical harm to users. This harm is due to the significant hallucinogenic compounds found in marijuana. Barry and Glantz (2018) declared that it would be harder to go back and implement the necessary safeguards to protect workers at their worksites as opposed to moving forward without policy changes.

Albertson et al. (2016) also addressed the underlying dangers for users, which many marijuana advocates often overlook. These detrimental consequences can affect motor vehicle driving, increase neurosis in the user, lead to addiction to the drug, and have adverse withdrawal symptoms from the drug; these adverse effects need further study. Nevertheless, supervisors continually face the possible impact recreational marijuana has or could have on workplace safety and productivity (Denver Metro Chamber of Commerce, 2018; Dougherty, 2016). Based on the existing research, there is a correlation between decriminalizing marijuana and the workplace mishap rate (Aydelotte et al., 2017; Arkell et al., 2019)

The most significant stress for supervisors was the lack of clear instructions regarding the assortment of laws addressing marijuana use in their workplace (Durand

& Chao, 2017; Fardhosseini & Esmaeili, 2016). These laws may not address workplace safety evenly, confusing workers and supervisors (Miller, 2018; Monte et al., 2015). This confusion can impact workers' understanding of the underlying dangers of mishaps due to an employee being exposed to marijuana on the job (Filisko, 2015; Franz, 2019).

Marijuana is America's most used illicit drug (Brown et al., 2020; Davis et al., 2016; Dougherty, 2016; Wilson, 2018). There are documented increases in the use of marijuana throughout Colorado (McGuire, 2013; McGuire, 2018). Thus, Colorado's current atmosphere of legalizing recreational marijuana creates an atmosphere in which some believe the drug is legitimized (McGinty et al., 2017; McGinty et al., 2016). Companies with zero-tolerance policies or policies that dissuade drug use risk having access to a larger workforce. Therefore, many worksites have been heavily impacted (Salas-Wright et al., 2017). Due to the growing use of recreational marijuana, employers must consider the recency and frequency of usage before turning away applicants (DeHoff, n.d.; Wilson, 2018). This phenomenon shows how the legalization of recreational marijuana use and how it can affect personnel policies and hiring and firing procedures (Carnevale et al., 2017; Wilson et al., 2017).

Yates and Speers (2018) challenged the absence of a systematic legal and public policy in the multistate marijuana industry. Yates and Speers (2018) presented an urgent need to build a comprehensive public policy pertaining marijuana legalization and use. Yates and Speers (2018) focused on establishing procedures across state lines to develop a holistic view. The lack of a cohesive approach has a social and economic impact on Colorado's industries (Parnes et al., 2017). Exploring recreational marijuana and supervisors' experiences is necessary to inform workplace

policy (Chung et al., 2019). Such an approach allows the present study to be better guided.

Studies showed that the use of recreational marijuana could impact any given industry (Becton et al., 2017; Cerdá et al., 2019). Research has shown a decrease in traffic fatalities after the legalization of medical marijuana but an increase in traffic fatalities after the legalization of recreational marijuana (Becton et al., 2017; Cole, 2018). Based on existing research, there was a need to explore the social interactions following the legalization of recreational marijuana and its influence in the workplace (Hartman, 2015). Existing literature shows that many people who use drugs are employed (Brown et al., 2020; Davis et al., 2016; Dougherty, 2016). Moreover, legalizing recreational marijuana caused an increase in absenteeism and vehicular crashes (Fardhosseini & Esmaili, 2016; Hansen et al., 2018). Finally, the federal government was less responsive to advocates for decriminalizing marijuana than state governments. This lack of coordination by government bodies raised a complex challenge for employers to assess the conflicting legal obligations across different jurisdictions. For example, an employer in one state would have to comply with its state laws permitting certain forms of marijuana use while also meeting their federal obligations prohibiting such activities. To balance these competing interests, employers should ensure clear policies regarding the use of both legal and illegal substances. Employers should know their respective state laws and federal guidelines to avoid violating either framework. By doing so, employers can protect themselves from liability while providing a safe working environment for all employees (Carroll, 2019).

The supervisors' perception of this dilemma is critical to understanding the problem. I did not find research in which researchers focused on supervisors'

perceptions due to public policy impediments or any studies related to the supervisor's experiences and interests affected by these policy changes. I did not uncover studies in which researchers examined how obstacles affected supervisors' safety interests.

I conducted this study to ascertain the actual impacts recreational marijuana has had on supervisors and workers in their work environments. I obtained observations and opinions of warehouse/distribution centers supervisors concerning their workers' behavior, explored these gaps, and addressed supervisors' perceptions of recreational marijuana's effect on the workplace. I requested that the selected participants participate in this examination due to their employment experience as supervisors in Colorado within the last 5 years. I sought to understand the actions executed by supervisors within their place of employment. This process revealed some steps they felt necessary to manage and promote a safe worksite postlegalization of recreational marijuana in Colorado. Many organizations in Colorado have struggled with how to best reconcile organizational policies with the laws that became prevalent in the state pertaining to the recreational use of marijuana (Compton et al., 2017; Stewart et al., 2019).

### **Problem Statement**

It was unknown how warehouse/distribution center supervisors described their experiences managing workers after the legalization of recreational marijuana in Colorado. The legalization of recreational marijuana is usually linked to several fundamental issues. First, it is associated with the increased use of recreational marijuana among adolescents and young adults, which was also observed in Colorado. Specifically, a report issued by Colorado's Department of Public Health and Environment (2019), Healthy Kids Colorado Survey (HKCS), asserted that 20.6%

of students over 14 years old reported using marijuana at least once, which was a 50% increase after the legalization of its recreational use; 51.4% replied that it is easy to access marijuana.

Secondly, experts observed that legalized recreational marijuana increases costs for society and taxpayers, which could outweigh tax revenues. Notably, by legalizing a new potentially harmful substance, taxpayers could be responsible for the outcomes (e.g., hospital visits, rehabilitation, and unemployment; Golzar, 2015). For example, the Rocky Mountain High-Intensity Drug Trafficking Area (RMHIDTA; 2019) program reported a 62% increase in traffic incidents following the legalization of marijuana. Therefore, legalizing marijuana could lead to increased taxpayer costs covering the work of respective agencies (police, hospitals), health care insurance, and loss of effective workforce.

Thirdly, legalizing recreational marijuana has interfered with the public's health, especially its working population. The incidence of cannabis use disorder increased when recreational marijuana was legalized, which was observed in Colorado (Dills et al., 2021).

Workforce productivity was found to be an issue in companies by impairing the overall productivity of a business. Consequently, the potential increase in financial burden, growing incidence of cannabis use disorders, loss of workforce, and safety issues have become a productivity problem in the state and business sector. However, reports on the adverse outcomes of recreational marijuana legalization do not consider the effect of this substance on two aspects, such as task productivity and counterproductive work behaviors. The reports mentioned above and studies also do not distinguish between the pharmacological and physiological effects of marijuana on humans and the type of marijuana people consume. According to several studies,

certain types of marijuana might not have the same detrimental effects as others, even though workplace drug tests would consider all of them similarly (National Academies of Sciences et al., 2017).

Following the legalization of recreational marijuana in Colorado, several reports were issued regarding the incidence of marijuana use and the policy's overall effect on public and traffic safety. However, none of the reports covered the business sector and the impact of marijuana on the workforce and productivity. The usage of marijuana in the workplace had not been researched and appropriately analyzed to create a clear picture of this substance's effect on employees. Research on recreational marijuana legalization's effects on workforce productivity is a complex issue with an extensive array of variables, from the challenges of conducting anonymous research to determining the type (strain) of marijuana used during work to retain validity and reliability. Therefore, to simplify this task, I focused on the experiences of the Colorado supervisors, who could clarify several issues surrounding marijuana use at work, including this substance's effect on workforce productivity, safety, and incidences of counterproductive work behaviors. The fundamental problem that I investigated was the supervisor's perceived detrimental effect of marijuana on task productivity and safety in the workplace.

### **Purpose Statement**

My goal in this generic qualitative study was to understand warehouse supervisors' experiences after legalizing recreational marijuana in Colorado. I explored how participants were enabled or constrained by the legalization of marijuana.

In this study, I describe the shared origins of tensions in organizations and explain how supervisors created procedures to manage this conflict productively. I

examine supervisors' experiences postlegalized recreational marijuana in Colorado. I explore the perspectives, experiences, and perceptions of those participating.

I used the supervisors' feedback to understand how the policy change was implemented and transformed their workplace and interpersonal relationships. Experts observed that changes in policies shape not only the manner in which the organization is managed, but also how employees relate to management and their peers (Hacker & Pierson, 2019). I also determined how these policies and laws were crucial in shaping workplace conditions and employee performance. I also explored whether these new laws had lessened a supervisor's authority or ability to maintain a safe workplace.

I examined supervisors' perceptions concerning past and current workers' changing behavior in their workforce related to recreational marijuana use (Hollweck, 2016; Lewis, 2015). I also examined supervisors' perceptions of the new regulations and how they affected their workplace. My goal was to understand when, why, how, and under what circumstances these events occurred. Such an approach allows for a better understanding of this phenomenon (McCaslin & Scott, 2015). The study aligned well with the PTA, which grounds its premises in the notion of accountability (Hollweck, 2016; Moynihan, 2014). I used PTA to conduct in-depth telephonic and web interviews. I used this approach to understand how supervisors balanced social realities and managed a business during a policy shift. Many organizations have needed to create new policies on the basis of the external legal climate (Patton, 1999). I identified supervisors' strategies to enable workers to succeed despite real or perceived barriers in a marijuana-friendly society. Many organizations have implemented such policies even if the state in which they operate in legally allows for recreational marijuana use (Rogeberg, 2018; Rubin & Rubin, 2012). I investigated participants' observations and actual experiences with employees who have used

marijuana to understand how changing marijuana laws have affected work performance. The experiences of participants in relation to marijuana use and workplace performance vary (Agee, 2009; Patton, 2015).

### **Research Questions**

In this qualitative study, I examined the perceived effect that legalized recreational marijuana had on the participants' actual experiences. The research questions were as follows:

Research Question 1 (RQ1): In the past 5 years, post-legalization of recreational marijuana in Colorado, what have been the actual experiences of supervisors involving incidents, accidents, and changes in work patterns and worksite safety among employees?

Research Question 2 (RQ2): What are supervisors' individual experiences adjusting to legalized recreational marijuana's legal ramifications in the workplace and off-duty use?

Research Question 3 (RQ3): How have supervisors adjusted their employment policies and practices after the legalization of recreational marijuana?

Research Question 4 (RQ4): What approaches are supervisors using to develop effective and sustainable workplace safety programs, if any, after the legalization of recreational marijuana?

Research Question 5 (RQ5): How did the legalization of recreational marijuana use affect the workforce's productivity, safety, and the occurrence of counterproductive work behaviors?

### **Theoretical Framework**

I used the PTA for this study. Knouse (1979) defined accountability as a state of being liable for personal actions or those stemming from personal responsibilities.



The PTA includes criteria for assessing accountability (performance standards and performance expectations), evidence of accountable behavior (performance, meetings, sensor information), and assessor of accountability (Knouse, 1979). Motivation refers to the objective and enabling of responsible behavior through external and internal factors and compliance with the organization (e.g., supervisor) to receive rewards (Knouse, 1979). PTA implies that people engaged in social situations, including work, must be accountable. Knouse (1979) stated that everyone is motivated to act accountably to receive rewards or maintain access to specific commodities, regulating their accountability.

PTA relates directly to workforce performance, employees' motivation to sustain it, choice of behavioral patterns and communication at the workplace, facilitation of a safe environment, and the manifestation of certain habits (Knouse, 1979). I used the PTA to understand the use of marijuana at work and its potential impact on task performance, workplace safety, and counterproductive work behaviors. PTA also refers to the work of supervisors, who must monitor, assess, and motivate employees. They supervise each employee in the company and assess their accountability. Likewise, they are accountable for the company's performance. The use of marijuana at work could be an employee or a supervisor issue. PTA could be used to analyze the motivation of employees to use marijuana. This theory could become a platform for analyzing supervisors' actual experiences regarding the use of marijuana at work, as it informs employees' productivity, safety, and behavior.

According to Vance et al. (2015), accountability theory explains how the need to justify someone's behavior to another person or organization requires considering accountability as a process that shapes decisions. Specifically, an individual working in an organization must comply with the corporate policies and rules that usually

require following an ethical code of conduct, retaining the principles of adequate communication, interacting with clients, and attaining the company's goals.

Therefore, employees must demonstrate compliance with these rules, indicating their productivity in an organization's context. Being unproductive or not adhering to anti-marijuana policies must be an employee's accountability. Vance et al. (2015) and Knouse (1979) emphasized that individuals must be liable for their actions that affect the company.

Marijuana affects an individual's productivity, and its use is prohibited by some organizational policy (most if not all, companies prohibit its use in Colorado) (Wilson, 2018). An individual employee is accountable for a violation even though recreational marijuana is legalized at the state level. As Doussard (2019) asserted, businesses in Colorado refer to the federal legislation that did not decriminalize or legalize recreational marijuana. In this case, its legalization at the state level does not technically apply to businesses. I used the PTA to understand the conflict between the legalization of recreational marijuana and the corporate policies that deem the use of this substance as a hazard to the workforce and the company's productivity.

Implementation of PTA in studies related to performance and productivity shows that accountability is a valid measure of the phenomena of the effects of marijuana and associated policies in the workplace. According to Han and Hong (2016), the levels of accountability were observed in staffing, performance assessment, and compensation, which significantly affected organizational performance. Furthermore, employee autonomy tends to amplify the positive impact of accountability on performance in two human resource management (HRM) functions: staffing and compensation.

I used a generic qualitative methodology. Generic qualitative researchers use the resources of one or more qualitative methods (Ruggiano & Perry, 2017). The objective is to obtain contributors' opinions concerning events beyond themselves; instead of concentrating on their thoughts, the researcher attempts to identify a phenomenon, a course of action, or participants' viewpoints (Ruggiano & Perry, 2017).

I chose the generic qualitative research design to address the problem and answer the research questions, anticipating that it would facilitate access to the warehouse/distribution centers supervisors' actual perceptions and daily experiences. As part of this study, I used interview questions that concentrated on the who, what, and how concerning these events (Kim et al., 2016). I based this research on a study examining the supervisors' experience and any actual or perceived conflicts that may have occurred due to Colorado's legalization of recreational marijuana (Eller et al., 2016). In this study, I use qualitative research involving professionals working as supervisors in Colorado in semistructured interviews. I recruited supervisors from a variety of companies operating in a warehouse.

I used the semistructured questionnaire developed for participant interviews primary data collection instrument. As part of this study, I used manual coding as a data analysis technique by systematically structuring the most common topics and subtopics that emerged during the interview. I found hand coding a practical mechanism for analyzing data for this study as I sought to ascertain the effect legalized marijuana has had (if any) effect on the Colorado workplace. Through this method, I used my judgment to evaluate the research data. By manually coding the dataset, I became more intimate with the data and had a far clearer understanding during and after the interviews of what techniques and questions were working and

which were not. I was also better positioned to understand these changes' overall impact on the workplace by interviewing supervisors tasked to undertake such changes. The target population was 10 participants; however, the study concluded after obtaining 12 participants for the study (Nelson, Burk, Knudsen, & McCall, 2017; Ose, 2016)

I used DelveTool.com, a software for qualitative data analysis (QDA). Delve is a computer-assisted qualitative data analysis software (CAQDAS) that assists with qualitative research, such as transcription analysis. The population of interest for this research was from different metropolitan areas in Colorado, working in or having worked in a warehouse/distribution center in the last five years. I gathered the data from crucial research questions associated with standardized, open-ended, one-on-one interview questions. These consistent open-ended interview questions highlighted the descriptive understandings of the contributors (Rossman & Rallis, 2016).

I focused this study's observation on supervisors' personal encounters from the supervisors' perspective. The element of observation for this study was the experiences of the individual supervisor. This observation unit supported the researcher in resolving the problem statement and the research questions. The study determined some of the barriers that exist regarding the work of supervisors after the legalization of recreational marijuana. The interviews helped establish the supervisor's perceptions and attitudes concerning the changes in public policy and their observations of workplace safety, counterproductive work behaviors, task productivity, and any difficulties after a policy introduction.

I used purposeful sampling to acquire a comprehensive variety of ideas regarding the experiences and understandings of the target population. This method includes the supervisors' perceptions of workplace safety and how it was affected.

Their subjective experiences and narratives provided a transparent and credible solution for the vital changes needed. By using this method, I explain why this solution was chosen. This method is key to understanding a phenomenon through the varying experiences of different individuals, which are unlikely to remain consistent (Ebneyamini & Sadeghi Moghadam, 2018; Yazan, 2015). This step provides confidence and reliability in a well-rounded approach to finding results (Creswell & Poth, 2017). Purposeful sampling discovers and selects those with the most data to use restricted sources (Patton, 2002) efficiently. Moreover, data collection consists of interviews, inquiry forms, or assessments; thematic analysis will analyze the data. Thematic Analysis (TA) is a proper, open, adaptable, and current technique (Braun & Clarke, 2021).

TA is a process for methodically classifying, arranging and presenting perceptions into summaries with significance relating to developing themes within a text. By concentrating on the relevance of the text, TA permits the investigator to find and put together the shared perceptions of the combined associations and events. This approach is well suited for recognizing common concepts in spoken or recorded topics and relating the meaning of those interconnections (Braun & Clarke, 2021). Also, this technique provides the qualitative researcher with the essential skills necessary to participate in qualitative data analysis.

The status of marijuana can be viewed from prior Executive Orders and other enforcement policies (Dragone et al., 2019). Research has shown that these policies and laws are in flux (Calonge, 2018; Carboni, 2016). Nevertheless, various local authorities are re-examining their policies of criminalizing lesser amounts of marijuana in a person's possession; however, federal rules conflict with state and local regulations (Brown et al., 2020; Stormshak et al., 2019). By analyzing

supervisors' experiences facing current public and private policies concerning marijuana in Colorado, I was able to evaluate their current and past perspectives and their effect on the workplace (Hartman et al., 2015).

### **Significance of Research**

As part of this research, I sought to understand if these guidelines and regulations have played a critical part in forming workplace conditions, including questioning how legalization may have affected employees' performance (Hudak, 2016). I focused this study on the gap in the literature by using the PTA. (Knouse, 1979) built PTA on the management approach of the Lawler-Rhode Organizational Control Model and the psychological process of the Knouse Individual Model (Knouse, 1979). I examined the perceived effect these new laws had on the participants' management style, use of power, and capability to maintain a safe workplace. Both capability and power impact the resulting actions that affect safety within the workplace (Sabatier & Weible, 2015). As part of the study, I performed telephonic and Zoom interviews. Responses from supervisors helped the author understand their viewpoint on policy applications, how these guidelines have altered their lives, and their interpersonal relationships with their personnel (Houck & Midkiff, 2018).

This study's results may enable policymakers in Colorado and other states facing the legalization of recreational marijuana to clear any obstacles facing supervisors concerning the workplace (Handa, 2019). This study could also aid supervisors and employees by providing better options as they transition through barriers and manage workplace safety (Davis, 2018). Scholars in the future may use the knowledge to continue with exploration consistent with the recreational marijuana and workplace safety field. The results may generate strategies to inspire supervisors

to realize their maximum capacity as professional leaders. The findings may help develop informative courses, which could help marijuana users better focus on their improvement and work ethics (Fardhosseini & Esmacili, 2016; Freeman & Murphy, 2016).

### **Definitions of Terms**

*Blue-collar workers*: construction trades, skilled laborers, renovation professionals; machinery workers and examiners; transport and relocating careers; apparatus cleansers, assistants, and manual workers.

*Cannabinoids*: chemical components of cannabis; there are more than one hundred; the most prevalent are THC and cannabidiol (CBD).

*Cannabis (Cannabis Sativa)*: this is a name of a plant from which all marijuana products are derived; it includes 540 chemical substances.

*Decriminalization*: allows marijuana to remain illegal. A person would not be prosecuted for possession under a particular amount within the legal system.

*Marijuana* is the name of all products (medical, industrial, and recreational) made of the Cannabis Sativa plant.

*Medical marijuana*: cannabis contains low or no THC (tetrahydrocannabinol) and a higher dose of CBD (cannabidiol) and is prescribed for health-related issues.

*RCT (randomized control trial)*: an experimental study involving two groups of participants (experimental and control) that evaluates a drug, treatment, or intervention among the target population group.

*Recreational marijuana*: cannabis contains a conspicuous level of THC, a psychoactive component of this substance, and a low level (usually) of CBD.

*Recreational marijuana use*: use of high THC cannabis for recreational purposes and non-medical issues.

*Supervisors*: professionals (managers, formal leaders, instructors) assigned to monitor employees' activity, motivate them and direct their work according to the organizational goals, policies and rules.

*THC (tetrahydrocannabinol)*: a psychoactive component of cannabis that is chemically or naturally minimized or eliminated in medical marijuana and increased or retained in recreational marijuana. Low-concentration THC cannabis is considered industrial marijuana; high THC is recreational marijuana; exceptionally low or no THC (chemically manipulated) is medical marijuana.

### **Assumptions**

Based on this research, I assumed that the escalating use of marijuana among workers would impact productivity. According to Strong et al. (2018) there is a strong relationship between marijuana use and worker productivity. There was an assumption that there is a high turnover rate and absenteeism among workers who abuse alcohol and drugs. Previous research indicated that alcohol and substance abuse impact how long employees stay at their workplace, as well as their attendance rate (Becton et al., 2017; Flores, 2018). Additionally, this escalation of use brings many risks to the workplace and bring supervisors challenges to preserve efficiency and safeguard machinery while maintaining workers' safety (Hasin et al., 2015). This research sought to examine the emphasis on emerging innovative approaches as the marijuana policy evolves and the use of marijuana intensifies. As marijuana becomes legalized in additional states, more organizations need to evaluate how to adjust their operations to these laws, as the latter impact the social behavior and habits of workers (Fischer, n.d.; Schroth et al., 2018).



As part of this study, I assumed that contributors would answer the interview questions truthfully and openly. Another assumption of this assessment was that the research criteria were applicable and confirmed that the participants had experienced the same or similar study phenomenon. Finally, contributors would be interested in participating in this research and had no other purposes, such as influencing their employer, because they agreed to participate.

### **Limitations**

I limited the study's transferability as the research was restricted to a sample of blue-collar workers in Colorado. I focused the study on a limited number of organizations due to the nature of the study (qualitative), which would not allow for involving a large sample. Due to the nature of the research, the causality was challenging to investigate. The study relies on the opinions of supervisors. Thus, the results could be subjective. Participants could have personal biases regarding marijuana and its use, which could inform their approach to those using it for recreational purposes. However, I structured the interview to limit participant bias by focusing on work-related issues and determining which participants have reservations concerning marijuana use for recreational purposes. Researcher bias might be present due to my work as a supervisor with a law enforcement background. I address this issue by reevaluating the participants' responses and challenging personal preexisting assumptions when collecting and analyzing data.

Many participants might not be able or have a limited desire to share their experiences or feedback regarding the recreational use of marijuana in the workforce. Even though the current study would guarantee the anonymity of participation, many supervisors could have been restricted from talking by NDAs (non-disclosure agreements) or other corporate policies. If I had encountered the problem of the

inability to recruit at least ten respondents, the number of interviewees would have decreased, or I would have extended the study's time.

### **Scope and Delimitations**

The scope of this research concerned supervisors working in Colorado within the last 5 years (after the legalization of recreational marijuana). Changes to public policies regarding recreational marijuana may have caused supervisors impediments to maintaining a safe workplace (Cupit, 2015, Denver Metro Chamber of Commerce, 2018; Dougherty, 2016). It was necessary to probe supervisors' actual experiences and the perceived effect recreational marijuana may have had on policies, workplace safety and productivity (Hlavac & Easterly, 2016). I place the emphasis on supervisors in Colorado as a means of filling a gap in the literature. My population was to be supplied by working professionals in blue-collar jobs. This sample excluded law enforcement officers and truck drivers under additional federal guidelines. I excluded other states from this research due to Colorado's preeminence in recreational and medical marijuana legislation (Carboni, 2016; DeVaux & Mostad-Jensen, 2015).

### **Summary and Reflections**

An appraisal of supervisors' subjective experiences in the workplace is germane due to the new shift at the state level regarding recreational Marijuana (Brown et al., 2020). Studies have indicated that these rules and regulations fluctuate (Wilson, 2018; Yates & Speer, 2018). Consequently, with this qualitative study, I aim to understand the perceived changes to existing policies and what fundamental restructuring occurred before and after the legalization of recreational marijuana. Thus, examining supervisors' experiences after the legalization of marijuana is pertinent, and PTA provides the mechanisms for understanding the consequences of

these conflicts between supervisors and employees (Hunt & Pacula, 2017).

Subsequently, the author will apply a study method to utilize a generic qualitative research approach (Creswell & Poth, 2017).

These laws necessitate new practices and guidelines affecting public and private workplaces (Wichowsky & Moynihan, 2008). By investigating contemporary public organizations concerning marijuana in Colorado, I evaluated current and past perceptions and the worksite's perceived consequences. As the external legal framework within a state changes, the perception of what an organization may or may not allow also shifts among workers (French, 2017). I review further data regarding recreational marijuana and a supervisor's experience concerning workplace safety and safe practices in Chapter 2.

## Chapter 2: Literature Review

From 2001 to 2016, marijuana policy changes led to headline news throughout the United States (Albertson et al., 2016). Amendment 2, a Florida initiative for medical marijuana in specific conditions, was not passed by officials in 2014 (WUFT, 2015). In 2016, Florida's state officials began to be pressured by many pro-marijuana groups to change their stance on marijuana policy (WUFT, 2015). On November 8, 2016, Amendment 2 was approved (New York Times, 2017). Previous researchers showed that states increasingly pass laws in dispute with federal directives as many local governments reassess their past policies to criminalize lesser amounts of marijuana in an individual's possession (Albertson et al., 2016; Sheridan, 2019). These actions sparked my interest in the topic as I am a scholar-practitioner in public safety. Colorado became the focus of this study because it had made broad adjustments through Amendment 64 to allow the sale, farming, and personal use of recreational marijuana in 2012 (Aydelotte et al., 2017; Blake & Finlaw, 2014).

As part of this chapter, the researcher reviews prior research on recreational marijuana, supervisors, and workplace safety. The chapter begins with an overview of my literature search strategy and the study's theoretical framework. In the literature review, the researcher discusses past and current research on recreational marijuana and workplace safety and any apparent gaps within this field. According to Fusch et al. (2018), insufficient data has been generated on the use of recreational marijuana in the workplace due to the legalization of this substance still being a relatively new phenomenon in many states of the United States.

Many groups and individuals advocating for the repeal of marijuana restrictions promote different strategies and views, some simplistic (Ghosh et al., 2017). In contrast, others are comprehensive (Brinkman & Mok-Lamme, 2019).

Nonetheless, this has raised workplace safety questions regarding litigations, absenteeism, industrial accidents, and confrontations (Fardhosseini & Esmaeili, 2016; Filisko, 2015). Consequently, this study explores the complexity of recreational marijuana, the workplace, supervisors, and their actual experiences (Bellamy et al., 2016; Isa, 2017). The chapter ends with a summation of the central objectives of the literature review.

### **Search Strategy**

I used several search approaches to attain literature on this subject matter. The outcomes differed, varying on which search engine and key terms were submitted. Words such as *recreational marijuana* and *workplace safety* resulted in 6,840,000 articles using Google. I yielded negligible results through general searches using Thoreau and entering the title *recreational marijuana*. Google Scholar provided 3,660 documents using the keywords *recreational marijuana* and *workplace safety*. Not all the findings were relevant to this study's criteria, and I modified the search was using specific terms. Comprehensive keywords such as *policy*, *Colorado recreational marijuana*, *cannabis*, *recreational marijuana*, and *workplace safety* yielded the best results. Likewise, I obtained additional peer-reviewed articles from Walden University databases, Walden Theses and Dissertations, EBSCO, Sage journals and ProQuest. I discovered many peer-reviewed articles using custom date ranges. Most sources that I used in the literature review published between 2015 and 2019.

As part of this qualitative study's nature, I use a generic (descriptive and exploratory) analysis that focused on marijuana reform in Colorado within the last 5 years and the actual experiences of the supervisors. Such experiences may drastically differ among managers (Creswell & Poth, 2017). Supervisors' experiences concerning recreational marijuana in the workplace and possible (if any) incidents and

mishaps should be examined (Dougherty, 2016; Freeman & Murphy, 2016; Cole, 2018).

### **Literature Review**

I commenced a thorough literature review to grasp the study's boundaries comprehensively. Data were then arranged into thematic concepts. These ideas include state rights, workplace safety, employees' physical and mental health, employee impairment, supervisors and drug tests, employee misconduct, policy feedback, and young workers.

#### **Impact of Marijuana (Cannabis) on Physical and Mental Health**

Legalizing marijuana has usually been impeded by considerations concerning human health and wellness. Even today, when its medicinal properties and limited symptoms were established, marijuana is classified by the DEA (2021) as a Schedule I drug alongside cocaine, heroin, and LSD, which are either highly addictive or have an irreversible effect on human health. The United States, alongside several European countries, such as the Netherlands, Germany, and Portugal, decriminalized and legalized (in some states) the medical and recreational use of marijuana. However, opposition to the legalization and decriminalization of this substance still exists.

As the Centers for Disease Control and Prevention (CDC) (2018) states, marijuana is the most used controlled substance in the United States, with 37.6 million users in 2017. Around one in 10 users becomes addicted to marijuana in the United States; those using it before 18 years old develop an addiction in the proportion of one to six users (CDC, 2018). Liebrechts et al. (2015) connected addiction to marijuana among young adults as the catalyzer of marijuana consumption and, as a result, the development of the addiction. The mechanism of addiction to recreational marijuana stems from its elevated level of THC, which affects

neurophysiological adaptations leading to stimulant-induced dopamine release (Zehra, 2018). The primary condition for marijuana addiction is its regular consumption and existing behavioral issues. Behavioral changes affect the formation of addiction to marijuana by impairing salience processing and altering striatal activation during the rewarding process (Zehra, 2018). As a result, this set of processes leads to anticipation of marijuana use, binge intoxication, and withdrawal, which form an addiction to this substance. As CDC (2018) reported, the concentration of THC has increased considerably over the last several years, making modern recreational marijuana highly potent and addictive.

Several studies also recognized the positive and mixed impact of recreational marijuana with high THC concentration on human health. For example, according to a randomized control trial conducted by Zajicek et al. (2015), marijuana relieves muscle stiffness in patients with multiple sclerosis. Mixed results were reported by Colizzi et al. (2018), who compared the effects of diverse types of recreational marijuana (different THC concentrations) on long-term users, moderate users, and non-users. This randomized control trial revealed that marijuana with high THC concentration had a more pronounced adverse effect on non-users' cognitive functions (impaired cognition) compared to moderate and long-term users of this substance (Colizzi et al., 2018). Anxiety and transient psychometric symptoms were more pronounced in non-users, while at the same time, those who used marijuana moderately or regularly were less affected by recreational marijuana (Colizzi et al., 2018).

In addition to the addictiveness, recreational marijuana directly impacts the human brain by impairing the functionality of its regions responsible for memory, learning, attention, decision-making, coordination, emotions, and reaction time (Volkow et al., 2016). Scientists distinguish between the short-term and long-term

effects of marijuana on the brain. The short-term effect of recreational marijuana could be temporary problems with attention, learning, reaction time, memory, and mood (Volkow et al., 2016). The long-term effect of marijuana use is strongly associated with its consumption in the pre-adulthood period. Younger users could permanently damage their brains, impacting connections between areas affecting attention, memory, and learning functions (Smith et al., 2015). Irreversible damage to brain functions by marijuana use is connected to several factors, including the age of onset, the concentration of THC in the product, and other substances consumed with marijuana (Weir, 2015). Newmeyer et al. (2017) conducted a randomized control trial that evaluated the effects of oral smoking. They studied the difference between the effects of vaporized marijuana and a placebo on psychophysical tasks and participants' attention, which showed that oral administration of cannabis had the most adverse effect on coordination and attention (Newmeyer et al., 2017). Also, it was revealed that occasional smokers were less affected by an overall marijuana intake, despite the type of administration (Newmeyer et al., 2017).

Other effects of recreational marijuana on health are explored less frequently. For instance, marijuana could be damaging to cardiovascular health. Recreational marijuana increases the heart rate, increasing the risks of stroke and heart disease (Page et al., 2020). Recreational marijuana has a short-term effect on mental health by causing disorientation, feelings of anxiety and paranoia, and temporary psychosis (Volkow et al., 2016). Several studies linked recreational marijuana to depression, anxiety and suicide among adolescents. However, the causal relationship between this substance and mental disorders is under-researched (Lowe et al., 2020; Marco et al., 2020). Because many use recreational marijuana as self-treatment for depression and anxiety, such studies may have significant limitations in conducting studies among



persons with the existing problem. The difference between cannabinoids and their impact on human health is shown in the following table:

**Table 1**

*Comparison of CBD and THC Effect*

Cannabidiol (CBD)	Tetrahydrocannabinol (THC)
Antipsychotic component	Psychoactive component
Interferes with the effect of THC.	Stimulates dopamine-containing
Blocks dopamine release at brain receptors.	neurons.
	Increases level of striatal dopamine.

*Note.* From Chetia and Borah (2020).

As Table 1 shows, THC is the primary cannabinoid that has a detrimental effect on human health and triggers changes in the brain. Levels of THC in recreational marijuana are high. Recreational marijuana has often been labeled as a so-called *gateway drug* by claiming that marijuana is the drug of choice for those consuming *hard* drugs such as cocaine, heroin, or amphetamines (Volkow et al., 2016). An investigation by the National Institute on Drug Abuse (2017) produced mixed results. It claims that choosing harder drugs is associated with confounding variables, including family history, mental illness, peer pressure, drug availability, socioeconomic status, social isolation and lack of family involvement, which cannot be separated from the use of recreational marijuana. Colorado Department of Public Health and Environment (2017) does not provide a definite answer to this question. It claims that marijuana could be the first drug of choice among those addicted to harder drugs only in some circumstances. In other words, it is unclear if a person would continue to try other drugs only because they tried marijuana.

The impact of THC on human health is contradictory and, in most cases, demonstrates an adverse effect on users' brain functioning and cognition. For example, according to Chetia and Borah (2020), a comparison of THC and CBD impact on humans showed a recent increase in marijuana disorder rates; this trend is associated with the detrimental effects of THC and its increased concentration in recreational marijuana. However, a higher level of CBD in marijuana could neutralize the impact of high THC on users' psychophysical performance (Chetia & Borah, 2020).

However, it is critical to mention that high CBD levels are usually present in medical marijuana rather than recreational marijuana. With the increase in high THC concentration in recreational marijuana, it is more likely that the adverse effects of this substance on the human brain will be sustained. Specifically, Yu et al. (2020) recognized that an effort of legalize marijuana (both medical and recreational) led to an increase in its use, primarily among young adults (mainly recreational marijuana). This report reveals that today's most active, experienced, and involved workforce tends to use recreational marijuana, which is less likely than others to experience its adverse effect. Table 2 shows the systemized information about the impact of recreational marijuana on human health:

**Table 2***Effect of Recreational Marijuana on Health)*

System	Effect	Period
Nervous system	Impaired attention, cognition, reaction, learning, memory, coordination, and concentration.	Short-term, long-term
Cardiovascular system	Increased heart rate, potential risk of stroke, and heart disease.	Short-term
Mental health	Alertness, anxiety, depression, feeling down, slow; the desire to try harder drugs, slow emotional reactions; development of addiction.	Short-term, long-term
Human development	Impaired brain functions, cognition, memory, and learning are impaired in case of regular use in adolescence.	Long-term, permanent

*Note.* From Chetia and Borah (2020).

The most significant effect of recreational marijuana is on the human brain, leading to temporary and long-term results. It is critical to consider that the reports and studies focus on long-term users of this substance. Addiction is another unwanted outcome of the recreational use of marijuana, which could become a burden for the users. Some compare recreational marijuana use to tobacco smoking, which is also addictive. Nevertheless, regular tobacco does not dramatically affect the human brain compared to marijuana (Van der Kloet et al., 2015). This issue is the main barrier to

recreational legalization and to using this substance in public places, workplaces, and regular consumption.

### **Outcomes of Recreational Use of Marijuana**

Even though marijuana remains one of the most researched substances in the scientific community, most recent empirical studies are dedicated to its medical type. Limited randomized control trials (RCTs) devoted to the use of recreational marijuana create an ambiguity in the understanding of its effects on human health, functionality, and psychological well-being. For instance, Bahorik et al. (2018) carried out a longitudinal RCT that they dedicated to marijuana's effect on psychological health showed that its recreational use among patients with depression could interfere with depression symptom improvement and increase psychiatry visits. As part of a RTC, Van der Kloet et al. (2015) determined that marijuana produces acute dissociative symptoms in users, similar to the symptoms experienced by typical cocaine and methylenedioxymethamphetamine (MDMA) users. Empirical research conducted by Solowij et al. (2019) revealed the high toxicity of recreational marijuana with a high THC concentration that usually intensifies the effect of marijuana on the human brain. These studies show a negative effect of recreational marijuana on health, impairing users' functionality and psychological health.

As was noticed earlier, the concentration of THC varies across the strains of marijuana and the end-product sold in specialized shops or illegally by dealers. A comparison of the effects of different THC concentrations in marijuana was conducted by Hunault et al. (2015). Hunault et al. (2015) recognized that low THC concentration led to dizziness, dry mouth, problems with memory and the ability to focus, and feelings of being either sedated or anxious, depending on the individual user (Hunault et al., 2015). A high concentration of THC reduces alertness, and

increases contentment and calmness, making users want to use the drug more (Hunault et al., 2015). The higher increase in THC-induced marijuana decreases stimulated feelings and increases anxiety for eight hours after smoking (Hunault et al., 2015). Such studies are rare due to the potential ethical issues related to restricting substances to the research sample. However, this research also provides unique findings showing that the high concentration of THC, the more anxious and confused an individual was.

### **Federal and Colorado Legislation on Marijuana**

Currently, the federal government classifies marijuana as a Schedule I drug, while advocates for decriminalizing or legalizing marijuana view this stance as less responsive and find a partial solution in state governments (Chapkis, 2015; Hudak, 2015; Yates & Speer, 2018). Likewise, the different response at the various government levels is visible because each legislator and policymaker is motivated by personal, professional, religious, and political forces to develop laws in specific ways (Johns, 2015; Jones et al., 2018). This viewpoint is also true for the supervisors and employees in each state or locality regarding how they support or decline to support specific laws (Kang & Lee, 2018). A key feature of most state plans has been to reduce users' harm and lower users' incarceration rates (Jordan & Matt, 2014; Kim, 2016).

Nevertheless, the federal government has remained resolute even after several states have moved to decriminalize or legalize marijuana (Kerr et al., 2017; Sheridan, 2019). These new state guidelines and laws affect public and private work environments. This stance creates uncertainty as employees can violate federal law while participating in an act deemed lawful by their state government (Reed, 2018; the State of Colorado, 2019; Taylor et al., 2016a). As these policies and regulations

appear in flux, other states have begun to push back at Colorado's permissive marijuana stance (Goyette, 2015; Kerr et al., 2018). Nebraska and Oklahoma pursued legal action in the federal courts, asserting that Colorado violated federal regulations (Carboni, 2016; Graham, 2015). While the courts did not rule in their favor, the door was left open for legal action (DeVeaux & Mostad-Jensen, 2015).

Still, federal regulations conflict with state and local laws (Kim, 2016; Sabet, 2018). As pressure mounts, many other local and state governments have plans to reassess their marijuana policies, which in the earlier period have banned smaller quantities of marijuana in a person's possession (Pacula & Smart, 2017; Taylor et al., 2016; Titus, 2016). The remaining question is when and how the federal government will provide guidance and clarity to employers and employees.

Often, Colorado is used as an example of marijuana legalization when advocating for this practice in other states across the United States. The history of marijuana legalization in this state and the current trends show a picture of reconsidering this practice. In 2000, Amendment 20 to the State Constitution of Colorado was made to legalize medical marijuana for the patients prescribed this substance and approved to use it as medication. This Amendment allowed patients (mostly with chronic conditions) to use medical marijuana. However, patients could not fill the prescription in pharmacies since this substance is still scheduled as a Class I Drug by the DEA. Instead, they could purchase it from dispensaries or their health care provider.

In 2012, Colorado passed Amendment 64, allowing adults (over 21 years old) to possess up to six marijuana plants and give a gift of 28g of this substance to other adults. Purchasing the same amount of marijuana products is allowed as well. Nevertheless, the consumption of recreational marijuana is limited. Public use of

marijuana products was banned and driving under the influence of marijuana is even now an offense in Colorado. In 2016 in Denver, however, the authorities allowed public consumption of marijuana (recreational and medical) under Ordinance 300. In 2019, the Governor of Colorado signed a law allowing licensed businesses that sell marijuana to create so-called social marijuana use areas.

However, it is critical to mention the ruling made in *Coats v. Dish Network* (2014). The judge allowed employers to enforce the federal regulation of marijuana to ban off-the-job worker use of this substance. Therefore, even though Colorado has state laws allowing recreational marijuana usage and consumption of this substance in some public areas, employees cannot use it on and off the job if employers specify this rule in their policies. In other words, adults could use recreational marijuana at home and in selected places. Still, they could not be allowed to do so by their employers, even outside their workplace. While not all companies regularly evaluate their employees on drug use, those that use this practice could enforce the ban on consuming recreational marijuana in the workforce even if it remains legal in Colorado.

Furthermore, even though the marijuana business in Colorado is flourishing, state authorities prepared changes to the laws on marijuana. According to recent estimations, in 2020, marijuana sales reached \$2.19 billion, a significant increase compared to 2019, when businesses accumulated \$1.75 billion in revenues in Colorado. Despite growing revenues and benefits the state reaped by corporate tax, Colorado authorities are concerned about the effect of high-potency marijuana (high concentration of THC) on human health. In May 2021, the federal government introduced House Bill 1317. The law requires a review of a medical marijuana patient's mental health history before prescription and analysis of levels of THC

potency in recreational marijuana, as well as dosage form, authorized quantity, and consumption instructions to ensure that selling of high concentrations of THC in marijuana products is avoided (Mitchel, 2021). Several sources also show a trend of Colorado policymakers considering limiting THC concentration in recreational marijuana to prevent its detrimental impact on users' health (Vo, 2021; Hindi, 2021). According to Colorado General Assembly (2021), the new law, HB21-1317, will regulate the concentrates in marijuana starting from 2022 (including THC) to decrease and limit the negative effect of this substance on health.

The analysis of federal and state legislation and regulations on marijuana shows a vivid ambiguity regarding adults' freedom to use this substance for recreational purposes. The federal government sees marijuana as a Class I drug (alongside heroin and cocaine). At the same time, Colorado and some other states legalized it for medical and recreational use. At the same time, Colorado employers have a right to ban it on their premises and off the job. Moreover, the potency of marijuana is a subject of regulation now. Therefore, Colorado adult citizens can use marijuana for recreational purposes but not if they are part of the full-employed workforce. This issue represents a legal and human rights conflict, as the legislation allows the use of this substance while providing those with economic power over workers to violate this right. Due to the elevated level of ambiguity in Colorado legislation, this conflict creates a problem for the state's companies and the local workforce.

### **Workplace Safety**

After the legalization of marijuana in Colorado, numerous studies focused on the positive effect of marijuana on the state, including the workplace (Brinkman & Mok-Lamme, 2019; Chan et al., 2019). As a result, marijuana advocates pushed for



additional shifts in regulation and policy at the state and federal levels (Titus, 2016). Marijuana advocates highlight the reported decrease in workplace deaths after enacted medical marijuana laws (MMLs) (Anderson et al., 2018). Other studies presented data showing that young people in the United States frequently and routinely abuse marijuana and alcohol (Aloi et al., 2018). Nonetheless, there was a lack of information in the studies conducted on juvenile subjects. Smith et al. (2018) found that younger workers use marijuana more than older workers.

The added accessibility of marijuana could play a role in a worker's health and welfare by impairing their capacity to perform basic tasks and leading to a decline in their overall job performance (American College of Occupational and Environmental Medicine, 2019). The work environment for Coloradoans can vary like most Americans; for example, there are construction sites, forklifts, machinery, warehouses, and office buildings (Fardhosseini & Esmaeili, 2016). Arkell et al. (2019) revealed the detrimental effect marijuana use had on an individual's driving ability. Aydelotte et al. (2017) asserted that there was no meaningful effect marijuana use had on motor vehicle fatalities. However, Aydelotte et al. (2019) acknowledged that fatal vehicle crashes did rise post-legalization. The variations in reports can lead to uncertainty. They could alter a manager's ability to operate a company and question what an employer can do to maintain a safe work environment (Rusche & Sabet, 2015).

### **Employees' Health**

Health professionals have seen an increase in marijuana users' post-legalization; the visits were due to mental and physical ailments (Chilukuri, 2017; Desai et al., 2018). According to Moulin et al. (2018), those in the initial stage of neurosis have a heightened risk for "violent behavior" if they use marijuana. This

report is disturbing since marijuana users have more mental disorders (Choi et al., 2016).

Moreover, Stormshak et al. (2019) suggest that younger adults are more likely to use marijuana after enacting recreational marijuana laws (Tormey, 2010). This report contrasts with Maxwell and Mendelson (2016). Among marijuana users, there is a higher rate of mental illness than in the general population (Choi et al., 2019). This illness is exacerbated by the growing potency of marijuana and its mounting obtainability due to its legalization (Albertson et al., 2016; Hall & Lynskey, 2016; Sabet, 2018).

The therapeutic feature of marijuana is not entirely validated (Brown et al., 2020), and it is prematurely celebrated by users and advocates (Anderson et al., 2018; Wright & Metts, 2016). Apart from managing pain in patients, marijuana is associated with “aneurysmal subarachnoid hemorrhage (aSAH)” (Rumalla et al., 2016a) and an increase in “Ischemic stroke” (Rumalla et al., 2016b). It also reduces “white matter” in the brain (Shollenbarger et al., 2015).

This finding contrasts with many reform movements advocating greater accessibility for marijuana use, even in the workplace, as Rusche and Sabet (2015) reported. Albertson et al. (2016) addressed the underlining dangers for users, which many marijuana advocates often overlook. These detrimental consequences can affect motor vehicle driving, increase neurosis in the user, lead to addiction to the drug, and bring about adverse withdrawal symptoms (Cole, 2018; Davis et al., 2016a). These harmful effects can lead to employees missing work or experiencing side effects while off the job. Supervisors must provide employees with information and resources concerning workplace safety and promote safety in their time off (Hlavka, 2017).

Early studies on marijuana use tended to take a sharply uncritical approach to the drug's dangers, focusing on the cultural structure of theoretical social justice reform (Cerdá et al., 2019). Research has outlined the rise of marijuana use, and some authors posited that users participated in a harmless exercise of freedom. The advocacy for marijuana use was far ahead of science (Sabia & Nguyen, 2018; Sznitman & Zolotov, 2015).

The earlier the age of marijuana use, the more severe and substantial consequences for the brain; these findings suggested indirect but significant effects of recreational marijuana use on the brain (Orr et al., 2016). Supervisors need to establish better monitoring and control mechanisms with increased usage. This action includes obtaining motor vehicle information in "non-fatal" vehicle collisions to understand better the full range of harm to employees and the public (Peterson et al., 2018). There is also a need to establish best practices and lessons learned in Colorado from prior years and in other states on adverse effects and problems relating to marijuana use and the workplace (Phillips et al., 2015; Phillips et al., 2018). Similarly, supervisors must consider employees who would not have consumed marijuana products if marijuana were not legalized by the state where they live (Kosa et al., 2017; Smith et al., 2018).

### **Impact of Marijuana Use on the Work Environment**

Marijuana affects the user in many ways. Insobriety is one impact, with - marijuana users answering a survey reporting increased drugged driving (Davis et al., 2016b). Previous studies have examined different outcomes (Cousijn et al., 2017). Recreational marijuana (RM) has led to the adverse effects of increasing use and dependency (Freeman & Murphy, 2016). Carliner et al. (2017) disclosed that the perception of marijuana being harmless is rising, while marijuana use disorder is also

increasing. Nonetheless, there has also been an upsurge in “facial” injuries by users (Sokoya et al., 2018).

Anderson et al. (2018) found that marijuana use has improved workplace safety, while Chan et al. (2019) found that marijuana use has decreased opioid deaths. Contrasting these findings, Rezkalla and Kloner (2019), Dougherty (2016) Lane and Hall (2019) advised that marijuana increases heart rates and has been associated with increased workplace accidents, injuries, and motor vehicle deaths. Supervisors have an added danger of concealability due to marijuana-infused products such as “edibles” and rising potency (Maxwell & Mendelson, 2016; McGuire, 2013).

As the availability of marijuana becomes a factor, there has been a rise in the use of marijuana (Kulig, 2016). Investigations have demonstrated that there has been a rise in accidents and injuries on the job due to impairment (Nagele-Piazza, 2019; Maxwell & Mendelson, 2016; National Safety Council, 2018). This issue is a danger not only to the worker but to the employee’s coworkers, clients, and the public, as marijuana use has been shown to diminish the abilities and the aptitudes of the user; consequently, potential accidents risks increase (National Safety Council, 2019; Newmeyer et al., 2017b). The unpleasant side effects for users include drug dependency, the heightened probability of vehicular accidents, diminished respirational activity, and vascular illnesses (Tormey, 2010).

Subsequently, supervisors are facing many unknown physical and mental health problems of their employees due to the increasing use of marijuana, which has been shown to “impair” the user while operating a vehicle or equipment, which would impede job performance (Occupational Health & Safety, 2019; Rocky Mountain High-Intensity Drug Trafficking Area, 2017). Consequently, Okere (2018) asserted that the frequent use of marijuana could lead to adverse health effects, bringing about

negative financial and community outcomes. Rumalla et al. (2016a) and Rumalla et al. (2016b) also corroborated this finding.

Occupational Health & Safety (2019) maintains that no amounts of marijuana (THC) products or other manufactured goods are permitted for workers in safety-sensitive jobs or positions where safety is paramount. However, older working-age adults who use marijuana have an increased risk of injuries and production interruption in the workplace (Kunz, 2018). Finally, Salas-Wright et al. (2017b) disclosed no differences in users' "socioeconomic" level, nor did health factors play a significant role.

Even so, marijuana legalization has begun to shift the perception of the harmfulness of marijuana in younger working-age Americans (Evans III, 2017). This perception could lead to increased use and a rise in marijuana use disorder among adults and children (Evans III, 2017; Orr et al., 2016). Policymakers must develop outreach programs to survey citizens on what they know and ascertain the impact of marijuana on public health (Ghosh et al., 2017). Ghosh et al. (2016) noted that the correct data was not being collected, and a growing problem is not being acknowledged due to this lack of information.

Finally, even though there has been an improvement in social justice reform, advocates for marijuana reform feel much more needs to be done. For example, employees are not protected from their supervisors' disciplinary actions, which is still the norm, even as indications that the public is shifting its opinion toward marijuana use (Goyette, 2014). With a firm understanding of previous research, Chapter 3 describes the methods utilized in this research study and expand upon existing studies.

## **Drug Testing**

Many states have taken several paths to legalize marijuana; some provide legal protection for employees and employers, while others offer none (Olafson, 2016). Throughout the United States, policymakers are under pressure from the same interest groups operating simultaneously in several states to pass marijuana reform (Boylan, 2015; Pierson, 1993; Wilson et al., 2017). This escalating use of marijuana among workers can impact productivity in the workplace and challenge employers to preserve efficiency and maintain workers' safety (Schroth et al., 2018). It was critical to discover the conflicts many supervisors face as the workplace is reconfigured (Mettler, 2019; Wichowsky & Moynihan, 2008). There was a high likelihood of a lack of clarity among supervisors regarding sound policy (Moynihan, 2014).

Employers are charged with maintaining a safe work environment while ensuring employees comply with the law (Calonge, 2018; Carliner et al., 2017; Cupit, 2015). Employers are limited in finding potential candidates due to the current employment rate and COVID-19 protocols in the American job market. However, Americans increasingly use marijuana (Burroughs, 2019; Denver Metro Chamber of Commerce, 2018; Sabia & Nguyen, 2018). Applicants and employees test positive at a higher rate after legalizing recreational marijuana (Burdick, 2019; Hansen et al., 2018; McCarthy, 2016; McClure, 2018). Some employers search for potential job applicants via social media websites and explore current employees' activities (Becton et al., 2017). They also drug-tested potential applicants and current employees (McClure, 2018). Employees can falsely assume that because marijuana is legal, they have a right to use it (Pirone, 2019).

Nevertheless, employers can not restrict their pool of applicants without losing out on potential workers. Marijuana users may choose not to apply for a company

position, knowing they could fail a drug test (McNichols, 2019). The drug tests themselves could help the job applicant form an opinion regarding the job, which can lead job candidates to seek employment elsewhere. Employers are challenging (Murse, 2020), and they must draw from a diminishing pool of drug-free applicants who could bring about poor results. Employers are trying to attract new hires while sustaining a healthy and safe work environment in a drug-friendly society (Smith et al., 2018).

Consequently, many employers are querying their attorneys and human resource managers to ascertain the meaning of the latest changes. They seek clarity for drug testing in the pre-hiring phase, random testing, and drug testing after an accident to determine who is at fault (Carboni, 2016; DeHoff, n.d.; Filisko, 2015). Some best practices and protocols should still be followed to protect staff, the public, and employers in a civil lawsuit (Rhoades McKee's Employment Law Team, 2018). Research shows that employers must update their policies and enforce them evenly. There are misunderstandings and doubts; however, in Colorado, it is still lawful to terminate an employee due to the use of marijuana, including medical marijuana (Filisko, 2015; Franz, 2019).

Researchers have found noninvasive procedures to detect THC levels to address this problem better. In the future, employers will obtain oral fluids from an employee to track an employee's more recent marijuana use compared to a urine test. Once perfected, these procedures will significantly address a gap in employer problems due to intoxication questions resulting from marijuana use (Hartman, 2015). Nevertheless, there are still technical issues to overcome before this technique can be fully deployed (Newmeyer et al., 2017a). Different testing approaches and procedures will increase as the growing use of marijuana presents a public health and safety

hazard. It amplifies workers' potential risk of injury to themselves and others (Newmeyer et al., 2017b).

### **Employee's Misconduct**

Alone, marijuana has increased motor vehicle crash rates (Arkell et al., 2019; Aydelotte et al., 2019). Marijuana is not consumed in a vacuum; alcohol is widely accessible for employees' consumption; these combined accesses will place them in a high vulnerability state, leading to dependence on one or both drugs (Dubois et al., 2015). In and of itself, binge drinking is a problem that can lead to unintended injuries and loss of life (National Institute on Alcohol Abuse and Alcoholism, 2019). When combined with alcohol, a fatal accident's odds rise as a worker's potential errors increase (Dubois et al., 2015). This issue is merged with the growing availability and assimilation of marijuana use among Coloradans (Longo, 2017).

According to Aydelotte et al. (2019), Cole (2018) and Kirsch (2019), an increase in motor vehicle collisions and deaths occurred after the legalization of marijuana (Lane & Hall, 2019). Drugged driving is a problem; Larkin (2015), however, detecting marijuana in the users is no longer the basis for arrest in a state with legalized marijuana. According to Caulkins et al. (2015), fewer arrests have been made post-legalization. This lack of law enforcement activity could lead to more individuals and future employees using marijuana (Aloi et al., 2018; Burroughs, 2019; Carliner et al., 2017; Cerdá et al., 2019). McCarthy (2016), Pratt (2016), and Quest Diagnostics (2019) all indicate that a more significant percentage of Americans are using marijuana now than before legalization, as shown by the upsurge of positive tests after accidents and through pre-employment and random testing.



## **Policy Feedback**

Policy feedback helps policymakers understand how their policy changes the issues and impacts the community (Pierson, 1993). Reed (2018) and Wichowsky and Moynihan (2008) reveal that what must be considered is that the negative impacts of the legalization of marijuana far outweigh any positive benefit of the drug, including the fact that legalizing marijuana legitimized its use to future employees and current employees (McCarthy, 2016). Many citizens receive their understanding of issues from mass media, and there begins the policy feedback loop (Kang & Lee, 2018). Here, the media has played a role in shaping the coverage of the marijuana movement. One factor in the growth of the marijuana movement has been news coverage (McGinty et al., 2017).

Some news organizations emphasized the possible harm of increasing marijuana availability to the community, while others did not (Kim, 2016; McGinty et al., 2016). The lack of reports could have lessened the possibility that voters were fully informed as they went to the polls (McGinty et al., 2016). Some groups advocated for abolishing all drug testing (McGuire, 2013). Stufano (2018) and Carliner et al. (2017) revealed that this action would endanger the public and the community. Consequently, policymakers have a growing need for oversight as drug activity increases (Connors, 2016; Gove, 2016). Some challenges were foreseen, while others were not (Monte et al., 2015; Nkemdirim Okere (2018). This research may reveal to policymakers some of the hidden problems in this respect.

Marijuana use is not a new phenomenon and was widespread before legalization (Durand & Chao, 2017) but has increased after legalization (Martins et al., 2016). After legalization, the states could tax marijuana at varying levels; nonetheless, accessibility is becoming a public health issue (Durand & Chao, 2017;

Gove, 2016). One of the goals of advocates for marijuana legalization was the reduction of racial disparity in incarceration, and current research reveals that this goal has not been achieved (Kamin, 2019).

### **Synthesizing Literature**

Legalizing marijuana has been impeded by human health and wellness factors. Even today, when its medical uses are purported, marijuana is identified by the DEA (2021) as a Schedule I drug alongside cocaine, heroin, and LSD, which are either highly addicting or have irreparable results on human health and wellness. The United States (some states), alongside numerous European countries, such as the Netherlands, Germany, and Portugal, legalized the clinical and recreational use of marijuana (Anderson, 2012). However, resistance to the legalization and decriminalization of this compound exists.

According to the CDC (2018), marijuana is one of the most generally used controlled substances in the United States, with 37.6 million users in 2017. Around one in ten individuals end up being addicted to marijuana in the United States; those using before 18 establish addiction in one to six users (CDC, 2018). Liebrechts et al. (2015) connected addiction to marijuana amongst young people to their life occasions and transformational situations throughout their lives as the catalyzer of marijuana intake and, as a result, the growth of the addiction. The device of developing an addiction to recreational marijuana stems from its high degree of THC, which influences neurophysiological adaptations resulting in stimulant-induced dopamine launch (Zehra, 2018). Behavior adjustments impact addiction to marijuana by impairing the functions of the forebrain throughout the incentive process (Zehra, 2018).

Consequently, this collection of processes brings about the expectancy of marijuana usage, binge intoxication, and withdrawal, which forms a dependency on this material. The primary problem of dependence on marijuana is its routine consumption and existing behavior problems. As CDC (2018) reported, the concentration of THC has boosted significantly over the last few years, making modern-day recreational marijuana extraordinarily potent and addicting.

Numerous research studies likewise recognized the favorable and combined effect of recreational marijuana with high THC concentration on human health. According to a randomized control test conducted by Zajicek et al. (2015), marijuana alleviates muscular tissue stiffness in patients with multiple sclerosis. Colizzi reported amalgamated outcomes et al. (2018) that contrasted the impacts of diverse kinds of recreational marijuana (various THC concentrates) on long-term, moderate, and non-users. The outcomes of this randomized control trial showed that marijuana with high THC concentration had a more noticeable damaging result on cognitive functions (damaged cognition) in non-users compared to moderate and long-term drug users (Colizzi et al., 2018). Anxiousness and transient psychometric symptoms were extra pronounced in non-users. At the same time, those who utilized marijuana reasonably or consistently were much less affected by recreational marijuana (Colizzi et al., 2018).

Along with the addictiveness, recreational marijuana directly impacts the human mind by hindering the functionality of its areas responsible for memory, attention, decision-making, control, feelings, and reaction time. Scientists differentiate the short-term and long-term impact of marijuana on the brain. The temporary effect of recreational marijuana could be short-lived problems with attention, reaction time, memory, and mood (Volkow et al., 2016).

Irreparable damage to brain functions by marijuana use is connected to several factors, the age of onset, the concentration of THC in the product, and other substances consumed with marijuana (Weir, 2015). The long-lasting effect of marijuana usage is strongly associated with its intake in the pre-adulthood period. Younger users might permanently damage the brain and how it develops connections between its areas, influencing attention, memory, and learning features (Smith et al., 2015). A randomized control test compared the impacts of oral and smoked marijuana. Also, it evaluated marijuana with a placebo on psychophysical tasks and participants' attention, which revealed that oral administration of marijuana had the most adverse impact on organization and interest (Newmeyer et al., 2017). Also, it showed that those periodic smokers were much less impacted by overall marijuana consumption (despite the sort of administration) (Newmeyer et al., 2017).

Other impacts of recreational marijuana on health and wellness are discovered less frequently. For example, marijuana could damage cardio fitness, and recreational marijuana increases the heartbeat, stroke, and heart disease (Tormey, 2010). Recreational marijuana has a short-term effect on mental health and wellness by triggering disorientation, feelings of stress and anxiety, fear, and short-term psychosis (Volkow et al., 2016). Numerous studies linked recreational marijuana to depression, anxiousness, and self-destruction among teenagers, yet the informal partnership between this material and mental illness is under-researched (Lowe et al., 2020; Marco et al., 2020). Because some use recreational marijuana for self-treatment of depression and anxiousness, it is feasible that such research has significant limitations on individuals with current problems.

The National Institute on Drug Abuse Examinations (2017) created mixed outcomes. They acknowledged that opting for more addictive drugs relates to

perplexing factors, which include family history, mental disease, peer stress, drug accessibility, socioeconomic condition, social seclusion, and a lack of household participation, which cannot be divided from the use of recreational marijuana. Finally, recreational marijuana has been frequently labeled as a so-called "gateway drug" by asserting that marijuana is the first drug of preference for those using "hard" drugs (cocaine, heroin, amphetamine). Colorado Department of Public Health and Environment (2017) does not give a particular answer to this question. It asserts that marijuana could be the initial drug of choice amongst those addicted to harder drugs only in some conditions. Simply put, it is unclear if a person would undoubtedly attempt various other drugs just because they attempted marijuana.

The effect of THC on human wellness is conflicting and shows an adverse effect on individuals' brain functions and cognition. According to Chetia and Borah (2020), a comparison of THC and CBD effects on humans showed a current increase in marijuana disorder rises. This trend is related to the harmful effects of THC and its boosted concentration in recreational marijuana. However, a greater level of CBD in marijuana can counteract the effect of high THC on users' psychophysical efficiency (Chetia & Borah, 2020). Nevertheless, it is crucial to state that high CBD levels exist in medical marijuana instead of recreational. With the boost of high THC concentration in recreational marijuana, it is more likely that the damaging effects of this compound on the human mind would undoubtedly be sustained. Notably, Yu et al. (2020) identified that an effort to the legalization of marijuana (both medical and recreational) led to an increase in its usage amongst young people (primarily recreational marijuana). This report implies that today's most active, skilled, and involved workers often use recreational marijuana and are more likely than others to experience its damaging result.

It is essential to consider what the studies reveal concerning the individual user and their experiences regarding the lasting impact of this drug. The most significant result of recreational marijuana is on the human brain leading to short-term and long-term effects (Albino, 2017). Addiction is an additional undesirable result of the recreational use of marijuana, which could be a problem for the users—some contrast recreational marijuana usage to cigarette smoking (likewise habit-forming). Nevertheless, regular tobacco does not dramatically affect the human brain compared to marijuana. This issue is the major obstacle to recreational legalization and using this substance in public areas, offices, and routine usage (Anderson, 2012).

Although marijuana remains among the most-researched compounds in the scientific community, most current empirical research is committed to its medical form. Minimal randomized control tests (RCTs) committed to understanding the use of recreational marijuana produce ambiguity in understanding its impacts on human health and wellness, functionality, and psychological wellness (Yu et al., 2020). For example, a longitudinal RCT by Bahorik et al. (2018) devoted to marijuana's psychological health results revealed that its recreational use amongst clients with depression could disrupt anxiety signs and symptom enhancement and increase psychiatry visits. According to the RCT conducted by Van der Kloet et al. (2015), marijuana generates acute dissociative symptoms in individuals, which is typical for drug effects and MDMA. An empirical study conducted by Solowij et al. (2019) revealed the high toxicity of recreational marijuana with a high THC concentration that usually heightens the result of marijuana on the human brain. These research studies show an adverse effect of recreational marijuana on health and wellness, harming users' performance and mental health and wellness.

The concentration of THC varies across the strain of marijuana and the product sold in specialized shops or illegally. A comparison of different THC concentrations in marijuana was conducted by Hunault et al. (2015). This research study identified that a low concentration of THC resulted in lightheadedness, dry mouth, problems with memory and attention, and feelings of being either sedated or distressed (depending on the user) (Hunault et al., 2015). The high concentration of THC reduced awareness, satisfaction, and calmness, and it caused individuals to seek drugs more (Hunault et al., 2015). The enhanced THC induced depressed moods and increased anxiety eight hours after smoking cigarettes (Hunault et al., 2015). Such research is unusual due to the moral issues of introducing illicit substances to the study sample. Nonetheless, this research study also gives distinct findings revealing that the higher the levels of THC, the more nervous and the less focused a person is.

Currently, the federal government identifies marijuana as a Schedule I drug; however, supporters of decriminalizing or legalizing marijuana view this stance as much less receptive and discovered a partial remedy in state governments (Chapkis, 2015; Hudak, 2015; Yates & Speer, 2018). Also, the different response at the federal government level shows up since each lawmaker and policymaker is encouraged or driven by individual, experts, religious, and political pressures to establish regulations in particular means (Johns, 2015; Jones et al., 2018). The different response is also true for the supervisors and employees in each state or locality regarding supporting or refusing to support regulations for recreational marijuana (Kang & Lee, 2018). A vital feature of most state strategies has been to minimize users' injuries and reduce users' imprisonment (Jordan & Matt, 2014; Kim, 2016).

Nevertheless, even after numerous states have decriminalized or legalized marijuana, the federal government has remained undaunted (Kerr et al., 2017;

Sheridan, 2019). This lack of accord among lawmakers creates instability as workers can break federal law while participating in an act deemed lawful by their state government (Reed, 2018; the State of Colorado, 2019; Taylor et al., 2016a). These new state guidelines and legislation affect public and private work environments. As these plans and policies seem in flux, various other states have started to push back at Colorado's liberal marijuana position (Goyette, 2015; Kerr et al., 2018). Nebraska and Oklahoma pursued a lawsuit through the federal courts, asserting that Colorado breached federal guidelines (Carboni, 2016; Graham, 2015). While the courts did not intervene, the door was left open for further legal action (DeVeaux & Mostad-Jensen, 2015).

Still, federal guidelines conflict with state regulations (Kim, 2016; Sabet, 2018). As stress mounts, various other state governments have plans to reassess their marijuana policies, which in the earlier period have prohibited smaller amounts of marijuana in an individual's possession (Pacula & Smart, 2017; Taylor et al., 2016; Titus, 2016). The current question is when and how the federal government will clarify this issue for employers and employees.

In 2000, Amendment 20 to the Constitution of Colorado was passed to legalize medical marijuana for use by individuals. This Change enabled people (primarily those with persistent conditions) to use medical marijuana. Nevertheless, they could not fill up the prescription in pharmacies since marijuana is still assigned as a Class I drug by the DEA. Instead, they could acquire it from dispensaries or healthcare providers. Colorado is often used as an example of marijuana legalization when advocating for this practice in other states across the United States. The history of marijuana legalization in this state and the existing trends may provide a blueprint for reassessing this technique.



In 2012, Colorado passed Amendment 64, permitting adults (over 21 years old) to possess approximately six marijuana plants and give 28g of this compound to other adults. Buying the same quantity of marijuana products is also allowed. Nevertheless, the usage of recreational marijuana is limited. Public use of any marijuana product was outlawed, and driving under the influence of marijuana is still an offense in Colorado. In 2016 in Denver, the authorities enabled the public intake of marijuana (recreational and medical) under Statute 300. In 2019, the Governor of Colorado signed legislation allowing qualified businesses that sell marijuana to create social marijuana use locations.

While not all companies regularly assess their employees on substance abuse, those who utilize this technique could ban consuming recreational marijuana in the labor force even if it remains legal in Colorado. Nonetheless, it is essential to state the ruling made in *Coats v. Dish Network* (2014). The judge permitted companies to ban employees from work for using marijuana. As a result, although Colorado has state laws enabling recreational marijuana to use and consumed this compound in some public locations, workers cannot utilize it at work and off the job if employers specify this rule in their policies. In other words, adults could use recreational marijuana in their homes and defined locations; however, their employers could also ban them from doing so when they are beyond their work environment.

According to the current estimations, in 2020, marijuana sales reached \$2.19 billion, a significant boost contrasted to 2019, when companies collected \$1.75 billion in earnings in Colorado (Stufano, 2018; Taylor, Bunker & Rodriguez, 2016). Despite expanding revenues and the state's advantages in business tax obligations, Colorado authorities are concerned about the impact of high-potency marijuana (the high concentration of THC) on human wellness. Additionally, even though marijuana use

in Colorado is growing, state authorities have prepared changes for the legislation on marijuana. In May 2021, House Bill 1317 was presented, which required a review of medical marijuana and an individual's mental health and wellness background before prescribing medical marijuana.

According to Colorado General Assembly (2021), the new law, HB21-1317, will control the concentrates in marijuana starting from 2022 (including THC) to lower and limit the adverse impact of this drug on wellness. Also, the bill required an analysis of levels of THC strength in recreational marijuana, as well as dose kind, authorized amount, and usage instructions to ensure that marketing of high concentrations of THC in marijuana items is avoided (Mitchel, 2021). Several sources also show Colorado policymakers' pattern of restricting THC concentrations in recreational marijuana to avoid harming users' wellness (Vo, 2021; Hindi, 2021).

The evaluation of federal and state regulations and regulations of marijuana shows that there is vibrant obscurity concerning the liberty of using this substance for recreational purposes by adults. The federal government regards marijuana as a Class I drug (alongside heroin and cocaine). At the same time, Colorado and a few other states legalized it for medical and recreational use. Still, Colorado employers have a right to ban it on their properties and off the job. Furthermore, the effectiveness of marijuana is a subject of policy currently. Therefore, Colorado adult citizens can use marijuana for recreational purposes but not if they are part of the full-employed workforce. This problem represents a lawful and civil rights dispute, as the regulation allows using this compound while giving those with financial power over employees the ability to break this right. Due to a high degree of ambiguity in Colorado regulations, this issue creates a problem in the state's business and the community's labor force.

After the legalization of marijuana in Colorado, various research studies concentrated on the positive result of marijuana in the state, including in the workplace (Brinkman & Mok-Lamme, 2019; Chan et al., 2019). As a result, marijuana supporters pushed for additional shifts in policy and plans at the state and federal levels (Titus, 2016). Marijuana supporters highlight the reported decrease in workplace deaths after medical marijuana legislation (MMLs) was passed (Anderson et al., 2018). Other research studies offered data revealing that young people in the US frequently as well as routinely abuse marijuana as well as alcohol (Aloi et al., 2018). Nonetheless, there was a lack of details in the research on adolescents based on any outcome. Smith et al. (2018) did discover that younger employees are utilizing marijuana at a greater rate than older workers.

The increased access to marijuana might contribute to an employee's health and well-being by harming their ability to execute fundamental tasks and decreasing their overall performance (American University of Occupational and Environmental Medicine, 2019). The workplace for Coloradoans can vary like most Americans; for example, there are construction worksites, forklifts, machinery, storage facilities, and office buildings (Fardhosseini & Esmaeili, 2016). Arkell et al. (2019) disclosed that the destructive effect of marijuana usage reduced a person's driving ability. Aydelotte et al. (2017) asserted that there was no purposeful impact marijuana use had on automobile fatalities. Nevertheless, Aydelotte et al. (2019) acknowledged that fatal vehicle collisions increased post-legalization. The variants in literature can result in unpredictability, and they can modify a manager's ability to operate a company and question what a company can do to maintain a secure workplace (Rusche & Sabet, 2015).

Health experts have seen increased marijuana users' visits post-legalization; the complaints have included mental and physical conditions (Chilukuri, 2017; Desai et al., 2018). According to Moulin et al. (2018), those in the preliminary stage of neurosis have an enhanced risk for "aggressive behavior" if they utilize cannabis. This information is disturbing because cannabis users have a more significant percentage of mental disorders (Choi et al., 2016).

Furthermore, Stormshak et al. (2019) suggest that more young adults are more likely to use marijuana after legalizing recreational marijuana laws (Tormey, 2010). This study contrasts with Maxwell as well as Mendelson (2016). Among marijuana users, mental disorders are more prevalent than in the general population (Choi et al., 2019). These disorders are exacerbated by the growing strength of marijuana and its mounting obtainability because of its legalization (Albertson et al., 2016; Hall & Lynskey, 2016; Sabet, 2018).

The restorative feature of marijuana is not entirely verified (Brown et al., 2020), and it seems too soon celebrated by individuals and supporters (Anderson et al., 2018; Wright & Metts, 2016). Apart from taking care of discomfort in patients, marijuana is associated with "aneurysmal subarachnoid hemorrhage (aSAH)" (Rumalla et al., 2016a) as well as an increase in "Ischemic stroke" (Rumalla et al., 2016b). It is also shown to minimize the "white tissue" in the brain (Shollenbarger et al., 2015).

Some reform activists have overlooked this, supporting higher availability of marijuana usage even in the workplace, as Rusche and Sabet (2015) reported. Albertson et al. (2016) dealt with the underlining risks for individuals, often neglected by some marijuana supporters. These damaging consequences can impact motor vehicle driving, increase neurosis in the individual, lead to dependency on the drug,

and produce negative withdrawal symptoms (Cole, 2018; Davis et al., 2016a). These harmful effects can lead to missing a job or experiencing side effects while off task. Supervisors should provide employees with details and sources concerning workplace well-being and promote employee safety and well-being training to keep them safe during their time off (Hlavka, 2017).

Early research on marijuana use tended to take an uncritical view of the drug's dangers, concentrating on the social framework of academic and social justice reform (Cerdá et al., 2019). Research detailed the rise of marijuana use with users participating in a harmless workout of individuality, with some authors posting. The advocacy for marijuana usage was much ahead of science (Sabia & Nguyen, 2018; Sznitman & Zolotov, 2015). Orr et al. (2016) indicate that the earlier the age of marijuana use, the more severe and significant effects on the brain. With the increased usage, managers may need to develop better tracking and control systems. This action can include acquiring motor vehicle facts in "non-fatal" automobile accidents to better comprehend the range of injury to workers and the public (Peterson et al., 2018).

Likewise, there is a requirement to establish ideal techniques and lessons learned in Colorado from prior years and in other states on negative impacts and concerns associated with marijuana usage and the workplace (Phillips et al., 2015; Phillips et al., 2018). Similarly, supervisors must consider employees who would not have consumed marijuana items if marijuana were not legislated by the state where they live (Kosa et al., 2017; Smith et al., 2018).

Marijuana influences the individual in several ways. Insobriety is one impact; individuals answering a survey reported a rise in drugged driving (Davis et al., 2016b). Previous studies have yielded different results (Cousijn et al., 2017). Recreational marijuana (RM) has increased unfavorable usage and dependence

(Freeman & Murphy, 2016). Carliner et al. (2017) divulged that the understanding of marijuana being safe increases while the cannabis usage problem is also escalating. Nevertheless, individuals' "face" injuries have also increased (Sokoya et al., 2018).

Anderson et al. (2018) discovered that marijuana usage had improved office safety and security, while Chan et al. (2019) found that marijuana use has decreased opioid fatalities. Contrasting these findings, Rezkalla and Kloner (2019), Dougherty (2016), and Lane and Hall (2019) advised that marijuana raises heart rates as well as increases workplace mishaps, injuries, and motor vehicle deaths. There is an added threat of concealability for managers because of marijuana-infused items such as "edibles" and the products' rising potency (Maxwell & Mendelson, 2016; McGuire, 2013).

As the accessibility of marijuana comes to be an aspect, there has been a rise in using marijuana (Kulig, 2016). Examinations have demonstrated that there has been a rise in crashes and injuries at work because of problems (Nagele-Piazza, 2019; Maxwell & Mendelson, 2016; National Safety And Security Council, 2018). This availability is a risk not only to the worker but to the worker's coworkers, customers, as well as the public, as marijuana use has been revealed to reduce capabilities and the capacities of the user; consequently, prospective accidents threats increase (National Safety Council, 2019; Newmeyer et al., 2017b). In addition, the undesirable side effects for users include drug dependence, the heightened likelihood of automotive crashes, reduced respirational activity, and vascular diseases (Tormey, 2010).

Supervisors are facing many unidentified physical as well as psychological health issues of their employees because of the increasing use of marijuana, which has been revealed to "impair" the user while operating an automobile or equipment, which would undoubtedly impede job performance (Occupational Wellness & Security,

2019; Rocky Mountain High-Intensity Medication Trafficking Area, 2017).

Consequently, Okere (2018) asserted that the constant use of marijuana could bring unfavorable health and wellness results, causing adverse monetary and community outcomes. This claim was also substantiated in Rumalla et al. (2016a) and Rumalla et al. (2016b).

Occupational Health And Wellness & Security (2019) maintains that there are no amounts of marijuana (THC) substances or other made substances allowed for employees in safety-sensitive work or positions where safety is of utmost importance. Salas-Wright et al. (2017b) revealed no differences in users' "socioeconomic" levels; health and wellness elements did not play a considerable duty. Nevertheless, older working-age adults who utilize marijuana have an enhanced danger of injuries and production disturbance in the work environment (Kunz, 2018).

However, marijuana legalization has started to shift the perception of the harmfulness of marijuana in more younger working-age Americans (Evans III, 2017). This increased usage of marijuana has brought about an increased use disorder among adults and children (Evans III, 2017; Orr et al., 2016). Policymakers need to develop outreach programs to evaluate people on what they understand. They identify the influence of marijuana on public health (Ghosh et al., 2017). Ghosh et al. (2016) noted that the correct information was not being collected, and this growing problem is not being recognized because of the absence of information.

Even though there has been an advancement in social justice reform, advocates for marijuana reform feel much more needs to be done. For example, workers are not protected from their supervisors' disciplinary actions. Even as the public is changing its viewpoint regarding marijuana use (Goyette, 2014), with a firm

understanding of previous research studies, Chapter 3 will explain the techniques used in this research study and increase existing research studies.

Throughout the United States, policymakers are under pressure from the same interest groups operating simultaneously in several states to pass marijuana reform (Boylan, 2015; Pierson, 1993; Wilson et al., 2017). Several states have taken numerous paths to legislate marijuana. Some offer lawful defense for employees and companies, while some states supply none (Olafson, 2016). This escalating use of marijuana among employees can impact efficiency in the workplace and challenge employers to maintain efficiency and maintain workers' safety and security (Schroth et al., 2018). Because of this, it is crucial to discover the disputes administrators encounter as the policies are being modified (Mettler, 2019; Wichowsky & Moynihan, 2008). Managers will likely need clarity concerning a sound plan (Moynihan, 2014).

Employers are charged with preserving a risk-free work environment while ensuring employees adhere to the regulation (Calonge, 2018; Carliner et al., 2017; Cupit, 2015). Employers must be more open in discovering prospective work prospects due to the current work rate and COVID-19 procedures in the American job market. Nonetheless, Americans are significantly using marijuana (Burroughs, 2019; Denver City Chamber of Business, 2018; Sabia & Nguyen, 2018). Additionally, applicants and workers tested positive more after legalizing recreational marijuana (Burdick, 2019; Hansen et al., 2018; McCarthy, 2016; McClure, 2018).

Also, workers can incorrectly assume that because marijuana is lawful, they have a right to use it (Pirone, 2019). Some companies search for prospective job candidates through social media and discover current workers' activities (Becton et al., 2017). They also test possible candidates for drug use and current workers



(McClure, 2018). However, companies can not restrict their pool of applicants without losing employees. Marijuana users may not apply for a company position, knowing they could be drug tested (McNichols, 2019). The drug tests themselves can assist the job applicant in developing an opinion concerning the work. This testing, by itself, can lead job candidates to seek employment elsewhere. Companies remain in a challenging scenario (Murse, 2020). They must draw from a decreasing pool of drug-free candidates; this practice can result in fewer candidates. Employers are attempting to attract new hires while maintaining a healthy, secure workplace in a drug-friendly society (Smith et al., 2018).

Consequently, numerous companies are inquiring from their attorneys and personnel supervisors to identify the significance of the most recent adjustments. They seek quality drug testing in the pre-hiring stage, random testing, and medical testing after an accident to determine its fault (Carboni, 2016; DeHoff, n.d.; Filisko, 2015). Some best practices and methods should still be complied with to shield the team, the public, and companies in a civil claim (Rhoades McKee's Employment Law Team, 2018). Research shows that employers need to upgrade their policies and implement them equally. There are misunderstandings and uncertainty; nonetheless, in Colorado, it is still lawful to terminate an employee due to the use of marijuana, including medical marijuana (Filisko, 2015; Franz, 2019).

Researchers have found noninvasive tests to identify THC levels. Employers will obtain oral fluids from workers to track an employee's recent marijuana usage instead of a urine test. Once perfected, these tests will dramatically address this problem by providing evidence of intoxication arising from marijuana use (Hartman, 2015). Nonetheless, there are still technical issues to overcome before this strategy can be released entirely (Newmeyer et al., 2017a). Different screening approaches and

tests will increase as the growing use of marijuana increases public health and safety hazards, and it heightens an employee's danger of injury to themselves and others (Newmeyer et al., 2017b).

Alone, marijuana has been shown to increase automobile crashes (Arkell et al., 2019; Aydelotte et al., 2019). Marijuana is not consumed in a void; alcohol is widely accessible to employees; this combined ease of access will place them in a high susceptibility state, resulting in dependence on one or both drugs (Dubois et al., 2015). Also, binge drinking is an issue that can bring about accidental injuries and loss of life (National Institute on Alcohol Abuse and Alcohol Addiction, 2019). The use of alcohol increases the odds of fatal accidents as a motorist's perspective errors rise (Dubois et al., 2015). Alcohol, combined with the growing accessibility of marijuana among Coloradans, only exacerbates the problem (Longo, 2017). According to Aydelotte et al. (2019), Cole (2018), and Kirsch (2019), an increase in car crashes and fatalities took place after the legalization of marijuana (Lane & Hall, 2019). Drugged driving is an issue; Larkin (2015), however, merely detecting marijuana in individuals is no more the basis for arrest in a state with legalized marijuana.

According to Caulkins et al. (2015), fewer arrests have been made post-legalization. This lack of action can lead to countless individuals and future workers using marijuana (Aloi et al., 2018; Burroughs, 2019; Carliner et al., 2017; Cerdá et al., 2019). McCarthy (2016), Pratt (2016), and Pursuit Diagnostics (2019) all suggest an even more considerable percentage of Americans are utilizing marijuana now than before legalization, as revealed by the upsurge of favorable tests after mishaps and through pre-employment and random testing.

Therefore, policymakers must improve their understanding of how their policy changes the community's concerns and influences (Pierson, 1993). Reed (2018) and Wichowsky, and Moynihan (2008), purport that what must be considered is that the unfavorable influences of the legalization of marijuana much surpass any favorable benefit of the drugs. Including that legislating marijuana legitimized its use to future and current workers (McCarthy, 2016).

Most citizens understand issues from corporate media (McGinty et al., 2017). Some wire services stressed the possible harm of increasing marijuana availability to the community, while others did not (Kim, 2016; McGinty et al., 2016). This manner of reporting reduced the citizens' opportunity to be educated on both sides of the issue (McGinty et al., 2016). Some groups advocated altogether abolishing all drug testing (McGuire, 2013). Stufano (2018) and Carliner et al. (2017) reveal that this activity would undoubtedly endanger the public and the community. As a result, policymakers have a growing need for oversight as drug use increases (Connors, 2016; Gove, 2016). Some of these challenges were predicted, and others were not (Monte et al., 2015; Nkemdirim Okere (2018). This study may disclose some of the hidden complexities to policymakers.

Marijuana usage is not brand-new before legalization (Durand & Chao, 2017), yet it has risen (Martins et al., 2016). After legalization, the state and federal governments address marijuana differently; nevertheless, availability has become a public health concern (Durand & Chao, 2017; Gove, 2016). One of the goals of advocates for marijuana legalization was the reduction of racial differences in imprisonment, and the current research reveals that this goal has not been attained (Kamin, 2019). With a firm understanding of previous research, Chapter 3 will describe the methods utilized in this study and expand upon existing research.

## Chapter 3: Research Method

### **Introduction**

Through this generic qualitative study, I examined supervisors' experiences after legalizing recreational marijuana in Colorado. I focus portions of this chapter on the reasoning behind choosing a generic research design. Consequently, as part of this qualitative study, I explored the perspectives, experiences, and perceptions of those participating. I performed a primary assessment with ethical implications. The basis for this research problem is rooted in existing data. According to existing literature, a more significant part of illicit drug users are employed, with more than 10% describing the heavy use of alcohol (Becton et al., 2017; Brown et al., 2020; Choi et al., 2016). This group has a high turnover rate and absenteeism (Becton et al., 2017).

In this chapter, I will review the methodology for this research. First, I describe the research design, followed by the role of the researcher. I will introduce the methodology details, consisting of the participant selection reasoning, instrumentation, processes for recruitment, contribution, information compilation, and the information assessment strategy. Next, I present concerns of trustworthiness, as well as ethical practices. Finally, I will discuss issues and the data that I collect through each research question and survey instrument, as these provide information that will suit the research question and is practical to providing an answer. This chapter concludes with a summary.

### **Research Philosophy**

I engaged a generic qualitative research design as the primary research philosophy in the present study. The generic qualitative research design is used in emergency care, medicinal, and pharmaceutical studies (Bellamy et al., 2016; Cooper & Endacott, 2007). The generic research methodology was more appropriate to

examine the research question I analyzed obtained data from each participant's opinions, experiences, and perspectives to answer the five research questions detailed in Chapter 1.

According to Hammarberg et al. (2016), a qualitative research method is appropriate when researchers seek data concerning the participant's observations, consequences, and understandings. Qualitative and quantitative research are similar in that data are gathered and evaluated for further interpretation. Qualitative research analyses adjust to various strategies with rigorous methodological constraints. These tend to be firmly established. Nevertheless, the generic qualitative inquiry method can be used when the research is broader than these methodologies. I determined the data-gathering procedures and, consequently, a suitable model for implementing the research based on the practical needs of the research question. According to Rossman & Rallis (2016), researchers can apply this approach to tailor the methodology to the implications of the research questions guiding their studies. Likewise, according to Percy et al. (2015), this method seeks the participants' opinions and mindsets, which cannot be measured statistically in a quantitative study. Further, this research aligns well with qualitative research and the goal of expanding knowledge (Burkholder et al., 2015). Based on the data generated by the present study, I developed the academic literature on warehouse supervisors adopting policies and adapting to ongoing safety issues as workplace behaviors (may have been altered) and laws were changed.

This study aimed to explore and describe individuals' experiences (supervisors in Colorado companies) after legalizing recreational marijuana. I anchored the study around the phenomenon of recreational marijuana legalization in Colorado and its potential effect on the workplace. I applied this specific research design with the aim to collect and interpret the data provided by the research participants. I utilized the

generic technique to depart from the five qualitative approaches to inquiry.

Researchers can use the generic technique as a means of exploring data beyond these five traditional approaches in relation to qualitative data (Kahlke, 2014; Kostere & Kostere, 2021). As part of this generic qualitative design, I used semistructured interviews to obtain individual data (Kahlke, 2014).

I did not use a phenomenological design as I did not seek to identify and explain the general fundamental nature of a phenomenon. Researchers employ a generic qualitative approach to learn and comprehend a phenomenon, a method, or the perceptions and beliefs of the participants involved (Cooper & Endacott, 2007). The participants' experiences must be understood by exploring and depicting the core components of an individual experience without assumptions (Gutland, 2018). Researchers capture an individual's feelings and opinions about a specific problem through the generic approach (Jurvanen & Mik-Meyer, 2020). Moving beyond the description to focus on interpretation is critical, as meaning is included in everyday contexts (Alvis, 2018).

In this study, I used telephonic and video-conferenced interviews with participants to gather data. I used data collection and analysis to summarize the comprehensive descriptions of the participants' understandings and describe any definite emotions or situations they experienced. Because scholars focus on analyzing and exploring phenomena from an individual's perspective, such they focus their research methods on creating an accurate and objective description of the event or phenomenon. Researchers must move beyond their experiences, preconceptions, and theories when capturing accurate description of a phenomenon through participant experience. The researcher must bracket their dimensions of expertise to ensure that a participant's context is described objectively. As such, I used open-ended

semistructured interviews and participant observations as the primary methods to elicit rich data pertaining to the targeted phenomenon.

Specifically, researchers use semistructured interviews to retrieve information from the participants' points of view and describe their experiences, opinions, and perspectives. Researchers aim to document the data and the methodology of its collection during the interviews. The researcher encourages the participants to discuss their experiences in detail during the interview sessions without intruding into or interfering with the narrative (Jamshed, 2014). Researchers apply this method as a means of providing participants with the opportunity to describe the experience as free, instinctive, and open. The researcher receives an opportunity to capture introspective experiences (Jamshed, 2014). The main benefit of semistructured interviews with open-ended questions is capturing an individual's or small group's knowledge and perspectives, which could inform the understanding of a phenomenon (Jamshed, 2014). While the semistructured interview results cannot be generalized to a broader population group, it is an essential insight into the phenomenon from a perspective of a small group or (rarely) one individual.

By employing GQI, researchers interpret the phenomena from an individual or group's point of view. In this methodology, the investigated phenomenon relates to personally significant experiences, like relationships or life events. GQI is implemented by scholars using heuristics and discovery approaches to their studied topic (Bellamy et al., 2016). I used GQI and research methods including semistructured interviews and focus groups. Specifically, I used interviews with a structured or semistructured list of questions aimed at interpreting participants' experiences by targeting the research topic during the sessions. Researchers yield additional interpretations via a targeted approach to the specific topic or phenomenon

(Bellamy et al., 2016; Caelli et al., 2003). Researchers can utilize such an approach to interviews to focus more on the ability to produce insight into the topic or phenomenon by retrieving the opinions of a small group of professionals in a specific field. The primary focus is the researched topic rather than the insight of each participant (Caelli et al., 2003).

Researchers use the information retrieved from the participants to interpret the information provided during these sessions. The form of retrieving the information is different, however. Interviews are conducted one-on-one between interviewees and researchers. One of the most important rules is to ensure that interviewees do not know each other to retrieve objective information from each participant. Focus groups allow one group (or several) to discuss a topic and express their opinions while seeing each other (Nyumba et al., 2018). The primary benefit of interviews is the ability to investigate the insight of a target participant on a specific phenomenon or an event. Researchers apply the tool of interviews to analyze a topic among, for example, a group of professionals, thus generating more insights and expanding the information pool on the matter.

### **Research Design**

I examined the perceived effect these new laws have had on the participants' management style, use of power, and ability to sustain a safe workplace. All of these factors are critical to creating a workplace environment that foster safety (Sabatier & Weible, 2015). In the present study, I used a generic qualitative research design to investigate supervisors' actual experiences concerning the use of recreational marijuana in the workforce. I gained understanding supervisors' perspective on policy applications, how these regulations have modified their lives, and their interpersonal relationships with their employees (National Safety Council, 2018).



Participant observations and in-depth interviews can be face-to-face, video, or telephonic (Aguinis & Solarino, 2019). By using a qualitative research design, researchers answer the phenomenon's why and how (Ruggiano & Perry, 2017). The fundamental rationale for conducting qualitative research is to gain an abundant and comprehensive understanding of a specific subject, issue, or meaning based on first-hand knowledge. This task is accomplished by having a comparatively small but concentrated sample (Aguinis & Solarino, 2019). Assembling the information can be laborious; qualitative information is concerned with depth as an alternative to the size of the results.

Qualitative research is frequently subjective and outcomes are collected in writing. This method suggests that the information accumulated from a sample of qualitative research cannot typically be examined in a quantifiable manner using statistical methods. Nevertheless, coding can be applied if common types can be discovered during the evaluation (Richards & Hemphill, 2017). Though the questions and observations in qualitative research are not manipulated to gain a comprehensive answer, the capability to code outcomes ensues more often. This result is because the researcher directs the study in a specific direction while persuading the participant to expand and provide more detail on a particular points as they arise during a face-to-face interview or focus group (Richards & Hemphill, 2017).

By using the qualitative research design, researchers also allow for what is verbally communicated or performed and how a contributor communicates or conducts something. Occasionally these idiosyncrasies can hold answers to queries. Researchers are concerned with body language and tone of voice, which yield additional data (Aguinis & Solarino, 2019).

This study included questions concerning how legalization has affected the performance of their employees. According to Occupational Health & Safety (2019), laws impact how workers carry out their assigned job tasks within the working environment. To appreciate how these policies and procedures have played a vital part in developing workplace environments, I collected data by conducting interviews with supervisors. Finally, to understand the perceptions of these individuals, I used the qualitative method, thus allowing participants to provide their opinions, experiences, and viewpoints on the research subject.

### **Role of the Researcher**

The role of the researcher in a qualitative study is to try to assess the thoughts and feelings of participants. Researchers accomplish this through the survey instrument utilizing the research questions. In the current study, I used interviews to collect data, and my primary role was to ensure that the respondents find it easy to share their thoughts, experiences, feelings, and assumptions regarding their role in supervising employees in the context of recreational marijuana legalization. This procedure was a challenging task to accomplish, as it required asking respondents to talk about a topic that was considered sensitive. It is critical to mention that the legalization of recreational marijuana occurred in Colorado in 2012, 10 years before I completed this study. In this study, explored experiences that could be difficult for some to remember.

When data is collected, the researcher's primary responsibility is to secure the information and identities of the respondents (Sutton & Austin, 2015). The researcher is responsible for accurate, respectful, and effective data safeguarding, analysis, and interpretation (Sutton & Austin, 2015). The researcher must ensure that the study reflects the findings from the data collected during the interviews and secondary

research rather than a personal point of view or ideas (Sutton & Austin, 2015). Thus, the researcher must ensure that personal bias is prevented and eliminated. Therefore, I aimed to elicit interviewees' recollections of past experiences to ensure he was unbiased (Sutton & Austin, 2015). I held all implied understanding of the topic to safeguard the research from bias. Therefore, I avoided ethical disputes such as the researcher's situation, inequality or preferential treatment that could, otherwise, threaten this study as the researcher used appropriate methodology.

I developed research questions as well as the objectives of this analysis. I performed a literature review to obtain information and a better sense of the subject matter necessary to assess and author this report's topics, types, and theories. The researcher's prior understanding and the contributors' experiences assisted the assessment and clarified the phenomenon's significance while compiling this study. According to McCaslin and Scott (2015), the "qualitative researcher is the primary instrument for data collection and analysis" (para. 3). The primary responsibilities of a researcher are to adhere to all rules and requirements for conducting a scholarly study, comply with the ethical code of conduct, and collect and analyze the data according to the chosen methodology.

### **Sample and Sampling Process**

As part of this generic qualitative design study, I used purposeful sampling to identify prospective participants based on the individual's understanding of their experiences, position, and availability (Babbie, 2020). In this section, I will describe the population and the sampling method for this research study. As such, I discuss the specifications of the study population, sampling method, sampling approach and attenuation strategy in this portion.

Supervisors are recognized as line and office administrators (Aguinis & Solarino, 2019). They oversee employees on construction, industrial, office, and factory floors. Supervisors are the first line of management to advance the procedure and formation of compiling, customer services, and assessments for unskilled workers, skilled laborers, and machinists. Through this analysis, I disclosed measures necessary to develop and enact the maintenance and improvement of a safe workplace post the legalization of marijuana in Colorado.

I used purposive sampling to recruit the participants. This method allowed the researcher the ability to achieve a practicable quantity of information. This nonprobability sampling technique allows the selection of participants (Austin & Sutton, 2014). I defined specific criteria to determine participants' involvement in this study. The participants in the sample must be familiar with the phenomenon that embodies the case (Ames et al., 2019; Moser & Korstjens, 2017; Yin, 2018). I aimed to select contributors who can enrich the phenomenon and answer the research questions to participate in this research. According to Aguinis & Solarino (2019), the selection of applicable participants facilitates the exploration of the targeted phenomenon (Aguinis & Solarino, 2019). I developed and applied this sampling technique for qualitative evidence. According to Yin (2018), this ensures that only a pertinent sample is attained (Yin, 2018). The essential element of a qualitative sampling plan is that participants are sampled purposefully. Each sample size varies for each analysis. The sample occurs during the study and is established with additional inquiries as information is gathered and evaluated. During this process, elimination measures might be modified, or the sampling locations could be altered (Bellamy et al., 2016).

The actual number of participants was 12. I recruited the participants from warehouse/distribution center supervisors operating in different companies and industries to ensure the relevant representation of the sample. According to Patton (2002), discovering and selecting information-rich participants help develop limited resources. Criteria for inclusion were the following: occupying a warehouse/distribution center supervisory role after recreational marijuana was legalized in the last five years, operating in one of the companies in Colorado, having at least three employees to supervise, and willingness to participate in interviews. It is also critical to mention that businesses operating in Colorado still prohibit marijuana at work, and employees could be terminated for its use if detected. Thus, supervisors' experiences were essential in observing employees using recreational marijuana and its impact on workers' performance. I recruited interviewees from several private companies in Colorado. The preference was provided to large and medium companies to ensure supervisors had enough employees to observe.

I conducted the research through semistructured interviews, and selected the participants via LinkedIn and Facebook. The recruitment of participants was not impeded by the schedule of most interviewees, the high workload, or their inability to participate. Those who complied with the inclusion criteria and agreed to participate were contacted by email, phone or both to schedule the interviews. Before the interviews, the participants received brief information about the study, the consent form, and the list of rules and rights of participation. These interviews were telephonically and online using Zoom to collect data based on participants' preferences. All interviews were recorded for further transcription. The permission to record was obtained from the participants as well. I collected basic biographic information for the study's purposes (age, years of experience and gender). This

research method allowed the investigator to continue sampling participants until saturation (Caelli et al., 2003; Saunders et al., 2017).

Snowball sampling was utilized as another sampling strategy to recruit participants for this study. Snowball sampling occurred when contributors recruited for the research suggested other potential participants who fall within the conditions of the limitations to the investigator as potential participants (Leighton et al., 2021). I carried out snowball sampling during participant enrollment. After a contributor was recruited via Facebook or LinkedIn, they notified the researcher. I then questioned whether the contributor knew others who met the conditions and were interested in participating in the study. If they said yes, I invited that contributor to pass on the recruitment information to other potential participants via Facebook and LinkedIn.

Finally, maximum variation sampling will further strengthen the research by seeking samples from several companies to enhance the study's credibility (Suri, 2011). Before the inclusion of the participants, the respondents received an emailed statement that ensured anonymity and voluntary status of the participants, together with the IRB ethical approval acknowledging it. This procedure was enough to recruit the respondents to the study. No candidates refused to participate in the study for any reason.

### **Sample Size**

A qualitative researcher seeks to identify a particular phenomenon instead of gaining more information from a larger population. The sample size is essential to safeguarding a reliable content analysis, and there is no commonly accepted unit size or standard for qualitative research (Krippendorff, 2018; Vasileiou et al., 2018). A qualitative researcher can obtain the necessary data without a representative picture of the population under review. The sample size is driven by the "information power"

(Malterud et al., 2016) available in the target population. Information power implies that the more data the unit contains, the more relevant it is for the research and the fewer participants required. The dialogue and analysis strategy quality are crucial in this step. Applying this method to a qualitative study's planning and data collection is paramount (Guest et al., 2020).

The number of contributors is dependent on the purpose of the study. In qualitative research, the goal of sample size is appropriate and somewhat reliant upon the scientific concept under which research is conducted (Mocanasu, 2020). Therefore, qualitative researchers' assessment of data suitability for a specific method should not solely depend on data saturation alone. Alternatively, the researcher should also be directed by their study objectives, sampling method, and study participants (Sarfo et al., 2021). The participant sample size can be reduced using purposeful sampling and semistructured interviews (Palinkas et al., 2013). Data saturation is achieved in interviews when the researcher does not receive any new data and further data collected is redundant. The researcher should then suspend gathering additional data and analyze what has been compiled (Malterud et al., 2016; Saunders et al., 2017).

Utilizing ten participants in this study as the minimum number sets the underlining policy for the study. This allowed for further transparency on what is anticipated of the sample size conditions for this study as the researcher draws on in-depth interviews to reach saturation. The contributors were or had been employed by a warehouse/distribution center as a supervisor operating in various businesses and productions to safeguard the proper interpretation of the sample. According to Patton (2002), finding and opting for data-rich contributors assist and expands limited assets. Criteria for inclusion were the following: occupying a warehouse/distribution center

supervisory role after recreational marijuana was legalized in the last five years, operating in one of the companies in Colorado, having at least three employees to supervise, and willingness to participate in interviews. It is also essential to declare that employees performing work with companies operating in Colorado are prohibited from marijuana use at work and could be dismissed for its use if discovered (Albino, 2017).

The research aimed to recruit interviewees from various businesses in Colorado. The preference was to provide to large and medium companies to ensure supervisors have enough employees to observe. Thus, supervisors' encounters are indispensable, and their opinion(s) of employees' use or nonuse of recreational marijuana and its possible effect on workers' performance was paramount for this study. For this analysis, the criteria for exclusion from the study applied to individuals not directly supervising the workforce, including human resources and administrative staff. Those who complied with the inclusion criteria and agreed to participate were contacted by email or phone to schedule the interviews. Before the interviews, the participants received brief information about the study, the consent form, and the list of rules and rights of participation. This research method allowed the investigator to continue sampling participants until saturation (Caelli et al., 2003; Saunders et al., 2017).

### **Participants Selection Reasoning**

This research aimed to study how warehouse/distribution center supervisors identified and engaged in work-related issues concerning recreational marijuana. This research's target population was existing and previous supervisors employed in warehouses/distribution centers in Colorado. This nonprobability sampling method allows a researcher to choose a sample of subjects (units) from a population (Alase,



2017; Andrade, 2020). Obtaining a uniform sample of participants may provide a more comprehensive knowledge of the participant's statements. This coherent sample would be one in which the study participants would have similar expertise and backgrounds (Alase, 2017; Etikan, 2017). The principal attribute of this research's target population was their position as warehouse/distribution center supervisors.

Qualitative researchers use purposive sampling to make a knowledgeable selection of particular units that increase the possibility of studying the phenomenon being investigated and gaining the most understanding of the phenomenon being researched (Etikan, 2016; Liu, 2016). I used purposive sampling to enlist participants for this research. A recruitment notice explaining the study was published on social media platforms (Facebook and LinkedIn). The participant's experience is the essence that must be understood by exploring and depicting the core components of an individual experience without assumptions (Gutland, 2018). Moving beyond the description to focus on interpretation is critical, as meaning is included in everyday contexts (Alvis, 2018). Qualified contributors communicated their encounters through telephonic and video-conferenced interviews. Data collection and analysis helped summarize the comprehensive descriptions of the participants' understandings and describe any definite emotions or situations they experienced. The primary benefit of interviews is the ability to investigate the insight of a target participant on a specific phenomenon or an event. Interviews allow for analyzing a topic among, for example, a group of professionals and the interviewer could generate more insights and expand the information pool on the matter.

### **Recruitment Procedures**

I encouraged supervisors working in warehouses/distribution centers in Colorado to contribute to research on the effects of recreational marijuana in the

workforce. Data collection followed Walden University's Institutional Review Board (IRB) approval. An enrollment notice was published on social media sites (Facebook, LinkedIn). The advertisement, which described the purpose of the study, criteria for contribution (current supervisors, excluding human resource and administrative personnel), and my contact information was posted at these sites at the beginning of the week to develop and encourage contributors to apply. I offered A gift card for \$25.

Interested contributors were able to contact me either by phone or email. Those who reached me by email received a reply email requesting suitable times and methods for the interview (Zoom or telephone). I asked those who contacted me by phone for the most preferred method of contact, available interview times, and an email address to send them an informed consent form. The consent form was emailed to the interested contributors. If requested, interested participants could opt for the consent form to be mailed.

This research involves purposive and snowball sampling. Snowball or chain referral sampling starts with a convenience sample and uses the original subject to recruit others (Amankwaa, 2016; Naderifar et al., 2017). This sampling method can produce a biased sample (Palinkas et al., 2015; Parker et al., 2020). Individuals with familiar experiences and interests tend to refer respondents like the initial responder (Naderifar et al., 2017; Palinkas et al., 2013). Hard-to-reach populations can be reached by using this method. Purposeful sampling can increase bias and limit trustworthiness; however, by providing complete details of the sample, this flaw can be mitigated (Malterud et al., 2016; Mocanasu, 2020; Naderifar et al., 2017)

### **Inclusion and Exclusion Measures**

Inclusion standards help define the crucial characteristics of the target population that a researcher uses to address their research question. Standard inclusion criteria include a particular population sector and scientific and environmental qualities. However, exclusion measures are identified as characteristics of the prospective study participants. They meet the inclusion standards but present with further attributes that could affect the realization of the research or increase the probability of an adverse result. Standard exclusion criteria include characteristics of suitable participants. However, they are unable to meet scheduled appointments to gather information, are more likely to skip the supplemental appointments, and would offer inaccurate information in the study (Patino & Ferreira, 2018, UC Regents, 2022). This research's subjects were supervisors currently employed at warehouses/distribution centers in Colorado. Excluded were current resource managers and administrative supervisors.

### **Participation Procedures**

I arranged a time to connect with each participant through their selected contact method to accommodate their availability and ease. Ten participants chose Zoom, while two chose a telephonic interview. Before each interview, I examined the equipment to confirm that it was operational and that I could record the interview. Participants did not encounter internet connectivity issues and opted to turn their cameras off.

I started each interview by stating the purpose of the research, the information collection methods, and possible risks. As mentioned in the interview, I commenced each interview by requesting participants view their research inclusion standards questions. I discussed the participant's capacity to terminate and withdraw from the

interview. I addressed the consent form and inquired if the participant had further questions. I informed each contributor that the discussion was audio/video recorded and requested their verbal consent to audio/video record each interview. I also advised each participant that I would use written notes in addition to an audio/visual recorder and would retain each recorded interview in a secure digital database. Eligibility for the research, each contributor was required to work in a warehouse/distribution center in Colorado as a supervisor or be a former supervisor (separated/retired) within the last five years.

Current or former supervisors who held only human resource or administrative, supervisory positions were excluded from the study. When participants met the inclusion criteria, I continued with the interview procedure. I resumed my interviews with background questions, as Roberts (2020) suggested, to develop rapport with the contributor. I followed up with open-ended, semistructured interview questions to gather research information.

### **Debriefing**

Following each interview, I engaged in debriefing with the contributors. McMahon and Winch (2018) indicate the importance of researchers debriefing the research participants. During the debriefing, I thanked the participants for participating in the study and sent a copy of the interview transcript to facilitate member checking. Each contributor was informed that professional counseling was offered if detrimental thoughts or emotions arose from the conversation. Contributors were also informed of a possible follow-up interview if one is required to clarify the information given. They were also allowed to decline their participation in any further participation or to receive the final study results. Lastly, I provided all contributors

with a \$25 gift card after completing their interview. I emailed the participants a gift card to an address of their choosing.

### **Instrumentation**

I developed the interview questionnaire (Appendix A). The survey instrument was designed to elicit information to answer each research question. The questions were straightforward and concise. As part of the interview, I included a sample of open-ended questions in a semistructured interview design to understand the topic in-depth. I employed a generic qualitative approach to thoroughly investigate supervisors' experiences after legalizing recreational marijuana in Colorado. According to Morgan et al. (2016), this method is useful in collecting a diverse set of data. This investigation of employees' recreational marijuana use is within its real-world environment and the worksite (Aguinis & Solarino, 2019; Ames et al., 2019).

I asked the participants demographic questions verbally, and I marked and noted their responses. Capital letters were used to disguise the participant's identity. Written consent forms match the demographic worksheet and identify each contributor confidentially (Appendix B). The interview covers the following five points: (1) rudimentary demographic data, (2) employees' usage of recreational marijuana and method of use, (3) supervisors' awareness of usage, and (4) perceptions of workplace safety prior to and after the legalization of recreational marijuana, (5) prior experience of workplace mishaps and accident before the legalization of recreational marijuana, (6) workforce productivity and presence of counterproductive behavior before and after legalization.

I expected the interviews to last 45 minutes to 1 hour to ensure the participants' comfort. Since the study used a semistructured interview protocol, the questionnaire includes 14 main questions. Semistructured interviews provide more

freedom in terms of the process by allowing one to ask a list of prepared questions and some additional ones when an interviewee raises a critically important topic. Since the actual experiences might dramatically vary across the sample, the semistructured protocol is more acceptable in such circumstances. This method enables the researcher to examine the phenomenon systematically.

Also, member checking is used, as participants provide feedback to validate the information (Merriam, 1998). This approach improves the research's precision, integrity, validity, and transferability. Triangulation offers additional confidence and reliability in the study by comparing the data of one perspective participant with the variety of opinions and views of others. Finally, observations during interviews, reflective field notes, and member checking will strengthen the research findings (Creswell, 2009, Wolcott, 2005).

### **Data Collection**

As part of this study, I aimed to understand supervisors' experiences after legalizing recreational marijuana in Colorado. I collected the data through interviews with supervisors operating in Colorado companies. As part of this study, I used a semistructured interview protocol. A semistructured protocol of interviews is used as the primary data collection method, which allows the researcher to ask all participants a list of standard questions developed before recruitment and add specifying questions during the interviews if a respondent raises a prominent issue. Using a semistructured interview protocol, I engaged with respondents in a formal interview with a list of questions and topics addressed during the session. I used the list of questions to create a guide but strayed from the focus when appropriate (Lauterbach, 2018). The questionnaire used for the interviews is provided in Appendix A.

Most interviewees used the telephone for the interviews. I discussed the choice of venue with each participant before the sessions to ensure all participants were comfortable with how an interview was conducted. I chose remote interviewing for the convenience of the participants and the researcher, and the researcher did not have the means to conduct face-to-face interviews. Face-to-face interviews were difficult considering the current circumstances (the COVID-19 pandemic), requiring the minimization of social contact. While conducting interviews, it was imperative to capture the participants' reactions to the questions, to react appropriately to the respondents, and ensure a more convenient interview environment. I recorded all interviews after obtaining consent from each interviewee.

The following steps of data collection were implemented:

1. I arranged an interview with each participant (separately) by determining the day and time of the session and the virtual platform where it took place.

2. I conducted interviews using the questionnaire developed before the first session (Appendix A), scheduled for 45 minutes to 1 hour.

3. I recorded each session on the chosen platforms during each session.

4. After recording each interview, I listed and coded each session for convenience and order (e.g., "Participant A, 12 January 2023").

5. Sessions were conducted, and I transcribed each interview. The questionnaire addressed the supervisors' experiences after the recreational marijuana legalization regarding its impact on productivity, worksite safety, adjusting to legal ramifications, and employment policies. Researchers should maintain an open perspective, set aside his presumptions, and use insight to understand the phenomenon by focusing their knowledge on the subject (Ruggiano & Perry, 2017). Through these

steps, the phenomenon and meanings of the research questions were collected and analyzed at once (Moustakas, 1994).

### **Data Analysis**

The first stage of data coding can begin before a researcher amasses any data. This can be accomplished from the literature review. I started this process using a deductive coding approach. This approach used a top-down method where I developed my primary collection of codes to establish a codebook. This set was built from my research questions. I read the information and designated quotes to codes. At the end of this assessment, the codes resembled the codebook. This method is excellent when you have established the structure for how you need your conclusions (Pearse, 2019).

Chandra and Shang (2019) advise on how inductive and deductive coding ideas vary. Inductive coding is a ground-up method where you derive your codes from the data. Researchers do not start with predetermined code concepts but permit the interview data to develop from unprocessed information. This approach fits the exploratory nature of generic research and allows for designing new theories, suggestions, or constructs (Caelli et al., 2003; Saldana, 2021).

It is crucial to verify the data's reliability, quality and credulity. Fenton and Mazulewicz (2008) purport that the quality and trustworthiness of qualitative research, which incorporates data collection and assessment, coding information, and classifying repetitive themes, produce meaning and confirm accuracy. Measures to ensure the trustworthiness of qualitative data are developed through steps taken in contributor measures, impartial questions, various data sets, methodical procedures, information evaluation, and peer evaluation (Patton, 2015).



Miles and Hurerman (1994) purport that triangulation helps ensure supporting data from various sources. Ensuring the reliability and validity of the investigated data and sustaining validity and consistency in this generic qualitative study necessitates triangulation. I themed and reviewed the data for accuracy. Authenticating the themes obtained from the data helped validate the findings. Gerring (2007) asserts that the researcher must inform the reader of any negative analysis, providing an accurate appraisal of the phenomena. Therefore, this research includes inductive and deductive coding and reports positive and negative findings.

Researchers using qualitative methods and procedures must ensure credibility and internal validity by providing accurate data, collecting the correct data, and ensuring that unwarranted data appears in the findings and that the proper validity is included. Further, to ensure trustworthiness in qualitative research, a researcher should follow these basic methods, focusing on internal and external validity, reliability, and conformability (Kornbluh, 2015). I accomplished this process by exploring several data sources and incorporating different perceptions.

Researchers repeatedly refer to external validity as a model but infrequently try to make specific, reliable external validity conclusions (Findley et al., 2021). External validity is driven by information and findings encapsulating one study's transferability to another. This transferability drawn from this research example must be relevant to a broader population (Creswell, 2013, Patton, 2015). Therefore, I sought to establish the external validity of the perspective regarding the need for an increased understanding of the possible difficulties and possibility of developing a system to transform a business from a state that prohibits marijuana to a marijuana-friendly state.

The questions were open-ended and “ontological” to capture the participants’ realities (Saldana, 2021). The researcher thoroughly describes the analysis activities and provides ascribable evidence for the analytical study (Patton, 2015). Since the study uses generic (also titled basic or interpretive) qualitative research as its philosophical research starting point, clarifying the data is used (Merriam & Tisdell, 2015).

Triangulating information offers substantiating evidence for the efficiency of the study (Creswell, 2013). Using diverse sources in this qualitative study helped confirm the distinct themes and perceptions. To address the study’s reliability, I included an explanatory, comprehensive proposal concerning the research design and data collection methods for the prospect of future analysis reproduction and an appraisal and assessment of the effectiveness of the research. Following the interview’s finalization, I transcribed the replies from each participant for subsequent data analysis. I then analyzed the information using the inductive coding data analysis strategy. This step guides researchers through an analysis of qualitative data that is not easily evaluated as a whole (Andrew et al., 2017).

This process involved the following steps:

Bracketing. I repeatedly listened to the interview recording to become familiar with the information and develop a holistic perception of the information provided by the participants. The primary goal of this step is to give the explored phenomena existential immediacy by forming a personal (from the point of view of a researcher) perspective on the collected data (Caelli et al., 2003).

1. Delineating units of meaning. This stage involved extracting and isolating the participants’ statements that most inform the researched phenomenon. I aimed to ensure that personal presuppositions and assumptions were

bracketed to eliminate subjectivity. I retrieved comments relevant to the explored phenomenon, and eliminated redundant ones. Moustakas (1994) identified this step as being integral to data that has a high degree of quality.

2. Clustering meaningful statements to form themes. This step required the researcher to group meaningful ideas by developing themes. Naming each theme involved capturing the essence of these clusters. It was also critical to retain the same objective perspective on retrieved data and avoid subjective judgment.
3. Summarize each interview and validate it. This step aimed to group all statements and incorporate them into a meaningful and systemized summary to capture the overall trend of the interviews. This step also involved connecting the outline to the primary aim of the research and answering research questions. I conducted a validity check by returning to the participants to detect if the primary meaning of the interview was captured correctly.
4. Extracting themes and developing a composite summary. I generated common themes for all interviewees and unique themes for individual respondents to create an outline that captured the entire data pool.

I sought to assemble and support his evaluation from the problem statement and the research question's purpose statement. As I collected and compiled the information for my study, I preserved the theoretical framework and ensured it was aligned throughout the work. Keeping my research grounded in the literature and established practices ensured the trustworthiness of this document (Aguinis & Solarino, 2019; Ruggiano & Perry, 2017).

**Reliability**

Reliability stands for dependability (quantitative) in qualitative research. Reliability in qualitative research refers to the strength of responses to multiple coders of data sets. Detailed field notes can be augmented by recording methods and transcribing audio files. Validity in qualitative research is distinct from a quantitative study (Roberts & Priest, 2006). Of the two terms, reliability is easier to identify and explain. Reliability elucidates how far a specific analysis, method, or instrument, such as a survey, will generate comparable outcomes in distinct situations, supposing nothing is altered. Validity is an elusive idea. It is about understanding what we assume we are evaluating to what we propose to assess (Roberts & Priest, 2006; Nha, 2021). Trustworthiness is attained in qualitative research by confirmability, integrity, validity, assignability, and dependability. Implementing these terms in qualitative research requires an extended commitment to the subject matter and the orientation of information from informants, techniques, and researchers to determine reliability (Golafshani, 2015; Gunawan, 2015). A comprehensive narrative is necessary to validate the transferability of the findings among researchers and those being analyzed. In qualitative research, investigators seek trustworthiness that the results will be either an event or condition expected or the likelihood to be impacted or not staying the same. This method shows unpredictability instead of looking for consistency (Hayashi et al., 2019; Leung, 2015).

**Confirmability**

Confirmability is the effectiveness of the collected information and the potential to collaborate and validate the study's outcomes. It is also the extent to which the study outcomes can be validated by other researchers (Chang, 2014; Gunawan, 2015). The researcher must consider their opinions on the phenomenon

before the initial stages of their study because it may be evident in the development and review procedure. A research journal was kept chronicling my point of view to maintain independence from the contributors (Golafshani, 2015). I also took thorough notes to describe personal viewpoints or preferences throughout the interviews. I also confirmed that my study conclusions will be centered on the information gathered throughout the interviews (Hayre, 2021; Korstjens & Moser, 2017). Also, I notified all participants about the study verbally and in writing before contributing their experiences.

Several concerns can influence the overall population (universe) and sample size in qualitative research; life history is one concept; however, the controlling principle ought to be the concept of saturation (Chang, 2014; Gunawan, 2015). Purposive sampling approaches were evaluated and selected as the preferred strategy for this study. This method fits the theoretical and practical purposes of the study's aims. When the sample size is categorized and an approximate sample number is selected, the investigator chooses cases for incorporation into the sample (Korstjens & Moser, 2017). The sample size (supervisors working in Colorado after the legalization of recreational marijuana) was a sufficient boundary that validates the sampling process. It similarly offers a vital theoretical role in the review and evaluation method by classifying the sample makeup and illustrating who or what the study involves.

### **Pilot Testing**

I conducted a pilot test of the questionnaire on various colleagues; my Committee Chair and Second Chair also reviewed it. While developing the questionnaire, I pilot tested the draft version on colleagues. This step in the development will reveal if there was any misunderstanding regarding any specifics and whether reviewers had recommendations for potential amendments to the terms. I

amended some questionnaire details upon receiving feedback from the review panel. I repeated this process several times before concluding the final version of the questionnaire (Hayashi et al., 2019; Ricci et al., 2018). During the testing, I asked the respondents verbally open-ended questions. I asked the respondents to explain what they believed each questionnaire question and their subsequent answers meant. Through this method, I confirmed that the questionnaire question preserved the research question's significance and established no misunderstanding concerning the questionnaire. I repeated this procedure several times to complete the questionnaire (Hayashi et al., 2019). The questionnaire was linked to the theoretical construct I intended to evaluate. I carried out this step to make it more evident to assessors and commentators.

### **Expert Committee**

I instituted an expert committee to create the draft edition of this research proposal. Members of the committee included experts familiar with the study, including my committee chair and second chair (methodologist), who understood the study concept and its relevance. The expert committee reviewed several versions of the draft and verified whether the ideas held the underlining research theory in the original versions. They identified discrepancies that were fixed. Finally, the committee members agreed on all questionnaire changes on the final draft version, moving it along (Hayashi et al., 2019).

### **Content Validity**

To create valid outcomes, the subject of a test, analysis or testing technique should deal with all appropriate components of the issue it intends to assess. Content validity assesses whether details are thorough and sufficient to reveal the population's point of view under study (Brod et al., 2014; Hayashi et al., 2019). Content validity

also evaluates whether a test is descriptive of all concept characteristics. The validity is vulnerable if certain facets are absent from the features or if inappropriate factors are contained.

Content validity has frequently been deemed a precondition to “criterion validity” (McKim, 2022) because it is an excellent gauge of whether the preferred feature is evaluated. Content validity is qualitative and examines whether a particular aspect improves or diminishes from a study plan. If elements of the analysis are unconnected to the main idea, the researcher will evaluate inappropriately, thereby generating possible bias (McKim, 2022).

### ***Determining Content Validity***

Content and face validity (face value) are associated but vary in how they are assessed. Content validity seeks the same reactions but employs a numerical method, certifying that it is a robust form of reality (Chetwynd, 2022; Gunawan, 2015). Face validity involves the extent to which a technique effectively reaches its goals. It involves individual reasoning. For example, researchers questioned whether contributors believed an exam was structured appropriately and practically. Each questionnaire question was given to the panel of experts to analyze and assess them. They communicated their view concerning whether the question was crucial, practical or inappropriate for evaluating the concept under analysis. Their responses helped revise the questionnaire to improve the validity of the content (rational).

### ***Low Content Validity***

This questionnaire's content validity fully represents the construct of ‘being a warehouse/distribution center supervisor.’ I appropriately designed the questionnaire to find a suitable participant. A good sample group was vital. The contributors represented the population from which they were drawn. This step involved ethical

recruiting. Information collected from participants not genuinely characteristic of the target population would have led to invalid results and low content validity(Hayashi et al., 2019; Karhulahti et al., 2021). As my first step to safeguarding validity, I choose a qualified and competent administrator and facilitator as committee chair. The chair must examine their personal biases and expectations as a helpful facilitator.

Another step to establish validity in this qualitative research was to utilize respondent validation(participant validation or member checking). Respondent validation is frequently cited as a validation technique. Participant validation is a method for investigating the reliability of a study's findings. This procedure involved examining preliminary results with contributors to see if they stand true under scrutiny. The gathered information was returned to contributors to assess its precision and tone with their experiences. After I translated and consolidated the research, contributors could identify the results as realistic. The participants also helped refine the researcher's understanding.

### ***Ethical Considerations***

The study involved human subjects, which required specific compliance with the ethical code of conduct. The research for this study began when authorization was obtained from the Walden Institutional Review Board (IRB). The IRB's applicable processes for analyzing human subjects were followed during the research. A copy of the permission to research human subjects from the IRB is included as an appendix. All prospective contributors obtained an informed consent form that offered particulars regarding the research, such as the private and voluntary disposition of the study. I notified participants that there would be no adverse consequences to declining to partake or withdrawing from the study. Contributors were able to remove themselves from the research by informing the researcher.



Participation in the study was voluntary and anonymous. Before scheduling interviews, all participants were sent a consent form. All respondents received brief information about the topic, the goals of the study, and issues explored by the researcher. I provided rules of participation and rights of participants in electronic format to all interviewees. Despite this, participants were able to leave the research whenever they wanted. I related all information used in the study to the topic. When I transcribed the information, raw data was eliminated to preserve the participants' identities.

No information will be able to identify the participants or the names of the companies to preserve anonymity and prevent bias. I substituted the names of participants with numbers, and their pseudonyms only describe the participants. I referenced all secondary data accordingly by preserving the respectful approach to the data provided by previous researchers. I securely collected and stored digitally until transcription all physical records and digital data. I deposited all digital data on a locked computer with a password and login only known to the researcher.

### **Summary and Reflections**

An appraisal of supervisors' subjective experiences in the workroom was pertinent due to the new shift at the state level regarding recreational marijuana. Studies have indicated that rules and regulations are in flux. These groundbreaking laws necessitate new practices and guidelines that affect public and private workplaces. As part of this study, I investigated the actual experiences of supervisors in contemporary public and private organizations concerning the legalization of recreational marijuana in Colorado. I used qualitative methodology following the generic approach. I obtained information for this research from semistructured interviews involving supervisors from Colorado who have supervised employees in

the last five years. Elicitation of the data is used as the primary process of data analysis. Therefore, the survey instrument provides information to answer the research question. In chapter 4, the researcher will review the information collection and evaluation, consistency, and the research findings.

## Chapter 4: Results

### **Introduction**

In this chapter, I provide results from data collected, recorded, transcribed and analyzed relating to the study of previously documented research questions. Through this generic qualitative study, I aimed to identify potential recreational marijuana policy conflicts encountered by supervisors and their personnel about the employment policy status of recreational marijuana users and workplace safety. I used the research questions to address the supervisors working in warehouse/distribution centers in Colorado's level of understanding of their company's and local government policies related to recreational marijuana. I explored responses associated with applying administrative policies and potential social problems from conflicting policy guidance. I developed data collection from telephone and Zoom interviews with Colorado warehouse/distribution center participants.

### **Participant Information**

The supervisors provided various valuable insights regarding recreational marijuana use in the workplace. All participants felt that recreational marijuana users should be held to the equivalent standards of other employees. They agreed that clear policies should be implemented to ensure consistency across the board. They also noted that supervisors must be willing to provide appropriate guidance and support when necessary to ensure the safety of all employees. The supervisors shared that they have seen a greater willingness to accommodate recreational marijuana users in recent years and have encountered fewer issues than in the past. Despite this, they still stressed the importance of having clear policies and guidelines to ensure a safe work environment. Additionally, it was noted that there must be consistent and fair enforcement of all policies, regardless of whether an employee uses recreational

marijuana. Overall, the supervisors offered valuable perspectives that should be considered when making decisions about recreational marijuana use in the workplace.

I carried data collection ethically, ensuring the protection and anonymity of all participants. Using protocols to substitute the names of each participant with a code (PA through PL) assured their confidentiality. Moreover, direct quotes from said interviewees reduced data contamination further and enhance support for the thematic conclusions. Through the use of such a method, researchers consider the participants' safety and rights (Boletto, 2018).

I took great care to ensure that the data collection methods follow ethical guidelines. The results of this study are thus reliable and valid. Through these results, I gained a greater understanding of the topic. The results of this study suggest that recreational marijuana poses unique challenges for supervisors working in warehouse/distribution centers in Colorado. While many respondents reported a general understanding of the company and local government policies on recreational marijuana, there was less clarity regarding how those policies could be applied. Consistency in policy guidance at the state and company levels further complicated the picture, leading some supervisors to express concerns about potential social problems associated with conflicting policy guidance. I discuss the results of these findings below, along with recommendations for effective management strategies within warehouse/distribution centers.

Overall, recreational marijuana has created an uncertain environment for employers, who must balance their obligations under company policies and state laws while guarding against potential risks to their organization. Based on the results of this study, I determined that supervisors in warehouse/distribution centers in Colorado may need to prepare to meet these challenges. More work is required to ensure that

they are adequately educated about recreational marijuana policies and the implications for their workplace. Furthermore, organizations should consider the need for clear administrative procedures governing recreational marijuana usage and enforcement and training programs designed to help supervisors recognize and address any potential social issues related to recreational marijuana use. Employers can foster a safe work environment with the right approach while complying with applicable laws.

As part of the present study, I aimed to investigate the perception of workplace safety from the point of view of supervisors concerning recreational marijuana users in warehouse/distribution centers in Colorado. The primary purpose of the research was to compare the productivity levels between recreational marijuana users and non-users to assess if recreational marijuana usage has any effect on workplace performance. Over 2 weeks, I collected data from the warehouse/distribution center's employees via telephonic and Zoom semistructured interviews. The study findings showed that participants perceived, for the most part, that recreational marijuana users had higher productivity levels than their counterparts who did not use recreational marijuana. Additionally, I observed that supervisors managing recreational marijuana users were significantly more likely to report that their employees had higher rates of concentration, focus, motivation and overall job satisfaction when compared to their non-using peers. This view was contrasted as participants noted recreational marijuana users were sluggish and showed signs of hallucinating.

Cupit (2015), as part of a Delphi study, investigated how workplace policies changed following the legalization of marijuana in Colorado. As part of this study, I interviewed 14 public and private sector participants to understand their perceptions of the issue. The findings revealed that although some employers adopted a hands-off

approach to marijuana consumption and marijuana-related activities, many have implemented stricter policies on marijuana use in their workplaces. Furthermore, the study revealed that marijuana consumers face many legal obstacles due to its status as a recreational drug. These findings suggest that despite marijuana being legalized for recreational use in Colorado, workplace policies regarding marijuana remain essentially unchanged.

This research provides insight into how supervisors perceive the implications of recreational marijuana use and how policies are being implemented in the workplace. I conducted the interviews and data collection to explore supervisors' perspectives with direct knowledge of employees using recreational marijuana and their understanding of workplace recreational marijuana policies. I administered the interviews in a semistructured format to ensure consistent responses from participants. The interviews showed that while there is overall acceptance of recreational marijuana use in the workplace, there are still some reservations regarding safety and liability issues. Furthermore, the interviews highlighted that supervisors have a heightened awareness of potential risks associated with recreational marijuana use and its implications for employee productivity. Through the use of the interviews, I also uncovered nuances in policy implementation, such as differences between the legal age of 21 and those recreational marijuana users who are not yet 21.

I conducted the interviews and data collection for this study through an open-ended survey administered to various respondents from diverse backgrounds. The data collected included opinions, attitudes and experiences related to recreational marijuana policy creation and implementation in the workplace. Through the collected data, I obtained a comprehensive overview of the status of recreational marijuana regulations in the workplace, through which I gained insights into how

workplaces respond to the changing legal landscape surrounding marijuana legalization. Furthermore, as part of this study, I also evaluated how distinct types of employers view and respond to recreational marijuana policies. This study can inform future policy development and implementation efforts by providing critical stakeholders with better information on the potential risks and benefits of introducing these policies in their organizations.

I recruited a total of 12 participants over 2 weeks. I conducted most of the interviews via telephone, and interviewed two participants via Zoom. All participants supplied informed consent before participating in the study, and I recorded each interview for transcription. The Walden University IRB approved (number 01-10-23-0654897), permitting me to initiate research. The committee chair, second committee member, and university research reviewer also approved the study.

I designed the semistructured interviews to capture participants' experiences and views on the topic of interest. Interviews were conducted in a conversational style, allowing for flexibility and organic conversations. Through the use of open-ended questions, participants gained the opportunity to discuss their thoughts in depth. I structured all interviews to follow the same basic set of questions, but I asked follow-up questions as needed—the adults who engaged in the interview process varied by geographic location. Through these specific recruitment methods, I had the opportunity to engage individuals from various areas of the state where recreational marijuana is legal.

The age span of the participants was from 27 to 40. Identifying specific areas of the state was intentionally excluded from safeguarding participant anonymity for confidentiality. A small sample size of participants represented the greater populace of those supervisors working in warehouse/distribution centers in Colorado. The

participant interviews included 12 current or prior supervisors working in warehouse/distribution centers in Colorado. Those interviewed did not reveal any private information during the interviews. All research interviewees selected environments that allowed them to conduct their interviews in private settings to maximize the effectiveness of the interview.

Following the compilation of data collection, I analyzed the transcripts using a thematic analysis approach. This method, I was able to gain a deeper exploration and understanding of the participants' experiences. Specifically, I identified and discussed the themes related to participants' views on the topic in greater detail in the findings section. As part of the study's protocol, I followed all ethical guidelines Walden University's IRB set forth. I took applicable measures to ensure the safety and privacy of all participants throughout the research process. The findings provide valuable insight into the experiences and views of those participating in this research project.

Through the study, I provide an overview of the research methods and processes used to conduct this study ethically while maintaining participants' safety and privacy. The recruitment criteria necessitated that individuals needed to be 18 of age or older and men or women with experience as a warehouse/distribution center supervisor and current or prior experience as a supervisor working in warehouse/distribution centers in Colorado. I selected the eligible participants via self-disclosure and voluntary responses to the public announcements on LinkedIn and Facebook.

### **Demographics**

Through this generic qualitative research study, I aimed to investigate the fundamental understanding of the outer world of supervisors working in warehouse/distribution centers in Colorado and to gain their perspectives as they experienced or



had experienced in their professional careers. As part of this study, I included their attitudes, opinions, viewpoints, or thoughts on their experiences. According to Percy et al. (2015), such an inclusion enriches collected demographic data. As part of this study, I utilized semistructured interviews to understand the perceptions and experiences of recreational marijuana use and workplace safety. I collected data from 27 to 40 years old participants who had observed workers who used marijuana recreationally over several years and spoke fluent English. The sample included individuals from various cultures and ethnic backgrounds within the United States. As a means of protecting participants' privacy, the inclusion criteria specified that only adults were allowed to participate in the interviews, although one female participant chose not to provide her age. By using the semistructured interview format, I was able to create a dialogue between participants and the researcher and probing questions, which provided further insight into their personal experiences and attitudes toward marijuana use. Once the interviewing process was complete, I analyzed the data obtained from the participants and coded it to understand their views better. Overall, as part of this study, I sought to explore how recreational marijuana use is perceived among individuals who have seen its effects on workers first-hand.

**Table 3***Participant Demographics*

Code	Gender	Age	Race	Work Experience (in years)
PA	Female	27	No Response	4
PB	Male	32	No Response	5
PC	Male	33	No Response	3
PD	Male	33	No Response	7
PE	Male	33	Black	7
PF	Female	No Response	No Response	8
PG	Male	31	No Response	5
PH	Male	30	Black	3
PI	Male	37	No Response	3
PJ	Male	36	No Response	7
PK	Male	38	Black	3.5
PL	Male	40	No Response	10

The process of interviewing warehouse supervisors revealed that the average experience was 5 years, with an average age of 33. Half of the participants exceeded this experience level, indicating that this duration and distribution are generally typical across demographics. By following this process, compiled valuable insights into the age and experience of warehouse supervisors in the given population.

### **Data Collection**

I did not change the data collection procedure despite the limitations of reaching participants in different time zone. The interviews relied on both telephone

and Zoom conferences to ensure participants' safety while allowing data to be gathered per Chapter 3's methodology. This process provided an ideal opportunity to conduct research remotely and observe how individual experiences were shaped by their circumstances during this period. The data of this study was collected through semistructured interviews. Participants expressed their informed consent to participate in the research, with no other incentive provided other than those listed in Chapter 3. In total, I conducted 12 interviews as arranged. However, I postponed one interview due to a scheduling conflict. I carried out the delayed interview two days after the planned initial interview and centered it around the participant's preference. I then analyzed and interpreted the data from all interviews to generate meaningful results and insights into the research topic. These findings were then used to inform the conclusions of the study. Overall, participant involvement in this participatory advocacy research study appears primarily motivated by a willingness to contribute and not incentivized by any external factors. The data collected through semistructured interviews provided valuable insights into the research topic and will help inform future research endeavors.

### **Data Analysis**

The interviews conducted for this study followed a semistructured protocol, and the data collected were analyzed in Chapter 5. According to Patton (2015), such a protocol allows for the gathering of data that is rich in detail. Through the use of this method, I verified the reliability and trustworthiness of the data. The outcomes generated from data analysis could provide hiring personnel with greater insight into how to implement recreational marijuana policies at the workplace effectively. This research can bring about a greater understanding of the impact recreational marijuana has in the workplace and its implications for employers.

Despite the perception of marijuana as safer than alcohol when it comes to driving, research suggests that any combination of substances and operating a motor vehicle or riding in one with an impaired driver poses significant risks. Kohn et al. (2014) examined the effects of marijuana use on problem recognition while driving and found that drivers under the influence of marijuana were less able to detect and react to hazardous situations than sober drivers. Moreover, Kohn et al. (2014) found that marijuana use had a more significant effect on a driver's ability to recognize potential problems than alcohol use did. Alcohol and marijuana-impaired driving differ in many ways (Stringer, 2022). This study suggests that operating or riding in a vehicle with an impaired driver poses safety risks regardless of the substance used. Never operating a vehicle or riding in one with an impaired driver is crucial. The changing attitude toward marijuana use has been reflected in legislative changes. Legislators continue to develop more policies aimed at deterring impaired driving. Although alcohol has historically been the focus of these efforts, there has recently been increased concern about marijuana-impaired driving policies.

I made reflective observational notes during the recordings, which provided valuable insight into the participants' reactions to the questions. I utilized these notes to carry out a thorough analysis of how each participant reacted to and interpreted the questions, providing more comprehensive data that could be used for triangulation purposes. By using this strategy, it was possible to have a detailed understanding of the overall themes that emerged from the participant interviews. This data collection and analysis approach proved highly effective for the project and resulted in reliable, in-depth research results.

Following the interviews, I subjected all transcripts to thematic analysis following Braun and Clarke's (2006) six-phase approach. This method involved

familiarizing the data, followed by systematic transcripts coding. I reviewed and refined coding until the emerging themes and patterns became apparent. I then used these themes to categorize the data and to identify any potential relationships between the themes. Finally, I used a narrative synthesis to make sense of the findings in broader contexts. I conducted the process of thematic analysis systematically to ensure accuracy and rigor. Firstly, I read all the data through multiple times to identify general themes and codes, which were refined and grouped into categories. I documented the analysis process through the audit trail, enabling a process of reflection, verification and refinement. I applied the audit trail to catch any missed sections to be revisited until the analysis process was complete. I then used the results of the thematic analysis process to inform further research questions and conclusions about the participants' experiences. This process enabled a deeper understanding of the data and the themes that emerged from it.

The interviewees were asked to elaborate on their experiences, beliefs and attitudes by providing additional context and detail. In qualitative research, each participant is likely to have different experiences and perspectives (Flocco et al.,2020). This process enabled the researcher to understand each participant's unique perspective. Moreover, probing was used throughout the interviews to uncover more information regarding participant responses, thereby deepening the research findings. Such a method digs deeper into participants' disclosures to elicit additional details and layers (Flocco et al., 2020). This data collection method allowed the researcher to gain more insight into the participants' experiences and enabled them to present their topic comprehensively. Additionally, this technique promoted greater trust between interviewees and researchers, creating an open dialogue where participants felt comfortable expressing themselves. Such a methodology is critical to enable

researchers to obtain the rich degree of data intended in qualitative studies (Flocco et al., 2020).

**Table 4**

*Participant Data*

Overarching Themes	Subthemes	Examples
Marijuana at Workplace	Positive perception of marijuana legalization	“I’m all for it: medicinal value, depression, anxiety, yeah” (Participant B).
	Productivity increase/decrease	“It could increase productivity because it is a stimulant or make someone sluggish...it depends” (Participant J).
	Opposition to workplace use of Marijuana	“I’m against it” (Participant A).
Safety Issues	No safety issues	“Number of incidents have not been as much as they represented” (Participant A).
	Some safety concerns related to performance	“One of my employees accidentally cut his finger while using” (Participant B).
	Neutral safety perception	“Not much negative or positive in this matter” (Participant G).

Overarching Themes	Subthemes	Examples
Policy Changes	No changes at the workplace in terms of policies	“Nothing changed” (Participant A). “No adjustments have been made” (Participant B).
	Memos and some new policies	“Smoking is only allowed on breaks (Participant A). “The company prepared a webinar for us” (Participant H).
	Stricter rules and policies	“The company requires to use marijuana at least 48 hours before work” (Participant C).
Behavioral Patterns	No opinion or no observation	“I have not noticed anything... it does not affect at all” (Participant C).
	Adverse behavioral patterns	“Workers work less” (Participant E). “Employees have a changed mood” (Participant K).
Recommended Changes	Restriction of use at the workplace	“No recreational marijuana has to be allowed when working” (Participant D).
	Off-duty restricted use	“Completely restrict marijuana on-duty or off-duty” (Participant I).
	Recruitment policies	“Do not hire marijuana users at all” (Participant L).

I concluded the interviews by summarizing the key points and allowing the participants to provide final thoughts. The very informative feedback provided valuable insights into the research objectives. Overall, the process was smooth with no interruptions or distractions, allowing for a successful conclusion of the interviews. I welcomed and encouraged their remarks, resulting in high participant engagement levels. This process reflects the importance of providing participants an open and comfortable environment to express their opinions. All participants could share freely and openly by actively encouraging their involvement and being receptive to their ideas. As such, through the use of this method, I obtained essential data that helped me reach my research goals.

I conducted the interviews in an atmosphere of trust, encouragement, and openness. This technique enabled me to create a meaningful dialogue with participants so that they could share their stories in depth. As I engaged with them, I encouraged them to provide further details and information surrounding their experiences. Through this technique, I gained more insight into the meanings behind the participants' responses. I utilized reflective listening skills to ensure their perspectives were understood, valued, and respected. Through this interpretive process, I gained a greater understanding of the semantic nature of their experiences.

By utilizing PTA, I gained a greater appreciation for and an in-depth understanding of the semantic nature of my interviewees' experiences. Additionally, I used inductive coding techniques to identify common themes in the data (Bazeley, 2019): the deductive and inductive coding processes allowed for a thorough qualitative analysis vital for this research's success. Deductive coding involves comparing participant experiences to a pre-defined set of codes created before the data collection process. On the other hand, I used inductive coding to identify new



themes during the analysis process, which had not been anticipated beforehand. These themes allowed me to interpret the data meaningfully, leading to a deeper understanding of the participants' experiences. The coding process enabled the author to identify meaningful patterns in the data. I sorted the material into 12 categories and further analyzed it for relationships and underlying themes. I concluded that individuals use various methods for adapting to challenging situations.

As part of this research, I provide valuable insight into how people cope with difficult times, ultimately leading to improved policies for responding to similar crises in the future. Through this study, I contribute to understanding resilience and adaptation during challenging situations and enhances our knowledge about effective coping strategies. Additional research is needed to identify other factors influencing individuals coping with complex life events. To ensure the validity of my conclusions, I followed a rigorous process involving both inductive and deductive coding. I started by reading through all materials to identify general concepts to develop a code. This technique is called inductive coding. After that, I used the generated code to analyze the data, specifically to test the code. This process is called deductive coding. I then compared my initial inductive and deductive codes to identify any discrepancies between the two. Finally, I could draw valid conclusions from the analysis, which provided valuable insights into my research topic. Combining inductive and deductive coding was essential in achieving accurate results. I began the data analysis process with developing coding frames for each category. I outlined predetermined criteria to guide the coding process and included contextual information such as definitions, examples and themes through the coding frames. This process was essential to ensure that all coded categories were accurately identified and correctly classified. I then

used the coding frames to code the responses accurately and reliably from the survey participants.

Accurately comparing, contrasting and cross-referencing participant experiences using deductive and inductive coding techniques enabled me to understand the phenomenon being studied by exploring discrepancies between participants' responses and verifying consistency where necessary. I can confidently rely on the findings from this study due to its rigorous approach to coding the data. Deductive coding focuses on pre-defined categories based on the research questions and aims, while inductive coding emphasizes emerging themes from the data. I created a more holistic approach to understanding the data and enhanced the reliability of the results by combining deductive and inductive coding. Overall, this systematic approach was beneficial in furthering my understanding of the explored themes and allowed for a more robust data analysis. I applied the same codes across all participants by using two coding systems, thus providing a reliable basis for interpreting the results. I further supported the coding process supported by using Delve software to identify and analyze relevant themes, enabling a more efficient data analysis.

The deductive and inductive coding of the interview transcripts was integral to the research process. Through deductive coding, I identified themes based on the research questions identified from the former. These deductive codes allowed for more significant participant comparison by providing a unified framework to examine the data. I employed this software to further explore any discrepancies among the data. Additionally, I used inductive codes to identify emergent themes that arose from the data but had not been determined a priori. Through the deductive codes, I created

a framework to identify themes, while I uncovered new insights that would otherwise remain unnoticed through inductive codes.

Through this form of inquiry, I developed a deeper understanding of the participants' outer experiences. By combining deductive and inductive coding, I used the member-checking process to generate a comprehensive overview of the participants' perspectives on the research topic. I then further used the responses from this process to verify the accuracy and clarity of the transcripts. After careful analysis, I concluded that all initial findings were valid and could be confidently reported. Furthermore, I used this step to elicit additional insight into the topics discussed during interviews, allowing for more comprehensive and detailed discussion in subsequent stages of the research. I used this deductive and inductive coding approach to understand my participants' perspectives on the research topic. I further validated study's findings through the triangulation of data sources. I compared data from multiple interviews, member checking and observations to create a comprehensive picture of the research topic. I reviewed and considered any discrepancies between the collected interviews when analyzing the results.

On the basis of the results of this study, I provide a detailed insight into the research topic, affirming the efficacy of the thematic content analysis approach used in this project. Therefore, these findings can be helpful for academics and policymakers in addressing similar issues in their work. As part of the coding process, I carried out the constant comparative method, allowing for comparing occurrences across and within interviews. I generated and patterned codes to identify emergent themes relevant to the study. I further integrated and refined themes as data collection progressed; and identified and organized initial subthemes into more broad categories. I repeated this coding process and categorizing until the data were exhausted,

resulting in a structure allowing comparisons between codes and themes. Through an in-depth exploration of the research topic, I obtained an understanding of how the study participants experienced their shared phenomenon.

Furthermore, I implemented member-checking methods to maximize consistency within and between the interviews. This rigorous methodological approach enabled a comprehensive understanding of the phenomenon under investigation. I employed the qualitative research process to investigate the results of the interviews further. I used this method to carry out a deeper dive into any hidden or underlying messages that may have been present but not explicitly expressed by participants. I used data triangulation to ensure that all ideas were adequately explored and evaluated. I conducted qualitative analysis to determine when thematic saturation had reached new insights or information in the gathered data. Through this qualitative research process, along with qualitative analysis, I gained a comprehensive understanding of the research results and ensured accuracy and validity.

Ultimately, through this qualitative approach, I provided further evidence to support the research findings. I subjected the qualitative research used in the study to rigorous analysis for deductive and inductive coding study comparison and validation. Such a rigorous process is essential to optimize the validity of the study (Amankwaa, 2016). By incorporating deductive and inductive coding approaches, the research provides a comprehensive overview of the findings (Aldiabat & Le Navenec, 2018). This process allows for more reliable conclusions from the data, ensuring accuracy and rigor in the overall results. Through the qualitative research conducted in this study, I show that it is a testament to the effectiveness of these methods. With proper analysis and validation, qualitative studies can provide results that are as reliable and valid as those obtained through quantitative research. Through the qualitative research

conducted in this study, I add to the existing literature by providing a detailed exploration of the topic at hand. Such a degree of exploration aids in an enhanced understanding of the target phenomenon (Aguinis & Solarino, 2019). By employing a qualitative approach, I gained insights into how different factors interact and influence each other when attempting to understand the studied problem.

Through this qualitative research study, contribute to the existing body of knowledge in its respective field. Through rigorous data collection and analysis, I uncover valuable insights that can inform future research directions and aid decision-making processes. These findings could be beneficial for qualitative researchers, practitioners, and policymakers. Data triangulation is a qualitative research method that collects data from multiple sources, such as interviews and surveys, to verify and validate the findings. This approach comprehensively evaluates the research study by gathering evidence from different perspectives (Anderson, 2010). By combining qualitative data from varying sources, researchers can generate reliable conclusions about the outcomes of our research. This technique is instrumental in qualitative research because it allows us to draw unbiased conclusions by triangulating our data (Andrew et al., 2017; Bazeley, 2020). The use of data triangulation in qualitative research provides a more comprehensive and reliable evaluation of the study, leading us to more accurate and trustworthy conclusions.

Any identified discrepant cases should be explored further to ensure a comprehensive analysis. This process could involve conducting additional qualitative interviews with key stakeholders or using existing qualitative data sources to help analyze any potential discrepancies. This process includes detailed descriptions of the qualitative data collected, identifying patterns and themes across responses, and providing meaningful quotes to support the qualitative results (Belotto, 2018). By

doing this, researchers can gain valuable insights into the areas of discrepancy and draw valid conclusions from qualitative research findings (Bazeley, 2020).

### **Evidence of Trustworthiness**

The qualitative research approach was also used to ensure that the trustworthiness of the results was established. The verification process was essential in providing the research results were reliable, valid and trustworthy. This process involved rigorous coding, member checking and analyzing participant transcripts. Through these steps, I identified patterns in the data and themes for analysis were generated. Both are critical for researchers to ascertain within the scope of qualitative analysis (Griffin, 2018; Peart et al., 2019). This qualitative approach allowed for an in-depth exploration of the research topic, providing valuable insights into the participants' experiences. Overall, this qualitative methodology has provided a reliable and authentic account of the study findings.

I integrated member checking as an essential qualitative research method to confirm the accuracy and validity of data. I provided participants with a summary of their responses for review, which they could use to explain further and clarify any misunderstandings. By engaging in this process, I verified that his interpretations of the data accurately reflect the participants' experiences. Additionally, participants confirmed the qualitative data's themes, further enhancing the validity of the results and conclusions (Aldiabat & Le Navenec, 2018).

Therefore, I needed member checking to ensure my qualitative findings were reliable and valid. These qualitative research methods are vital in constructing a robust and credible analysis and offer invaluable insight into the realities of a studied phenomenon. Researchers can assess discrepancies and evaluate conflicting elements through data triangulation to ensure accuracy (Aguinis & Solarino, 2019). Sampling

allows for more efficient study, ensuring that qualitative data is collected from a representative sample of individuals or settings. Moreover, researchers can use member checking to enable research participants to respond to interpretations of qualitative data, and observation to gain a deeper understanding of certain behaviors and settings (Ames et al., 2019). Thus, these qualitative methods are essential to constructing a well-grounded analysis and should be considered.

### **Credibility**

I gained an in-depth understanding of the experiences and perceptions of the participants through this qualitative research. I conducted descriptive analysis using an inductive approach (Creswell, 2012) to identify patterns from the data. I followed a semistructured format in the interviews for this study, through which I explored relevant topics in greater depth. I obtained a wealth of information through content analysis of the interviews, which provided insight into essential themes associated with the research topic.

As part of this analysis, I generated insights into the research topic's individual and collective understandings. I also identified connections among participants' experiences, perceptions, and expected trends in the qualitative data. As part of the findings from this study, I demonstrate how qualitative research can provide valuable information to inform decisions or design interventions to address a particular issue. Through qualitative research, researchers can gain a more profound understanding of the phenomenon under examination. It can also provide a platform for individuals to voice their outer experiences and perspectives, which may be overlooked through other methods.

I examined qualitative data from participants' responses during semistructured interviews as part of this qualitative coding process. Through this systematic process,

identified meaningful segments within the qualitative data and helped categorize them into distinct themes (Patton, 2015). I determined that qualitative coding was an essential tool in this qualitative research, as it helped me to gain insights into how specific populations process information. I carried out a more nuanced interpretations applied to various contexts, showing that qualitative coding was invaluable resource for this study.

I applied this qualitative study to explore the phenomenon in depth to gain a more comprehensive understanding of how participants perceived their situation. By collecting the qualitative data, I generated valuable information on the emotions, values, and perceptions that shaped their experience. I better understood participants' experiences through the use of this qualitative methodology. Based on the qualitative data, I revealed extensive insight into the purpose and validity of these conclusions. Through Delve software, I used qualitative research methods such as thematic analysis to analyze and sort the qualitative data according to key themes (Meyer & Avery, 2008). I gained a different understanding of how the qualitative data was used to support or refute the presented conclusions through this process. Furthermore, I applied qualitative data analysis techniques, such as coding, and inductive and deductive reasoning, to exploration the qualitative data more deeply. According to Neuendorf (2017), such methodologies facilitate researchers to study the targeted phenomenon of interest in greater detail.

I arrived at several key insights into how the qualitative research was used to reach these conclusions based on this qualitative analysis. Overall, I recognize this case to be an invaluable opportunity to apply qualitative methods to examine the validity and purpose of the findings reached. I used the qualitative research approach in this study to gain an in-depth understanding of the participants' experiences. I used



direct quotes to weave the voices of each participant into the analysis, which served as a powerful tool for understanding their perspectives. Additionally, focusing on a discrepant case (contradictory data) gave another angle to interpret the results, ultimately allowing for a more comprehensive understanding of the study's findings. Including this discrepant case, they also increased the reliability of the overall results, further improving the accuracy and validity of the research. I present the research results in a clear and organized fashion, making it easier for the reader to comprehend. I use visuals such as tables to display data points and support the conclusions.

Furthermore, I discuss the implications of the findings to contextualize them within a larger framework further. In the discussion section, I include potential courses of action based on the current state of the study, as well as recommendations for further exploration. All in all, I consider this project a success, as I generated meaningful insights into the topic at hand. Through the carrying out of this project, therefore, I aimed to verify further that the data collected is accurate and true. This technique ensures the integrity of the research while also giving readers a comprehensive understanding of what was learned. Furthermore, it can help address case discrepancies or evidence found during the research process.

Identifying and mitigating discrepancies in qualitative research is essential for ensuring data accuracy and results validity (Zairul, 2021). This process involves closely examining the evidence gathered from interviews, surveys, observation and other data sources to identify inconsistencies or inaccuracies that can lead to biased outcomes. Several factors, such as researcher bias, data collection mistakes, or data coding errors, may cause these discrepancies. Once identified, the researcher can then identify and mitigate these discrepancies. This process could involve looking for alternative explanations for inconsistent cases, verifying evidence through additional

interviews or surveys, or using more rigorous methods of data analysis (Zairul, 2021). Researchers can ensure that their results are reliable and valid by addressing discrepancies. Ultimately, this process is essential for ensuring data accuracy and reliability of results in qualitative research.

### **Transferability**

I conducted the data analysis process using an inductive, thematic approach. Through this method, I analyzed the transcripts line-by-line to identify patterns in the data and create codes. After coding, I organized the themes into broader categories and subthemes based on their relatedness. Through the use of this technique, I better understood how participants responded to the research questions and related them to other existing studies (Nedbalek, 2021). I conducted the systematically, ensuring the reliability and validity of the results. Ultimately, this allowed for identifying meaningful connections between themes that could be used to conclude the research questions. I utilized multiple triangulation methods to comprehensively understand the study's results (Madondo, 2021). These included Delve (SAGE Ocean, 2021), Deductive and Inductive coding, and Excel to facilitate Hand Coding (Sarfo et al., 2021). The use of triangulation allowed for greater confidence that the findings were valid across different contexts. Moreover, I can more confidently generalize the results of this study to other settings due to the diverse data sources used. By incorporating multiple methods in the study, I strengthened its validity and reliability.

Based on the research findings, I determined that specific themes emerged in interviews despite the different contexts in which the problems were presented. I identified those themes related to sobriety, communication and leadership as the most important for addressing employees using recreational marijuana. Using the emergent themes from each interview as a point of reference, I compared and contrasted

different approaches to problem-solving issues with marijuana users (Bazeley, 2020). This process provided valuable insight into approaching similar issues in different settings.

I observed similarities between interviews, which enabled him to draw broader conclusions about his findings. I identified differences between interviews that could inform future research and practice in similar contexts. Through this process of interviews, I identified common patterns in responses and gain a greater insight into this study. I used this technique to form more profound conclusions on the issues raised and offered more nuanced interpretations of the data (Anderson, 2010). By combining these emergent themes across multiple interviews and comparing them with each other, I gained a greater understanding of the results and draw more meaningful conclusions.

This comparative analysis process was fundamental to my ability to gain an overall comprehension of this study. I used a triangulation method to verify the accuracy of his findings, which included interviewing participants and member checking. By utilized this iterative approach, I gained a deeper understanding of the study and achieved insights that could not be attained through individual interviews alone (Amankwaa, 2016). Additionally, by using multiple sources for data collection, I reduced any potential bias from the participant responses. A crucial part of content analysis is ensuring the data collected is organized and structured meaningfully. I achieved this by creating coding schemes, which provided a framework for categorizing data points according to specific criteria. Such systems identified patterns and relationships between elements (Aldiabat & Le Navenec, 2018).

By combining these methods, I better understood and generated insight into how his findings could be applied to other contexts. Ultimately, the results were both

valid and transferable across settings. Through the use of this technique, I drew meaningful conclusions from his study that can be generalized to similar scenarios. I triangulated across data sources to further strengthen the transferability of the findings across contexts (Tashakkori & Teddlie, 2018). I carried out triangulation across data sources to further enhance the transferability of the findings across contexts. I took into account ethical considerations throughout the research to ensure that participants' experiences and voices were accurately represented (Aldiabat & Le Navenec, 2018; Ravenhill & Visser, 2019). Through the interviewing process, I determined that there is still much to be explored in this research context. The interviews also enabled a greater exploration of the implications of the research, which can be further explored in subsequent studies.

I gathered aualitative data from interviews with supervisors in the field through interview responses (Surmiak, 2020). I conducted the interviews via telephone and Zoom, depending on the participant's availability. This procedure ensured that a wide range of opinions was included in the research, which provided a more rounded view of the topic. I used this method to create an informed recommendation for addressing the issue. I then analyzed the data using thematic coding to identify and interpret key themes.

Finally, I considered ethical aspects throughout the research to ensure that participants' experiences and voices were accurately represented. By following these steps, I conducted an in-depth exploration of the research topic, with rigorous and reliable results (Ellis-Barton, 2016). The research practices employed in this study also contributed to the accuracy and transferability of the results. All contributors were given information about the study before agreeing to participate, and their consent was obtained before beginning any data collection. Furthermore, I removed

all identifying details from participant responses, and used pseudonyms instead of names or other identifying information. By doing this, I anonymized the data, allowing valid results transferable across contexts. The study's transferability is constrained since it was conducted on a small subset of blue collar employees in Colorado. While a sample size of 12 supervisors may not seem significant, considering that 11 states and the District of Columbia have legalized recreational marijuana use (Brown et al., 2020), it may be sufficient to draw limited but meaningful conclusions about the legalization landscape at the national level. These strategies created a safe and ethical environment where participants felt comfortable expressing their views and experiences.

### **Dependability**

I anchored the research process in the essential component of the audit trail. Through its use, I established trustworthiness and dependability within the collected data, documenting all changes made. By carefully reviewing the audit trails, I assessed participant quotes' accuracy and consistency. Furthermore, I identified reoccurring themes to better understand participants' experiences and responses better. Overall, the audit trail proved to be an invaluable research tool that greatly enhanced the findings of this study (Belotto, 2018). I utilized the audit trail to ensure the findings were reliable. It used it in all stages of the research process, from the data collection to the analysis. For example, using audiovisual methods such as video and audio recordings and accurately noting participant quotes when conducting the interviews was essential; using these recordings was beneficial when it came to ensuring the accuracy of the data collected (Aldiabat & Le Navenec, 2018; Bellamy et al., 2016). They can also be used to validate the results by providing evidence that supports the findings.

I used an audit trail during the analysis stage to ensure that all the data was interpreted correctly and that no assumptions or inferences were made. Using this method of audit trails throughout the research process ensured the dependability of the findings. It is a valuable tool for ensuring consistency and accuracy of the results and can be used to provide evidence to back up any claims that may have been made during the research. I created an audit trail to track the entire research process from start to finish (Aldiabat & Le Navenec, 2018; Brod et al., 2009). By tracking, I documented each research step and gained additional assurance that my results were accurate and reliable (Brod et al., 2014). As I worked with this data, I applied coding and content analysis techniques to uncover patterns, trends, and themes within the interviews. I identified and analyzed critical insights, ensuring the results were valid and reliable. Through the coding process, I elicited further discussion of the data and its interpretation (Aldiabat & Le Navenec, 2018). Through the process of creating an audit trail and utilizing these analytical methods, I obtained reliable results for this research.

Using the Delve system and hand coding, I compared different interpretations of the coded data to contextualize it more meaningfully. Thus, I improved my understanding of the data set and gained deeper insights into its implications. Furthermore, this process provided a platform to foster understanding from different participants and create an evidence-based approach to the analysis. As a result, I gained an even better understanding of the data and its implications. I made more informed decisions regarding this research on the basis of this technique.

I reviewed existing literature to understand this research topic better. On the basis of this process and the associated background knowledge, I drew meaningful conclusions from this qualitative data analysis and find implications for my results. I

used this technique to create reliable and valid results supported by my previous research findings. With this, I could ensure the trustworthiness and accuracy of my conclusions. By exploring existing literature, I drew valid, reliable conclusions from my qualitative data analysis and previous research findings. This process allowed me to understand my subject area and its implications for my study. In doing so, I ensured the trustworthiness and accuracy of my results. A researcher can thoroughly review existing literature with reliable and valid results. Moreover, this emphasizes the importance of rigor in research, as it is essential for creating trustworthy conclusions. By thoroughly reviewing existing literature, I more easily drew reliable and valid results from data analysis or previous research findings.

I anchored the present study in the process of coding and data analysis to complete my qualitative research study. By using this rigorous and detailed process, I carefully examined the data for any patterns or trends that could further inform my study. After coding the relevant information, I analyzed the results to draw meaningful conclusions about my research problem. I created this process to be comprehensive and well-structured. It allowed me to process the data effectively, providing meaningful insights about the research topic. I utilized these insights to inform my studies further and build upon existing theories related to them. Through this process, I processed data quickly and efficiently, which is essential for the study's success. I found that coding data and conducting analysis was extremely helpful in providing accurate information about my research problem. I developed a more comprehensive understanding of the issue, and, ultimately, I applied this process to identify potential solutions to the problem, which was invaluable.

### **Confirmability**

Based on the findings from the interviews, I clustered the data around key themes, with each theme further exploring and generate a better understanding of the data. Through the use of this process, I drew meaningful conclusions about the research objectives. To guarantee the validity of my results, I conducted an analysis in which the data was compared against other sources, including previously published studies, reports and surveys. Through this process, I corroborated my findings and drew more accurate conclusions about the research objectives. I captured a broader range of responses by using this data collection technique and revealed different perspectives that could not have been identified with traditional quantitative methods. I collected rich information by eliciting detailed accounts and capturing people's experiences, giving further insight into the study topic (Albanesi, 2014). By using this method, I explored these issues more deeply and generated a more comprehensive overview of participants' responses. This technique efficiently provided accurate answers to questions related to the study (Albanesi, 2014). The data collected through this process was valuable in creating meaningful insights that could be used to inform future research or decision-making processes. Therefore, this method was beneficial for producing valid, reliable findings that could be shared with various stakeholders (Albanesi, 2014).

### **Process of Coding**

The data were examined through a systematic process of coding, categorizing and classifying them to draw meaningful conclusions. By using this rigorous process of analyzing and interpreting the data, the researcher produced reliable outcomes that supported this study's purposes. The researcher revealed patterns, trends and relationships between the participants' responses, which provided valuable insight into



the research questions. Finally, these findings were organized into themes that reflected the participants' experiences and opinions about their subject matter.

Through this rigorous analysis, this study provided a comprehensive understanding of the research questions.

I utilized an iterative process to check and validate responses against each other. Overall, the research process involved in-depth interviews with 12 participants and a rigorous analysis and interpretation of the data collected. As part of this process, I obtained data that was accurate and valid before it was used in the study. I organized the final results of this study into themes that reflected the participants' experiences and opinions about their subject matter. Through this process, I produced reliable outcomes to support this study's objectives and provide a comprehensive understanding of the research questions.

### **Content Analysis**

Content analysis was essential for making sense of qualitative data. I carefully selected all quotes used within this study with significant consideration regarding how they could best capture the expressed sentiments. This systematic and rigorous procedure concluded a successful study with reliable results. The process enables more accurate conclusions from data, leading to better decision-making. It also helps to identify and correct any flaws in methods or designs before publication (Aldiabat & Le Navenec, 2018). Through systematically coding and categorizing the interview data, I uncovered emerging themes and patterns which took time to recognize. This process also provides an invaluable tool for deepening our understanding of human behavior and experience. Ultimately, thorough content analysis is essential for conducting effective qualitative research.

Content analysis is an invaluable tool for qualitative research, enabling researchers to understand better the phenomena they are studying. Content analysis involves coding and categorizing qualitative data, allowing researchers to understand participants' thoughts, feelings and experiences comprehensively. This process helps identify patterns in the data that may be overlooked. Researchers can draw meaningful conclusions from their research findings by applying rigorous content analysis techniques. Through this approach, they can uncover new insights and areas of inquiry that may not have been previously identified. By engaging in reflective practice and thoughtful coding, researchers can develop more profound insights into the data and generate meaningful conclusions from their findings.

The insights I gathered through these conversations allowed for more comprehensive and detailed interpretations of the data, leading to a more reliable set of findings. This procedure illuminated some nuanced complexities that may not have been identified otherwise, thus increasing the credibility and accuracy of the results (Albanesi, 2014). By considering multiple perspectives in this analysis, I was able to attain a more thorough understanding of the issue at hand. Additionally, engaging in dialogue with diverse participants provided an essential opportunity for mutual learning – allowing for greater knowledge exchange and stronger connections between different individuals (Albanesi, 2014). Through this process, I was equipped with an enhanced comprehension of the complexities associated with their work. Furthermore, the conversations also yielded valuable information about potential strategies for addressing the problem. All of these advantages underpinned the quality and reliability of the findings.

Qualitative research has been critical in understanding the topic of interest. Researchers have applied this method to comprehend complex social phenomena

better and discover ideas and meanings that quantitative methods could not reveal (Neuman, 2015). I gathered data from individual accounts to uncover a nuanced view of the participants' experiences and perceptions. I then analyzed the data according to established coding procedures and categories to make meaning from the information gathered (Miles & Huberman, 1994). I carefully evaluated the findings and cross-referenced them with multiple participants to ensure accuracy. Finally, I achieved a 100% confirmation rate through member checking, through which I gained further validation for the conclusions drawn (Miles & Huberman, 1994)

### **Deductive and Inductive Methods**

I thoroughly analyzed the collected data using deductive and inductive methods. I applied both deductive and inductive processes to ensure the accuracy of the results. I used audit trails and reflexivity logs to further supplement the collected data. Based on this, I traced any potential issues within my research process. I also aligned my ethical procedures strictly followed the American Psychological Association's guidelines, including informed consent, preserving participant anonymity, appropriate debriefing methods, and evaluation of any possible adverse effects. Through the use of this process, I drew meaningful conclusions from my research with confidence.

I analyzed the collected data using a quantitative research method to identify potential areas of improvement. I expected the collected data collected to contribute to understanding how a supervisor can improve their supervision of recreational marijuana users. I also provided the participants with feedback when necessary to ensure that the data collected was accurate and of the highest quality. I provided this feedback promptly to keep the participants informed throughout the study, allowing them to make necessary adjustments or clarifications. All participants expressed

satisfaction with their role in the project and commented on the professionalism of the researcher. Furthermore, I notified all participants of the completion and their contributions were acknowledged in the final report.

I analyzed and discussed all findings to ascertain accuracy and validity. As part of the debriefing process, I ensured that participants were aware of all pertinent research information. Through this process, I clarified any misunderstandings or concerns that may have arisen throughout the project. In addition, I took measures to minimize any potential bias from influencing results. Following this, I presented the findings impartially, giving readers a comprehensive understanding of the study's outcomes. After this, I provided supervisors and other interested parties access to the results to make informed decisions. I concluded the research project with a thorough summary of all relevant information and the implications of the findings. In this way, I shared a clear view of the study's outcome with all relevant audiences.

After ensuring understanding and obtaining informed consent, I began data collection. Before beginning the data collection process, I read out a statement reiterating all of the information provided in the consent form and reminded participants that their responses would remain anonymous. Participants could ask questions before signing the consent forms, and any such queries were addressed promptly. During the process, I reminded participants of their right to withdraw and could skip any questions they did not feel comfortable answering. I also ensured that all responses remained confidential by storing all collected data on secure servers with limited access.

### ***Ethical Guidelines***

Overall, as part of this research, I followed ethical guidelines, ensuring all participants felt comfortable and informed at every step. Though the use of this

process, I provided a reliable dataset backed by a robust methodology to assist me in drawing meaningful conclusions. The data analysis tools used in these tests were designed to provide accurate, reliable results. All participants' anonymity and the reliability of the findings were protected by the procedures used. Additionally, due to the ethical standards I adopted, any potential bias or error was minimized. With this data at hand, I identified patterns and relationships between various elements of the research. When conducting interviews, it is essential to validate observations that have been made by asking questions and probing for more details or explanations from the interviewee. By validating observations, researchers can ensure that any conclusions drawn from the data are accurate and reflect the reality of a given situation.

Additionally, validating observations with follow-up questions during interviews can provide insights into a topic that may have yet to be initially considered. Furthermore, it is essential to note that validating observations in an interview setting can help uncover any potential biases or assumptions influencing the data collected. It is also beneficial to consider multiple perspectives when validating statements, as this will allow for greater accuracy and understanding of the data. Ultimately, validating observations during interviews is a vital step that should be considered, as it can profoundly affect the outcomes of any research project.

### ***Latent Themes***

After collecting the categorical data, I identified the latent themes by analyzing their common elements and patterns. The first theme relates to the effects of marijuana on workplace productivity. Participants reached a consensus that marijuana could be a helpful tool in managing stress and burnout. Still, there were concerns about it leading to decreased focus or increased anxiety if misused. Participants felt

that employers should create policies surrounding marijuana use to ensure proper regulation and that employees should be educated on the potential risks of using marijuana. Six respondents (PC, PF, PI, PJ, PK and PL) viewed their employees as having Decrease Work Performance in their daily routine. From these results, I infer that regular marijuana usage among employees positively and negatively impacts work activity. The participants (PC and PI) reported increased productivity and decreased safety due to the effects of marijuana. As part of these answers, I highlight the need to investigate the risks associated with employee marijuana use to inform more effective workplace policies.

### *Safety Issues*

The second theme related to safety issues that I elicited from interviews with participants discussing their experience observing their employees' performance concerned several potential safety concerns. They spoke about physical repercussions, such as employees feeling drowsy or impaired motor skills, which could put them at risk for accidents and injuries. They also noted that their employees experienced difficulty concentrating and focusing, which could lead to errors in judgment or decision-making. These risks can have severe implications for the organization's overall safety record and bottom line due to increased costs associated with workplace accidents.

In Table 4, I show that five overarching themes were recovered as part of the results, with each supplying two or three subthemes. The principal themes (Marijuana in the Workplace) relate to the typical characteristics of legalization observed by participants at their workplaces. The (Safety Issues) participants noticed related to recreational marijuana legalization in Colorado. Specific (Behavior Patterns) were observed in the interviews, which they reported after legalization. They also noted

Policy-related changes (Policy Changes) their companies where participants operate have (or have not) adopted since the legalization of recreational marijuana.

Recommendations participants (Recommended Changes) provided regarding workplace policy changes could have an impact if taken seriously by upper management. Observation of the subthemes revealed that responses varied dramatically regarding the legalization of recreational marijuana, its effect on safety, workers' behavior, and policies. The examples of responses also emphasize different perceptions, experiences, and attitudes toward the legalization of recreational marijuana and this substance in general. Also, the companies in Colorado adopted utterly different approaches toward using recreational marijuana in the workplace.

### *Perceptions and Attitudes*

Interviewed supervisors revealed varying perceptions and attitudes regarding marijuana use in the workplace. While some supervisors felt that workers' productivity, safety and overall functionality could be enhanced by legalizing marijuana in the workplace, others expressed concern about potential adverse effects. This disparity reflects complex factors related to personal views of drug use, workplace culture and policies, and broader economic and social considerations. For instance, four participants (PA, PB, PJ, and PG) reported positive effects, such as increased productivity related to marijuana usage. On the other hand, PB and PE said adverse effects include workers working less due to marijuana usage. More research is necessary to examine the possible consequences of marijuana use at the workplace before any conclusive inferences can be drawn.

According to the analysis, around five participants (PA, PB, PG, and PK) support the legalization of recreational marijuana, four (PE, PF, PH, and PL) oppose it, and three (PC, PD and PE) expressed neutrality to this question. Regarding the

incidents and trends the participants have observed since the legalization of recreational marijuana, the answers also varied dramatically. While four (PA, PC, PF and PI) of the participants recognized some incidents (e.g., low proficiency, drowsiness, cutting a finger), another five of the respondents (PA, PC, PF and PI) claimed that nothing has changed or they did not notice anything; two of the participants (PF and PI) admitted uncertain trends (both positive and negative), which they did not explain in detail. Finally, only one participant (PK) asserted that a positive trend was observed.

In addition to the workplace issues and trends, respondents detected safety issues connected to recreational marijuana use. Five participants (PA, PB, PC, PD, and PL) declared that no problems were observed. In comparison, four (PC, PI, PJ, and PK) have noticed the emergence of serious problems (e.g., cutting a hand, endangerment of others, hallucinations, and accidents) and three (PA, PF and PK) recognized some minor safety concerns (e.g., a decrease in output, inability to prevent accidents due to low control, poor coordination). At the same time, serious concerns were not articulated by respondents. Overall, only one respondent (PL) asserted that his company does not tolerate marijuana use at the workplace—their opinions regarding the increase of safety concerns at the workplace after legalization were divided in half. Six participants (PA, PB, PD, PE, PH and PJ) claimed no specific changes were observed. In contrast, six respondents (PC, PF, PG, PI, PK and PL) claimed that some alterations were noticed (e.g., rescheduled work hours, more accidents, the workplace is affected).

### ***Productivity***

A more significant proportion of respondents noticed issues related to productivity compared to the aspects related to safety and trends. Notably, after



legalization, seven participants (PA, PB, PC, PG, PH, PI and PL) noticed negative productivity trends, positive trends were observed by three respondents (PD, PE and PK) and two interviewees (PF and PJ) were neutral in their responses. Among the negative trends, participants admitted sluggish productivity, increased turnover, and increased time for completing work.

During their interviews, supervisors from various industries, who have observed employees exercising their rights to use recreational marijuana while employed have experienced, stated that they have observed an increase in productivity. They have also indicated that they have taken steps to introduce a webinar and implemented fines for intoxication. The aspects related to company policy, legal framework, and regulations of marijuana use on the job and off-the-job generated relatively similar responses. Specifically, most respondents acknowledged that the companies implemented no new policies or were very weak. Three participants (PA, PE and PF) recognized that their companies applied no policy changes or presented new rules after the legalization. The remaining eight interviewees (PB, PD, PG, PH, PI, PJ, PK and PL) asserted that their companies introduced a regular drug test and one (PC) required them not to smoke 48 hours before duty.

### ***Authority to Supervise***

Most participants acknowledged that their companies delegated the authority to supervisors to implement warehouse rules to control and monitor their employees. One respondent (PE) admitted that he applied no policy changes or provided additional rules. The rest of the participants declared that some changes they managed to apply as supervisors, including the demand to refrain from smoking while on duty,

the requirement for supervisors to keep an eye on employees, and a requirement for employees to be more careful and handle their medical expenses.

Overall, after analyzing the data obtained through the interview, I concluded that the responses leaning toward legalizing recreational marijuana in Colorado were controversial. It is clear that legalization impacted the workplace, yet, due to the absence of standardized policies in many companies and rules that could regulate the consumption of this substance, it is challenging to generate a conclusive statement of whether this process made a positive or negative impact. According to the supervisors, using marijuana in the workplace could result in adverse outcomes for workers who consume it and their colleagues. Warehouse work requires following safety rules thoroughly to prevent injuries and accidents. In such conditions, the consumption of recreational marijuana could be detrimental, as this substance can slow down physical reactions and decrease concentration. At the same time, some respondents admitted that they could not notice any specific effects of recreational marijuana or that its use did not significantly affect their employees.

### ***Positive Changes***

Few respondents (PA, PB, PC, PD and PJ) noticed positive changes. At this point, it is crucial to consider the subjective perception of each respondent regarding recreational marijuana and its legalization. Since some interviewees opposed legalization, their responses could be somewhat biased regarding the effect of marijuana consumption on workers' workplaces, safety, and productivity. Also, some respondents admitted that their companies regulate the consumption of recreational marijuana at the workplace and require either drug tests or a 48-hour wait time to prevent its impact on work.

## **Responses to Research Questions**

As part of this study, I used five research questions to answer during the exploration. During the preliminary analysis, I discovered that participants' responses varied dramatically regarding the effect of marijuana use on themselves and their employees.

### **RQ1**

RQ1 was: In the past five years, post-legalization of recreational marijuana in Colorado, what have been the actual experiences of supervisors involving incidents, accidents, and changes in work patterns and worksite safety among employees? As part of this study, I ascertained that supervisors have a wide range of opinions regarding the impact of marijuana consumption on workplace safety. While some supervisors reported seeing no difference in incidents or accidents, others felt that there was an increase in these types of issues. The variability in supervisor responses could be attributed to differences in managerial styles, company policies, and safety protocols. It is essential to note that the study did not examine the direct effects of marijuana consumption on workplace safety. The overall outcome for employers was a decrease in productivity.

Based on the analysis the data from individual supervisors, I discovered that the positive effects were minimal compared to the majority of negative impacts. Managers stated that the negative impact resulted in a longer timeline for project completion. As part of this study, I show that implementing such laws is not always effective and should be cautiously approached.

These findings suggest that legalizing recreational marijuana in Colorado has negatively affected employers. Although severe incidents were relatively rare, there is a need to regulate recreational (or any) marijuana use in the workplace due to

concerns about its impact on employee reactions, health, and productivity. Overall, supervisors are not entirely comfortable with marijuana use in the workplace. While many of them support legalization, supervisors oppose the idea of using this substance at work. Managers need to consider these findings when developing policies regarding medical marijuana and its possible effects on employee behaviors and output. Ultimately, employers should create a safe, healthy work environment where employees can be productive and deliver quality work.

## **RQ2**

RQ2 was: What are supervisors' individual experiences adjusting to legalized recreational marijuana's legal ramifications in the workplace and off-duty use? Supervisors' lack of experience in adjusting to the legalization of recreational marijuana was also associated with a sense of legal vulnerability. The researcher determined that while supervisors do not consider themselves legally responsible for the actions of their workers, they are still concerned about possible repercussions from any violation of regulations related to recreational marijuana. Employers must consider how a worker's use of marijuana may impact their performance and safety on the job. It is important to note that supervisors should not forget about the potential repercussions of allowing marijuana usage in a workplace context, as this could result in legal liability for employers. By implementing policies related to recreational drug use, including testing and other measures, supervisors can ensure they are taking all necessary steps to protect their organization. Supervisors must understand the potential legal implications of recreational marijuana use and take precautions to avoid adverse outcomes.

### **RQ3**

RQ3 was: How have supervisors adjusted their employment policies and practices after the legalization of recreational marijuana? The companies employed supervisors to ensure the policy adjustments were followed. Based on the findings, I noted that the minor requirements of drug tests, ceasing use 48 hours before a shift, and the supervisors strictly enforced fines for appearing intoxicated. Moreover, I noticed on the basis of the interviews that workers who violated these policies faced disciplinary actions such as suspension or termination. Thus, supervisors have successfully enforced the policy adjustments and ensured a safe workplace for all employees.

Given that recreational marijuana is high in THC, its use can adversely affect employees and interfere with their ability to perform tasks; this could ultimately affect the safety of the workplace, which is why supervisors are responsible for preventing recreational marijuana consumption within the warehouse. Furthermore, they should enforce strict policies and regulations concerning drug use on-site to ensure proper workplace safety. This process could include drug tests and other measures to help maintain a safe work environment for employees. It is also essential for supervisors to be aware of the different types of marijuana products, both medicinal and recreational, so that they can better understand their effects on employees and properly regulate any potential risks.

I generated results that have raised a significant concern regarding companies' policies on marijuana usage in the workplace. I found that most supervisors were dissatisfied with their current policies and lack of effective enforcement. Based on this, it is important to have clear regulations to ensure workplace productivity and safety. Companies should be aware that by not having a clear policy on marijuana use, they

are exposing themselves to potential legal and financial risks. Moreover, employers need to ensure that all staff are aware of the company's policies on marijuana usage and provide ongoing training to supervisors so that they can effectively monitor and enforce these rules. Companies can ensure a safe and productive workplace while reducing potential liabilities by taking proactive steps.

#### **RQ4**

RQ4 was: What approaches are supervisors using to develop effective and sustainable workplace safety programs, if any, after the legalization of recreational marijuana? I determined that supervisors had varying opinions on how to address the issue of employee marijuana use during work hours. While some chose to follow company policy and rely solely on drug tests and restricted use rules, others began taking precautionary measures such as monitoring their workers more closely, providing warnings about marijuana use, and demanding abstention from using it at work. However, due to the limits of their capabilities imposed by the company's approach to this issue, supervisors had difficulty effectively addressing employee marijuana use.

I further determined that supervisors in companies with no marijuana policy experienced difficulty controlling and managing the behavior of employees who use marijuana. This issue is perhaps attributed to the fact that these employees knew their rights and understood their entitlement to this particular recreational activity. Notably, supervisors were also unfamiliar with relevant legislation about the legality and use of marijuana, leaving them unable to provide the necessary guidance and support adequately. Therefore, it is evident that employers would benefit from implementing workplace policies specific to marijuana use and addressing the safety risks associated with it.

## **RQ5**

RQ5 was: How did the legalization of recreational marijuana use affect the workforce's productivity, safety, and the occurrence of counterproductive work behaviors? Based on the results of this analysis, I determined that the lack of workplace policies can lead to undesirable employee behaviors. I observed that many supervisors noticed an overall decrease in productivity, as well as slowed-down work performance and unproductive behavioral patterns among their staff. In some cases, I noticed supervisors' observations that certain workers appeared under the influence while on the job. Some workers demanded their right to use marijuana during breaks, which can harm overall productivity.

### **Implications**

The analysis of results showed that legalization has brought about many benefits, but there are still some drawbacks for supervisors regarding recreational marijuana. Primarily, workers may be less productive after using marijuana recreationally, as the effects of THC can lead to reduced alertness and slower reaction times. As such, supervisors must pay more attention to their employees' behavior and performance to ensure that their work is not being affected by the use of marijuana. Furthermore, supervisors must consider any safety concerns in the workplace.

For instance, if employees operate heavy machinery under the influence, this could potentially lead to a dangerous situation. Supervisors should be aware of the possible changes in behavior and performance due to legalization and take necessary measures to ensure safety and compliance. Though it may be legal to use recreational marijuana in Colorado, employers should still be aware of the possible legal repercussions. Despite being legal on a state level, marijuana remains illegal on a federal level, and employers can face penalties if they fail to comply with relevant

laws or regulations. As more states remain to legalize recreational marijuana, employers must stay informed of this process's potential benefits and risks.

Based on the results of this study, I arrived at the implication that the legalization of recreational marijuana has some adverse effects on the workplace and employees if no policies are implemented by the companies or supervisors that could regulate consumption. Not all participants were satisfied with their companies' approach to this matter. It is possible to speculate that a somewhat negligent approach to this matter in some companies could be explained by a failure to understand the difference between medical and recreational marijuana, including the distinction of effects of this substance on employee health and mental capacity. Inconsistency and ambivalence of some data retrieved during the interview show that even though the legalization of recreational marijuana occurred in Colorado some years ago, many organizations do not perceive its effect seriously. Despite the subjective perception of legalizing recreational marijuana, marijuana, with a higher proportion of THC, profoundly affects employees' mental and physical functions. Ignoring this could lead to a higher incidence of injuries and accidents, which is negligent and irresponsible for a company.

Legalizing recreational marijuana could be a positive development for many Colorado citizens. However, due to its effect on employees, the regulation of its use must be a priority for organizations and formal leadership to avoid on-the-job incidents or injuries. Many supervisors are unaware of the potential consequences of recreational marijuana use on employee productivity. Marijuana is a depressant drug that alters the functioning of the central nervous system and significantly impacts reflexes, reaction times, and concentration. THC levels found in recreational marijuana can interfere with cognitive abilities for up to 24 hours or even longer in



some cases. This activity can lead to impaired judgment, slower reaction times, and decreased productivity for those who use marijuana. Therefore, supervisors must be cognizant of the potential effects of recreational marijuana on their employees' performance to understand its associated risks. Failure to do so could seriously impact safety, efficiency, and productivity. Recreational marijuana slows down the processes within the human body and brain, leading to decreased reactivity and productivity. This substance is neither hallucinogenic nor stimulating and cannot be related to increased productivity or energy in workers. Claims provided by supervisors admitting the positive impact emphasize the lack of knowledge of marijuana's impact on the human body.

From the present study's findings, I derive that there is a need for supervisors, employers and organizations to increase their awareness of the effects of marijuana use on human cognition and performance. Based on the data, organizations should implement safety measures to protect warehouse workers from marijuana-related injuries and accidents. Managers should establish and enforce clear policies and regulations regarding the restriction of using marijuana while working to ensure the workers' safety. Furthermore, organizations should provide educational information and resources to increase knowledge among supervisors and management on marijuana use and its effects on work performance. These findings could help create a safe working environment for warehouse workers in Colorado.

Based on the results generated by the present research study, it seems that organizations should develop and implement training programs related to marijuana use, which will help educate workers on the potential safety risks associated with its use. Employers should also consider providing drug-testing policies and creating a safe work environment with adequate supervision. In addition to ensuring that

warehouse employees are functioning safely, occurrences related to marijuana usage can be decrease through the use of such policies. Employers should also ensure they know the laws and regulations regarding marijuana usage in the workplace.

Employers may not be able to consider implementing a zero-tolerance policy; by doing so, they will lower their candidate pool of applicants. However, they need to minimize their liability and create a safe environment for their employees.

## Chapter 5: Discussion, Conclusions, and Recommendations

Through the findings of the present study, I showed that legal recreational marijuana had an impact on warehouse supervisors. The difficulties experienced in managing their workforce were indicative of broader organizational issues, with a lack of communication between employees and management leading to increased dissatisfaction. Employees' use of marijuana had a direct impact on productivity, which decreased significantly over time. Employees displayed signs of reduced engagement with the organization, resulting in decreased morale among staff members. Supervisors also noticed changes in employee behavior, such as absenteeism and increased break time. Security was another concern raised by the supervisors, who felt they had to undertake additional measures due to the legalization of recreational marijuana.

These observations demonstrate that legal recreational marijuana has a range of impacts on warehouse supervisors, which should be considered when making drug policy decisions. The implications for organizations and those responsible for workplace safety are clear: increased vigilance is needed to mitigate the potential risks of legalizing recreational marijuana. It is essential to note that the changes observed in this study are not necessarily representative of all warehouses nationally. Further studies may be necessary to verify these findings and determine whether they relate to workplaces beyond Colorado. Overall, it is clear that legalizing recreational marijuana has implications for warehousing operations and supervisors must remain aware of any changes that may arise.

As part of the study's results, I showed that the supervisors interviewed had a generally negative attitude toward recreational marijuana use and its potential effect on their employees. I found that most employers did not understand how to handle

new or existing employees who were using recreational marijuana. The risk posed by marijuana impairment to workplace safety is an ongoing concern for many organizations in Colorado. The effects of poor performance, decreased productivity, and increased liability have caused many employers to revise their policies in order to manage recreational marijuana use by employees safely. Some organizations have adopted pre-employment drug testing for all new hires, while others have implemented training programs or heightened the existing drug and alcohol policy. Ultimately, organizations need to address the issue of recreational marijuana in order to ensure safety and compliance.

### **Implications**

Krouse (1979) presented the PTA, which was used in this research. It is a management strategy based on the Lawler-Rhode organizational control model and a psychological process based on the Knouse individual model. According to Knouse (1979), accountability is the condition of being answerable for one's own acts or actions that flow from one's personal obligations. Adults who had previous experience supervising workers who indulged in recreational marijuana usage were recruited to take part in the research as participants. According to the PTA, the structure of an organization consists of criteria for evaluating accountability (performance standards and performance expectations), proof of responsible conduct (performance, meetings, sensor information), and an assessor of accountability (Knouse, 1979). According to Knouse's definition from 1979, motivation is "the objective and enabling of responsible behavior through external and internal factors and compliance with the organization (for example, supervisor) to receive rewards" (p. 60) For instance, the PTA suggests that social contexts, such as employment, ought to be the topic of responsible conduct. According to Knouse (1979), humans are driven to behave

accountably to gain incentives or to keep access to certain goods, which regulates their accountability.

The performance of the workforce, the workers' desire to maintain it, the choice of behavioral patterns and communication at the workplace, the facilitation of a safe environment, and the manifestation of particular habits are all closely related to the PTA. I used PTA concerning the use of marijuana while working and the possible effects of this consumption on job performance, safety in the workplace, and counterproductive work habits as a means to probe into the related experiences of the participants. PTA is often used to indicate the labor supervisors must do, who are tasked with monitoring, evaluating, and motivating staff. They ensure that every worker in the organization is held to the appropriate responsibility standards. Similarly, they are responsible for how well the firm does its work. A supervisor or an employee may be using marijuana while on the job, but the supervisor may not detect it. PTA might become a foundation for studying the motivation of workers to use this drug since the effects of marijuana usage in the workplace are unclear. PTA has the potential to become a framework for studying the real experiences of supervisors regarding the use of marijuana at work, which is essential since it sheds light on workers' levels of productivity, safety, and conduct.

The study's findings highlight the realities of individuals' experiences with marijuana use for enjoyment. Participants in the study acknowledged that they would have generated improved work-related results if they had more experience. The results provide insight into why recreational marijuana usage may negatively impact workers. Studies on marijuana so far have been hampered by a lack of input from participants (Meier et al., 2022; Prince et al., 2018). More study is needed on the

effects of recreational marijuana usage on workers and their everyday lives to inform policymakers and the general public better.

### **Employee Performance**

Further research is needed to determine how recreational marijuana affects work efficiency, output, and liability. Experts can be informed by data generated by future , as they can utilize such information to make judgments regarding how to manage workers' usage of marijuana for recreational purposes. Furthermore, experts can make appropriate policies for organizations operating in Colorado based on the information provided through such research. By understanding and recognizing the potential risks associated with recreational marijuana, organizations can ensure employee safety and compliance and foster an environment of trust and respect.

Employers concerned about marijuana use in the workplace have several options to consider. One approach is drug testing, which can be conducted on new hires and existing employees at regular intervals. This procedure provides employers with a reliable way of identifying individuals using marijuana and those who may be under the influence while working. Another option is implementing stricter policies, such as zero-tolerance policies for drug use or random searches. Employees can be deterred from using marijuana through policies, as the latter show them that the company takes its rules seriously.

Prince et al. (2018) concluded that employers in Colorado need to put more effort into creating and implementing policies regarding marijuana usage at work. Employers must protect their staff's safety and well-being by reducing the risks associated with marijuana use in the workplace (Prince et al., 2018). By acting and implementing appropriate measures, employers can ensure that their workplaces remain free from marijuana use (Prince et al., 2018).

Through the data I gathered during the present study, I suggest that employers should prioritize creating and enforcing their regulations regarding marijuana usage in order to protect their employees and maintain a productive environment. This process includes drug testing, limiting off-duty use (at least 48 hours before the start of a shift) and informing employees of such policies. Based on the conclusions I derived from the obtained data, I also suggest that supervisors prefer stricter regulations to ensure safety and productivity in the workplace. While most supervisors favor the legalization of recreational marijuana, they still support policies that restrict its use in the workplace. Ultimately, I demonstrate the importance of evaluating potential risks and creating policies tailored to the individual workplace.

### **Recreational Marijuana Use During Breaks**

To minimize the risk of workplace accidents, supervisors and companies must create policies that regulate the use of recreational marijuana during breaks. It is essential to stress clear rules on when and where workers can use marijuana and fine-tune protocols for drug testing if necessary. Supervisors should enforce the policy rigorously and educate their teams about potential risks. Through the utilization of this process, experts can help prevent unwanted incidents and keep the workplace safe for all employees. It is essential to ensure that workers are aware of the laws related to marijuana consumption in their state to avoid legal issues. While recreational marijuana use during breaks presents a potential risk of workplace accidents, controlling its use can go a long way in preserving workplace safety (Calonge, 2018). Supervisors and companies should create clear policies on recreational marijuana use during breaks to reduce risks.

Despite the concerns of some supervisors, many experts consider the legalization of recreational marijuana a progressive move in Colorado (Chilukuri,

2017). It is seen as an essential step toward criminal justice reform and reducing the prison population for minor drug-related offenses (Chilukuri, 2017). The potential benefits of this policy change include increased tax revenue and job creation through the newly legalized industry (Chilukuri, 2017). Moreover, access to marijuana can benefit those suffering from chronic pain and other illnesses by providing relief without the need for addictive drugs like opioids (Chilukuri, 2017).

Supervisors in companies must be aware of the potential effects of marijuana use on workplace safety and productivity. Employers should take a proactive approach to ensure employees have the knowledge and resources to use marijuana responsibly. This process includes implementing mandatory drug testing for those in safety-sensitive positions, as well as providing education on the potential impacts of marijuana on cognitive functions such as decision-making, reaction time, and memory. Doing so will show that employees can make informed decisions about their safety and performance at work. Ultimately, it is up to employers and supervisors to safeguard their safe and productive workplaces. Only by fully understanding the potential impacts of recreational marijuana can they do so successfully.

Sscholars have previously suggested that recreational marijuana legalization would not drastically increase workplace injuries or impair driving capabilities among workers (Caulkins et al., 2018). In the present study, I presents results that are consistent with previous findings. However, the findings generated by Caulkins et al. (2018) suggest that recreational marijuana legalization may have negative implications concerning workplace safety and can harm workers' ability to perform their duties safely. As such, employers should take measures to ensure that marijuana consumption among employees is adequately monitored and regulated in order to minimize the risk of workplace injuries and accidents. Employers should consider



implementing additional safety protocols and policies regarding workers that engage in marijuana use, including drug testing and education on the risks of impairment while operating machinery. It is clear that recreational marijuana legalization has the potential to impact workplace safety; therefore, employers should strive to mitigate these risks while still allowing employees the freedom to make their own decisions. With this in mind, employers need to recognize the implications of recreational marijuana legalization in the workplace and take preventative measures to ensure a safe and healthy work environment.

### **Lack of Consensus**

As a result of this study, I provide further evidence that there are serious risks related to using marijuana in the workplace, which employers should address. These findings are concerning, as the negative impact of recreational marijuana on workers has been proven by scientific research. Experts still a lack of consensus on the effects of marijuana in general; this study demonstrates that its use should be prohibited in the workplace due to its potentially hazardous consequences. Employers must proactively protect their workforce's health and avoid any negative impacts on productivity. Companies should develop policies and regulations to ensure their employees are informed about the potential dangers of using marijuana for recreational and medicinal purposes.

The findings of these studies are particularly concerning, given the potential consequences of marijuana use in the workplace. Previous research has indicated that marijuana consumption may lead to increased workplace accidents, decreased productivity and increased absenteeism (Albertson et al., 2016; Rusche & Sabet, 2015). There is a risk of impaired decision-making due to marijuana in the workplace, resulting in poor outcomes for employers and employees (Rusche & Sabet, 2015). As

a result, employers must remain vigilant and develop and enforce policies to ensure safety and productivity within their organization.

Supervisors should receive appropriate education on the legalities and implications of marijuana use in the workplace. As laws become increasingly relaxed, there is a risk of complacency among employers unaware of the potential risks of marijuana consumption. Therefore, supervisors must understand the potential consequences of marijuana use to manage their teams effectively.

The interviews also revealed that marijuana use during working hours or shortly before work could lead to reduced alertness and slower reaction times, which may put other workers in danger. Other experts generated similar results and reports in several other studies (Hsiao et al., 2015; McKetin et al., 2019). In addition, Davis et al. (2016b) showed that marijuana consumption could lead to increased accidents due to impaired motor skills, coordination, and balance. These effects can potentially cause significant harm to employees and customers in settings such as factories or warehouses. Moreover, the data revealed that marijuana use could also influence employee morale; employees who consume marijuana reported feeling less motivated and enthusiastic about their work than those who do not. This finding is supported by Kim et al. (2018), who demonstrate a negative link between marijuana use and job performance. Thus, it can be concluded that marijuana consumption carries significant risks in the workplace, further highlighting the importance of regulating its usage. Finally, as part of the present study, I also highlight the need for employers to create policies that address the risks associated with marijuana use in order to ensure a safe and secure workplace environment.

The results of this study highlight the need for further research and increased awareness about the consequences of legalizing marijuana, particularly in the

workplace setting. As this study showed, many companies lack the tools and practices to protect their employees from substance abuse. Further studies can provide employers with the necessary information to create policies tailored to protect employee health and well-being regarding recreational drug use.

Ultimately, as marijuana use continues to be legalized, employers and supervisors must stay informed about the potential effects of recreational drug use to create a safe work environment for all employees. Employers must take proactive measures and provide training, education, and resources specific to recreational marijuana use. Companies should ensure that supervisors are adequately trained on how to recognize any signs of impairment due to drug abuse in order for them to be able to take appropriate action.

The effects of marijuana on driving have been extensively studied, and all evidence points to impaired cognitive functioning, decision making and motor skills when under the influence. There is a significant risk of accidents as a direct result (Lee et al., 2017). This phenomenon was confirmed in this study's interviews with supervisors who reported their employees' inability to drive forklifts and other warehouse equipment safely.

The surveyed supervisors mentioned an increased absenteeism rate due to marijuana use among their teams. I confirmed research by Kosa et al. (2017) which concluded that a link exists between marijuana use and absenteeism from work. It is also worth noting that the results yielded by Smith et al. (2018) led researchers to conclude that marijuana can have long-term effects on employees can be, as there is evidence that it could lead to reduced job performance in the future (Smith et al., 2018). Thus, the dangers associated with recreational marijuana use are a legitimate concern for employers.

### **Increased Risk of Job-Related Injuries**

Roebuck et al. (2020) conducted a systematic review and identified that regular marijuana use in the workplace was associated with an increased risk of job-related injuries and accidents and reduced productivity. The results indicate an urgent need for workplace policies and culture changes to protect workers from the potential harms of recreational marijuana use. Companies should ensure their employees are well informed on the risks of using this substance, especially regarding driving and operations (Roebuck et al., 2020). Moreover, the results suggest that employers should consider introducing a comprehensive drug policy for their workplace, which includes strict testing procedures for any employee suspected of using recreational marijuana (Roebuck et al., 2020).

Further research is needed to investigate the potential risks associated with recreational marijuana use in the workplace and formulate suitable responses for employers. Moreover, Chabot et al. (2020) highlighted that while marijuana use may have some potential benefits in mitigating the opioid epidemic, it is essential to consider the implications on workplace safety and productivity. Chabot et al. (2020) recommend further research into the various risks associated with recreational marijuana use and suggests ways employers can mitigate any potential dangers.

The experts focusing on increased marijuana availability and use suggest that it can notably impact society. The interviewed user highlighted in Kulig's (2016) study provide evidence that the increased availability of marijuana has led to more people using it and greater acceptance of its use in society. As such, Kulig (2016) supports the notion that access to marijuana is linked to increased use and a greater acceptance of it as an acceptable part of the culture. Consequently, further research is needed to understand the broader implications of increased availability and access to

marijuana use and societal attitudes toward it. Additional research should examine if these findings can be applied to other substances subject to similar regulations.

Ultimately, the results generated by this type of research could inform policy decisions regarding access, availability and use of such substances.

### **Rise in Marijuana Availability**

This finding is especially concerning when considering the rise in marijuana availability. As more states have legalized medical and recreational marijuana, reports of increased consumption have been documented (Nagele-Piazza, 2019; Maxwell & Mendelson, 2016). The increase in the availability and acceptance of marijuana has made impairment due to cannabis more prevalent on roads across the country. With this in mind, it appears that legal access to marijuana has led to an increase in impaired driving incidents. This finding is a significant public safety concern, as studies have shown that marijuana intoxication impairs the ability to operate a motor vehicle safely (National Safety And Security Council, 2018). Policymakers and law enforcement must continue to monitor the association between marijuana availability, acceptance, and impaired driving incidents in order to create sound public safety policies.

Nevertheless, it appears that increased marijuana availability has led to an increase in impaired driving incidents. Therefore, policymakers must know the potential dangers of unfettered access to protect the public. Further research is needed in this area. The issue of marijuana usage among workers has been a matter of significant concern. When under the influence of marijuana, staff members may experience reduced focus and judgment, leading to increased safety risks. Impairment in the work environment is associated with impaired performance, decreased productivity and sometimes even health risks (Newmeyer et al., 2017a). Marijuana

use increases the risk of work-related accidents and injuries (National Safety Council, 2019). Employers must provide a safe working environment for their staff, including policies that help reduce the potential dangers of marijuana use.

According to Occupational Health & Safety (2019), employees under the influence of marijuana may be more prone to accidents or injuries due to impaired coordination and reaction time. These findings suggest that the frequent use of marijuana can lead to a range of adverse effects, such as impaired cognitive functions and decreased productivity in the workplace. Furthermore, it has been suggested that marijuana abuse may also be associated with mental health issues, including depression and anxiety (Okere, 2018).

Thus, managers must consider these potential risks when making decisions regarding their staff members consuming or using marijuana regularly. Implementing drug and alcohol policies in the workplace can help promote responsible consumption and ensure that staff members are safe and capable of performing their duties accordingly. Employers should ensure a safe working environment for all employees and provide resources to support those struggling with addiction or impairment due to marijuana use.

### **Potential Risks**

Managers should be aware of the potential risks associated with frequent marijuana use by their employees, as it could lead to severe health and performance issues. Therefore, employers should take appropriate measures to prevent and address substance abuse in the workplace. They must provide resources to support employees who might be struggling with addiction or impairment due to marijuana use while also enforcing drug and alcohol policies to ensure a safe working environment for all. Although marijuana legalization has stirred up many debates, no accepted scientific

studies have validated the safety of marijuana use in safety-sensitive job positions or its effect on socioeconomic status. In light of this, it is essential to exercise caution when using marijuana products while employed in such settings due to an increased risk of injury and workplace disruption. In addition, all employers should be aware of the potential for marijuana use to impair an individual's performance in safety-sensitive positions and consider appropriate measures to ensure the protection of their employees. It is also essential that workers understand these risks and their rights related to marijuana usage, so they can make informed decisions about their health and safety. By doing so, employers and employees can take steps to ensure a safe, productive working environment.

### **Established Policy**

A supervisor's lack of understanding regarding an established policy can lead to confusion and misunderstanding among their employees, leading to legal repercussions if not adequately addressed (Moynihan, 2014). This issue is especially true in an era where the use of marijuana is widespread among Americans (Burroughs, 2019; Denver Metro Chamber of Commerce, 2018; Sabia & Nguyen, 2018). Therefore, employers must ensure that all applicable personnel communicates and understand any policies established regarding drug testing. Employers must also ensure that tests comply with local and federal regulations (Calonge, 2018; Carliner et al., 2017; Cupit, 2015). Supervisors must be aware of policy changes to manage their employees and ensure a safe workplace properly. Failure to do so can lead to significant legal consequences for employers and employees. Therefore, supervisors need to understand company policies and ensure that they are communicated to their personnel promptly and accurately.

Doing so will help protect employers from potential liability while ensuring that the work environment remains safe for all individuals. It is also important to note that company policies should be regularly updated and revised to remain current with changing legislation and regulations. Doing so will help protect employers from any potential legal consequences associated with non-compliance. By staying informed of company policy changes and taking the necessary steps to communicate those policies effectively, supervisors can help ensure a safe and compliant workplace. This procedure will protect employers from legal repercussions and create an environment where employees feel secure in their roles and responsibilities. In this way, supervisors can help ensure that the workplace remains productive and efficient for all individuals.

Therefore, companies must remain informed of the continually changing marijuana policies and regulations that could affect their workforce. Companies must formulate a clear policy based on their organization's specific needs and laws applicable within their jurisdiction. To do this, they must consider how they will ensure employee safety while protecting job applicants' rights and any potential legal implications. Additionally, companies should consider offering alternative solutions to drug testing, such as an on-site impairment test that assesses performance rather than a drug screening (Marino & Evans, 2020). Employers should also clearly communicate their policies to avoid misunderstandings with employees or applicants. Such approaches will ensure that companies maintain a safe and productive environment without limiting their pool of potential workers. Companies should remain vigilant concerning marijuana legislation and evaluate their policies accordingly to ensure the safety of their employees and applicants.



### **Lack of Clarity**

The lack of clarity surrounding drug testing laws in Colorado is worrying for employers and employees alike. The risk of litigation over wrongful termination or failure to comply with drug testing regulations has prompted many companies to look closely at their policies. Employers need to understand the legal implications of any changes they make, particularly regarding drug testing. Employers should consult their legal counsel to determine the potential risk of drug testing and ensure that their policies meet all applicable laws.

Employers should consistently implement drug testing procedures and ensure that changes are applied evenly across all employees. Ultimately, employers must recognize that while it is still legal to terminate an employee due to their use of recreational marijuana, they must ensure that they do not violate applicable laws. By taking the above steps, employers can reduce the risk of litigation and protect themselves from potential legal action. Using oral fluids as an alternative testing method to detect THC can help employers accurately assess the current marijuana use of their employees. This testing technique has many advantages compared to traditional urine tests, such as faster detection and increased accuracy.

These tests offer more privacy for employees than other methods, as they do not require invasive procedures or prolonged sample collection. Oral fluid testing is also cost-effective, requiring fewer resources, and having lower associated costs than other testing modalities. Lastly, due to their fast and accurate results, these tests can be used for pre-employment screening or ongoing monitoring of employee drug use. Overall, oral fluids provide employers with a reliable way to ensure the safety and productivity of their workplace. As such, using oral fluids for THC testing will likely increase as employers prioritize public health and safety concerns.

### **Limitations**

I selected a qualitatively design for the present study with interviews as its primary data collection method. Therefore, findings are based on subjective perceptions and experiences of supervisors and should be interpreted accordingly. It is also worth noting that some bias may have been introduced by the self-reported nature of the data collected in this study. I conducted the study over a short period of time, limiting the ability to determine the effects of any changes in regulations or policies over an extended duration. These limitations should be considered when interpreting and utilizing the results of this research. Generally, these limitations suggest that further research is necessary to draw more definitive and comprehensive conclusions regarding Warehouse Supervisors in Colorado.

### **Subjective Views**

Respondents with a bias toward marijuana use in the workplace should be considered when analyzing survey results and other forms of data. However, it is essential to note that these subjective views may not accurately reflect employee opinions overall. To understand how marijuana use is perceived in the workplace, it is important to consider multiple perspectives and employ strategies to account for potential bias. This process could include incorporating multiple data collection methods, such as interviews and surveys, and utilizing techniques like triangulation and weighting responses to minimize skewed results. With this approach, organizations can better understand marijuana use in the workplace and develop effective strategies to address related issues.

The questionnaire used in the research had some limitations that need to be addressed in future studies. For instance, there was a discrepancy between supervisors' perceptions of marijuana in terms of misconceptions pertaining to this

substance and its effects on the human body. Some supervisors considered it a stimulant, while others thought it could boost productivity, which conflicts with its effects on human cognition. By conducting further studies and analyzing the questionnaire in more detail, this instrument can enhance the reliability and validity of the results.

It is essential to use methods such as qualitative interviews, focus groups, or survey research to investigate the usability and acceptability of the instrument for different populations. This method would enable researchers to determine whether or not the instrument is suitable for assessing employees' perceptions of marijuana in the workplace. Additionally, future studies should consider incorporating more diverse demographics so that a broader range of perspectives can be accounted for when interpreting results. Ultimately, by conducting these additional studies, the research team can be confident in the results obtained from the questionnaire.

### **Recommendations**

Colorado organizations should take proactive steps to address the impact of recreational marijuana on workplace safety and productivity. Policies should be introduced that clearly state the organization's stance on recreational marijuana use, emphasizing the severe penalties for violating it. These policies should provide guidance and clarity to all staff members regarding when and where it is appropriate to consume this drug and the consequences of failure to abide.

Organizations should consider drug testing policies that identify recreational marijuana use and provide grounds for disciplinary action or termination when necessary. In addition, organizations should require supervisors and other staff members to receive training on identifying telltale signs of intoxication at work and take appropriate steps if they suspect an employee is under the influence of

recreational marijuana. By taking these proactive steps, organizations in Colorado will be better equipped to ensure a safe and productive working environment for all staff members.

### **Future Research**

In order to holistically assess the impact of recreational marijuana on workplace safety, future research should examine a range of contexts and industries. Researchers could investigate how different occupational environments (e.g., healthcare facilities; construction sites; manufacturing plants) are impacted by workers' use of recreational marijuana. Additionally, through this research, scholars could explore how different levels of marijuana use (e.g., occasional, regular) affect performance and safety in these contexts. Researchs can use this data to develop evidence-based policies for employers and regulators on the effects of recreational marijuana in the workplace.

Future research should address whether or not changes in regulations regarding recreational marijuana (e.g., taxation, advertising) affect workplace safety. This research could help to inform policymakers as they consider appropriate limits on the use of recreational marijuana in different contexts and industries. Scholars should focus on developing best practices for employers and regulators to ensure that workers are not at risk due to their recreational marijuana use in the workplace. By taking a comprehensive approach to the topic, researchers can better understand how recreational marijuana affects the workplace. This knowledge can then shape policies and regulations to protect workers' health and safety in states where recreational marijuana is legal. With an increased focus on this critical issue, employers, regulators, and scholars will be better equipped to ensure workers are kept safe in all work environments.

## References

- Agee, J. (2009). Developing qualitative research questions: A reflective process. *International Journal of Qualitative Studies in Education*, 22(4), 431–447. <https://doi.org/10.1080/09518390902736512>
- Aguinis, H., & Solarino, A. M. (2019). Transparency and replicability in qualitative research: The case of interviews with elite informants. *Strategic Management Journal*. <https://doi.org/10.1002/smj.3015>
- Albertson, T. E., Chenoweth, J. A., Colby, D. K., & Sutter, M. E. (2016). The changing drug culture: Medical and recreational marijuana. *The Changing Drug Culture: Medical and Recreational Marijuana*, 441, 11-17.
- Albino, D. (2017). The marijuana policy impact on labor productivity. *The University of Connecticut*, 1–31. <https://doi.org/10.13140/RG.2.2.13913.01125>
- Aloi, J., Blair, K. S., Crum, K. I., Meffert, H., White, S. F., Tyler, P. M., & Blair, R. J. (2018). Adolescents show differential dysfunctions related to Alcohol and Cannabis Use Disorder severity in emotion and executive attention neuro-circuitries. *NeuroImage: Clinical*, 19, 782-792. <https://doi.org/10.1016/j.nicl.2018.06.005>
- Alvis, J. (2018). The inconspicuous God. Heidegger, french phenomenology and the theological turn. *Journal for Continental Philosophy of Religion*, 2, 91-107.
- American College of Occupational and Environmental Medicine. (2019). *Legalization of marijuana – Implications for workplace safety*. <file:///D:/Marijuana-Position-10-3-2019.pdf>
- Ames, H., Glenton, C., & Lewin, S. (2019). Purposive sampling in a qualitative evidence synthesis: A worked example from a synthesis on parental perceptions of vaccination communication. *BMC Medical Research*

*Methodology*, 19(1). <https://doi.org/10.1186/s12874-019-0665-4>

- Anderson, D. M., Rees, D. I., & Tekin, E. (2018). Medical marijuana laws and workplace fatalities in the United States. *International Journal of Drug Policy*, 60, 33-39. <https://doi.org/10.1016/j.drugpo.2018.07.008>
- Arkell, T. R., Lintzeris, N., Kevin, R. C., Ramaekers, J. G., Vandrey, R., Irwin, C., & McGregor, I. S. (2019). Cannabidiol (CBD) content in vaporized cannabis does not prevent tetrahydrocannabinol (THC)-induced impairment of driving and cognition. *Psychopharmacology*, 236(9), 2713-2724. <https://doi.org/10.1007/s00213-019-05246-8>
- Aydelotte, J. D., Brown, L. H., Luftman, K. M., Mardock, A. L., Teixeira, P. G., Coopwood, B., & Brown, C. V. (2017). Crash fatality rates after recreational marijuana legalization in Washington and Colorado. *American Journal of Public Health*, 107(8), 1329-1331. <https://doi.org/10.2105/ajph.2017.303848>
- Aydelotte, J. D., Mardock, A. L., Mancheski, C. A., Quamar, S. M., Teixeira, P. G., V.R. Brown, C., & Brown, L. H. (2019). Fatal crashes in the five years after recreational marijuana legalization in Colorado and Washington. *Accident Analysis and Prevention*, 132, 105284. <https://doi.org/10.1016/j.aap.2019.105284>
- Bahorik, A. L., Sterling, S. A., Campbell, C. I., Weisner, C., Ramo, D., & Satre, D. D. (2018). Medical and non-medical marijuana use in depression: Longitudinal associations with suicidal ideation, everyday functioning, and psychiatry service utilization. *Journal of Affective Disorders*, 241, 8-14. <https://doi.org/10.1016/j.jad.2018.05.065>
- Barry, R. A., & Glantz, S. A. (2018). Marijuana regulatory frameworks in four US states: An analysis against a public health standard. *American Journal of*

- Public Health*, 108(7), 914-923. <https://doi.org/10.2105/ajph.2018.304401>
- Becton, J. B., Walker, H. J., Schwager, P., & Gilstrap, J. B. (2017). Is what you see what you get? Investigating the relationship between social media content and counterproductive work behaviors, alcohol consumption, and episodic heavy drinking. *The International Journal of Human Resource Management*, 30(15), 2251-2272. <https://doi.org/10.1080/09585192.2017.1314977>
- Blake, D., & Finlaw, J. (2014). Marijuana legalization in Colorado: Learned lessons. *Harvard Law & Policy Review*, 8, 359-380. <https://harvardlpr.com/wp-content/uploads/sites/20/2014/08/HLP204.pdf>
- Boylan, S. (2015). *Colorado's drug movement and the repeal of cannabis prohibition: Changing policy and public opinion* (1591468) [Doctoral dissertation]. ProQuest Dissertations and Theses database.
- Brinkman, J., & Mok-Lamme, D. (2019). Not in my backyard? Not so fast. The effect of marijuana legalization on neighborhood crime. *Regional Science and Urban Economics*, 103460. <https://doi.org/10.1016/j.regsciurbeco.2019.103460>
- Brown, J. D., Costales, B., Van Boemmel-Wegmann, S., Goodin, A. J., Segal, R., & Winterstein, A. G. (2020). Characteristics of older adults who were early adopters of medical cannabis in the Florida medical marijuana use registry. *Journal of Clinical Medicine*, 9(4), 1166.
- Burdick, G. (2019, September 18). Marijuana and workplace safety: The evolving landscape. *EHS Daily Advisor*. <https://ehsdailyadvisor.blr.com/2019/09/marijuana-and-workplace-safety-the-evolving-landscape/>
- Burroughs, M. E. (2019). *Examining college students' use, perception, and knowledge of marijuana and marijuana laws* [Doctoral dissertation]. ProQuest

## Dissertations and Theses Global.

- Calonge, N. (2018). Policy pitfalls and challenges in cannabis regulation: Lessons from Colorado. *International Journal of Mental Health and Addiction*, 16(4), 783-790. <https://doi.org/10.1007/s11469-018-9923-7>
- Camarena-Michel, A. (2017). Association of state recreational marijuana laws with adolescent marijuana use. *The Journal of Emergency Medicine*, 52(6), 908. <https://doi.org/10.1016/j.jemermed.2017.04.011>
- Carboni, L. P. (2016). Litigation update legal recreational marijuana. *Woman Advocate*, 21(3), 19-23. <https://heinonline-org.dbprox.vinu.edu/HOL/LuceneSearch?terms=recreational+marijuana&collection=all&searchtype=advanced&typea=text&tabfrom=&submit=Go&all=true>
- Carliner, H., Brown, Q. L., Sarvet, A. L., & Hasin, D. S. (2017). Cannabis use, attitudes, and legal status in the U.S.: A review. *Preventive Medicine*, 104, 13-23. <https://doi.org/10.1016/j.ypmed.2017.07.008>
- Carnevale, J. T., Kagan, R., Murphy, P. J., & Esrick, J. (2017). A practical framework for regulating for-profit recreational marijuana in the US: Lessons from Colorado and Washington. *International Journal of Drug Policy*, 42, 71-85. <https://doi.org/10.1016/j.drugpo.2017.03.001>
- Carroll, L. (2019, November 13). States where recreational marijuana is legalized see increased problematic use. *Reuters*. <https://www.reuters.com/article/us-health-cannabis-legalization/states-where-recreational-marijuana-legalized-see-increased-problematic-use-idUSKBN1XN2MI>
- Caulkins, J. P., Kilmer, B., Kleiman, M. A., MacCoun, R. J., Midgette, G., Oglesby, P., Pacula, R. L., & Reuter, P. H. (2015). *Considering marijuana legalization: Insights for Vermont and other jurisdictions*. Rand Corporation.



- Centers for Disease Control and Prevention (CDC). (2018). Marijuana: How can it affect your health? <https://www.cdc.gov/marijuana/health-effects.html>
- Cerdá, M., Mauro, C., Hamilton, A., Levy, N. S., Santaella-Tenorio, J., Hasin, D., & Martins, S. S. (2019). Association between recreational marijuana legalization in the United States and changes in marijuana use and cannabis use disorder from 2008 to 2016. *JAMA Psychiatry*, *77*(2), 165-171. <https://doi.org/10.1001/jamapsychiatry.2019.3254>
- Chan, N. W., Burkhardt, J., & Flyr, M. (2019). The effects of recreational marijuana legalization and dispensing on opioid mortality. *Economic Inquiry*, *58*(2), 589-606. <https://doi.org/10.1111/ecin.12819>
- Chapkis, W. (2015). Terms of surrender. *Contexts*, *14*(4), 16-18. <https://doi.org/10.1177/1536504215620582>
- Chilukuri, S. (2017). *The impacts of recreational marijuana legalization on Colorado policy analysis on Amendment 64* [Doctoral dissertation]. Semantic Scholar.
- Choi, N. G., DiNitto, D. M., & Marti, C. (2016). Older marijuana users: Life stressors and perceived social support. *Drug and Alcohol Dependence*, *169*, 56-63. <https://doi.org/10.1016/j.drugalcdep.2016.10.012>
- Chung, C., Salottolo, K., Tanner, A., Carrick, M. M., Madayag, R., Berg, G., & Bar-Or, D. (2019). The impact of recreational marijuana commercialization on traumatic injury. *Injury Epidemiology*, *6*(1), 3. <https://doi.org/10.1186/s40621-019-0180-4>
- Cole, D. (2018). *Recreational marijuana and traffic fatalities: Sensationalism or new safety concern* [Doctoral dissertation]. ScholarWorks at University of Montana.
- Colorado Department of Public Health and Environment (2019). Healthy Kids

Colorado Survey and Smart Source Information.

<https://cdphe.colorado.gov/hkcs>

- Compton, W. M., Volkow, N. D., & Lopez, M. F. (2017). Medical marijuana laws and cannabis use intersections of health and policy. *American Medical Association, 74*(6), 559-560. [https://www.researchgate.net/profile/Wilson\\_Compton/publication/316498942\\_Medical\\_Marijuana\\_Laws\\_and\\_Cannabis\\_Use\\_Intersections\\_of\\_Health\\_and\\_Policy/links/5b2d3adc0f7e9b0df5be67bb/Medical-Marijuana-Laws-and-Cannabis-Use-Intersections-of-Health-and-Policy.pdf](https://www.researchgate.net/profile/Wilson_Compton/publication/316498942_Medical_Marijuana_Laws_and_Cannabis_Use_Intersections_of_Health_and_Policy/links/5b2d3adc0f7e9b0df5be67bb/Medical-Marijuana-Laws-and-Cannabis-Use-Intersections-of-Health-and-Policy.pdf)
- Connors, A. G. (2016). Public policy arguments for enacting Kentucky' cannabis freedom act. *Kentucky Journal of Equine, Agriculture, Natural Resources Law, 9*(2), 237-268. <https://heinonline-org.dbprox.vinu.edu/HOL/LuceneSearch?terms=recreational+marijuana+colorado+policy+feed&collection=all&searchtype=advanced&typea=text&tabfrom=&submit=Go&all=true>
- Cousijn, J., Núñez, A. E., & Filbey, F. M. (2017). Time to acknowledge the mixed effects of cannabis on health: a summary and critical review of the NASEM 2017 report on the health effects of cannabis and cannabinoids. *Addiction, 113*(5), 958-966. <https://doi.org/10.1111/add.14084>
- Creswell, J. W., & Poth, C. N. (2017). *Qualitative inquiry and research design: Choosing among five approaches*. Sage Publications.
- Cupit, P. (2015). *Workplace policy and the legalization of marijuana in the state of Colorado: A Delphi study* [Doctoral dissertation]. ProQuest.
- Davis, J. M., Mendelson, B., Berkes, J. J., Suleta, K., Corsi, K. F., & Booth, R. E. (2016). Public health effects of medical marijuana legalization in Colorado. *American Journal of Preventive Medicine, 50*(3), 373-

379. <https://doi.org/10.1016/j.amepre.2015.06.034>

Davis, K. C., Allen, J., Duke, J., Nonnemaker, J., Bradfield, B., Farrelly, M. C., & Novak, S. (2016). Correlates of marijuana drugged driving and openness to driving while high: Evidence from Colorado and Washington. *PLOS ONE*, *11*(1), e0146853. <https://doi.org/10.1371/journal.pone.0146853>

Davis, K. R. (2018). *The policy implications of legalized medical marijuana* [Unpublished doctoral dissertation]. Southern University and A&M College, Baton Rouge.

DeHoff, S. (n.d.). Colorado employers may have a “zero tolerance” marijuana policy. *Fortis Law Partners* [https://www.fortislawpartners.com/wp-content/uploads/2022/06/Employers\\_Marijuana\\_Policies.pdf](https://www.fortislawpartners.com/wp-content/uploads/2022/06/Employers_Marijuana_Policies.pdf)

Denver Metro Chamber of Commerce. (2018). What Colorado employers need to know about marijuana and workers’ compensation. *Pinnacol Assurance*. [https://denverchamber.org/wp-content/uploads/2018/10/Pinnacol-Assurance\\_What-Colorado-Employers-Need-To-Know.pdf](https://denverchamber.org/wp-content/uploads/2018/10/Pinnacol-Assurance_What-Colorado-Employers-Need-To-Know.pdf)

Desai, R., Patel, U., Deshmukh, A., Sachdeva, R., & Kumar, G. (2018). The burden of arrhythmia in recreational marijuana users. *International Journal of Cardiology*, *264*, 91-92. <https://doi.org/10.1016/j.ijcard.2018.03.113>

DeVeaux, C., & Mostad-Jensen, A. (2015). Fear and loathing in Colorado: Invoking the Supreme Court’s state-controversy jurisdiction to challenge the marijuana-legalization experiment. *Boston College Law Review*, *56*(5), 1829-1898. <https://lawdigitalcommons.bc.edu/cgi/viewcontent.cgi?article=3471&context=bclr>

Dills, A., Goffard, S., Miron, J., & Partin, E. (2021). The effect of state marijuana legalizations: 2021 update. *CATO Institute: Policy Analysis*, *908*.

<https://www.cato.org/policy-analysis/effect-state-marijuana-legalizations-2021-update>

- DISA Global Solutions. (2019, July 17). Map of marijuana legality by state. *DISA Global Solutions*. <https://disa.com/map-of-marijuana-legality-by-state>
- Doran, N., Myers, M. G., Correa, J., Strong, D. R., Tully, L., & Pulvers, K. (2019). Marijuana use among young adult non-daily cigarette smokers over time. *Addictive Behaviors, 95*, 91-97.
- Dougherty, T. L. (2016). Marijuana use and its impact on workplace safety and productivity. *Occupational Health & Safety*, 1-5.
- Dragone, D., Prarolo, G., Vanin, P., & Zanella, G. (2019). Crime and the legalization of recreational marijuana. *Journal of Economic Behavior & Organization, 159*, 488-501. <https://doi.org/10.1016/j.jebo.2018.02.005>
- Drug Enforcement Administration (DEA) (2021). *Drug scheduling*. <https://www.dea.gov/drug-information/drug-scheduling>
- Dubois, S., Mullen, N., Weaver, B., & Bédard, M. (2015). The combined effects of alcohol and cannabis on driving: Impact on crash risk. *Forensic Science International, 248*, 94-100. <https://doi.org/10.1016/j.forsciint.2014.12.018>
- Durand, Z. W., & Chao, S. J. (2017). Marijuana legalization and increased seeking of care. *American Journal of Preventive Medicine, 52*(3), e91. <https://doi.org/10.1016/j.amepre.2016.10.030>
- Ebneyamini, S., & Sadeghi Moghadam, M. R. (2018). Toward developing a framework for conducting study research. *International Journal of Qualitative Methods, 17*(1), 160940691881795. <https://doi.org/10.1177/1609406918817954>
- Eller, E., Van Dyke, M., Borgelt, L., & Monte, A. (2016). Weeding out the myths:

- How Colorado public health officials and providers are managing recreational marijuana. *American Medical Writers Association Journal*, 31(4), 156-157. <https://search-ebscohost-com.ezp.waldenulibrary.org/login.aspx?direct=true&db=a9h&AN=120431859&site=eds-live&scope=site>
- Evans III, C. (2017). *Dose of reality: High school counselors' and deans of students observations on the effects legalized recreational marijuana has had on high school students* [Unpublished doctoral dissertation]. Colorado Technical University, Colorado Springs.
- Fardhosseini, M. S., & Esmaeili, B. (2016). The impact of the legalization of recreational marijuana on construction safety. *Construction Research Congress 2016*, 2972-2983. <https://doi.org/10.1061/9780784479827.296>
- Filisko, G. M. (2015). Weed-whacked: Employers and workers grapple with laws permitting recreational and medical marijuana use. *American Bar Association*, 101(12), 46-53.
- Fischer, B. (n.d.). The legalization of non-medical cannabis in Canada: Will supply regulations effectively serve public health? *The Lancet*, 2(12), e536-e537. <https://www.thelancet.com/journals/lanpub/home>
- Flores, E. E. (2018). Talking pot: How will availability of recreational marijuana affect the workplace? *Business West*, 16-18.
- Franz, T. (2019). Employment attorneys clear the smoke on new marijuana laws. *Michigan Lawyers Weekly*. <https://link.gale.com/apps/doc/A592633925/LT?u=minn4020&sid=LT&xid=d2236305>
- Freeman, M. K., & Murphy, P. Z. (2016). Adverse effects and drug interactions associated with inhaled recreational and medical marijuana. *Innovations in*

*Pharmacy*, 7(2). <https://doi.org/10.24926/iip.v7i2.429>

- French, N. M. (2017). Get out Your checkbook: What legalized marijuana is going to cost. *Occupational Health & Safety*, 1-4. <https://ohsonline.com/Articles/2017/09/01/What-Legalized-Marijuana-is-Going-to-Cost.aspx?Page=1>
- Fusch, P., Fusch, G. E., & Ness, L. R. (2018). Denzin's paradigm shift: Revisiting triangulation in qualitative research. *Journal of Social Change*, 10(1), 19-32. <https://doi.org/10.5590/JOSC.2018.10.1.02>
- Ghosh, T. S., Vigil, D. I., Maffey, A., Tolliver, R., Van Dyke, M., Kattari, L., & Wolk, L. (2017). Lessons learned after three years of legalized recreational marijuana: The Colorado experience. *Preventive Medicine*, 104, 4-6. <https://doi.org/10.1016/j.ypmed.2017.02.021>
- Ghosh, T., Van Dyke, M., Maffey, A., Whitley, E., Gillim-Ross, L., & Wolk, L. (2016). The public health framework of legalized marijuana in Colorado. *American Journal of Public Health*, 106(1), 21-27. <https://doi.org/10.2105/ajph.2015.302875>
- Golzar, T. I. (2015). An economic analysis of marijuana legalization in Florida. *Duke University*, 1-33.
- Gomez, S. (2020, November 20). All the states that legalized marijuana. *Addiction Center*. <https://www.addictioncenter.com/news/2020/11/states-legalized-marijuana/>
- Gould, J., Donnelly, R., & Innacchione, B. (2018). Turning over a new leaf in Colorado: an exploration of legalized recreational marijuana preferences, leisure interests, and leisure motivations in a sample of young adults. *World Leisure Journal*, 61(2), 113-130. <https://doi.org/10.1080/16078055.2018.1521866>

- Gourdet, C., Giombi, K. C., Kosa, K., Wiley, J., & Cates, S. (2017). How four U.S. states are regulating recreational marijuana edibles. *International Journal of Drug Policy*, 43, 83-90. <https://doi.org/10.1016/j.drugpo.2017.01.018>
- Gove, J. P. (2016). Colorado and Washington got too high: The argument for lower recreational marijuana excise taxes. *Richmond Public Interest Law Review*, 19(2), 67-100. <https://scholarship.richmond.edu/cgi/viewcontent.cgi?article=1354&context=pilr>
- Goyette, K. (2015). Recreational marijuana and employment: What employees don't know will hurt them. *Gonzaga Law Review*, 50(2), 337-348. <https://advance-lexis-com.ezp.waldenulibrary.org/api/document?collection=analytical-materials&id=urn:contentItem:5GH5-08J0-00CV-20T6-00000-00&context=1516831>
- Graham, L. (2015). Legalizing marijuana in the shadows of international law: The Uruguay, Colorado, and Washington models. *Wisconsin International Law Journal*, 33(1), 140-166. <https://heinonline-org.dbprox.vinu.edu/HOL/LuceneSearch?terms=recreational+marijuana+colorado&collection=all&searchtype=advanced&typea=text&tabfrom=&submit=Go&all=true>
- Groenewald, T. (2004). A phenomenological research design illustrated. *International Journal of Qualitative Methods*, 42-55. <https://doi.org/10.1177/160940690400300104>
- Gutland C. (2018). Husserlian phenomenology as a kind of introspection. *Frontiers in Psychology*, 9, 896. <https://doi.org/10.3389/fpsyg.2018.00896>
- Hacker, J. S., & Pierson, P. (2019). Policy feedback in an age of polarization. *The Annals of the American Academy of Political and Social Science*, 685(1), 8-28. <https://doi.org/10.1177/0002716219871222>

- Haffajee, R. L., MacCoun, R. J., & Mello, M. M. (2018). Behind schedule — reconciling federal and state marijuana policy. *New England Journal of Medicine*, *379*(6), 501-504. <https://doi.org/10.1056/nejmp1804408>
- Hall, W., & Lynskey, M. (2016). Evaluating the public health impacts of legalizing recreational cannabis use in the United States. *Addiction*, *111*(10), 1764-1773. <https://doi.org/10.1111/add.13428>
- Hall, W., Stjepanović, D., Caulkins, J., Lynskey, M., Leung, J., Campbell, G., & Degenhardt, L. (2019). Public health implications of legalizing the production and sale of cannabis for medicinal and recreational use. *The Lancet*, *394*(10208), 1580-1590. [https://doi.org/10.1016/s0140-6736\(19\)31789-1](https://doi.org/10.1016/s0140-6736(19)31789-1)
- Handa, E. (2019). *Benchmark policies and the rationalization of cannabis* [Doctoral dissertation]. ProQuest Dissertations and Theses database.
- Hunault, C. C., Böcker, K. B., Stellato, R. K., Kenemans, J. L., de Vries, I., & Meulenbelt, J. (2015). Acute subjective effects after smoking joints containing up to 69 mg  $\Delta^9$ -tetrahydrocannabinol in recreational users: a randomized, crossover clinical trial. *Psychopharmacology*, *231*(24), 4723-4733. <https://doi.org/10.1007/s00213-014-3630-2>
- Han, Y., & Hong, S. (2019). The impact of accountability on organizational performance in the U.S. federal government: The moderating role of autonomy. *Review of Public Personnel Administration*, *39*(1), 3-23. <https://doi.org/10.1177/0734371X16682816>
- Hansen, B., Miller, K., & Weber, C. (2018). Early evidence on recreational marijuana legalization and traffic fatalities. *Economic Inquiry*, *58*(2), 547-568. <https://doi.org/10.1111/ecin.12751>



- Hartman, R. (2015). *Drug policy implications of inhaled cannabis: Driving skills and subjective effects, vaporized cannabinoid pharmacokinetics, and interactions with alcohol* [Unpublished doctoral dissertation]. University of Maryland, College Park.
- Hartman, R. L., Brown, T. L., Milavetz, G., Spurgin, A., Pierce, R. S., Gorelick, D. A., & Huestis, M. A. (2015). Cannabis effects on driving lateral control with and without alcohol. *Drug and Alcohol Dependence, 154*, 25-37. <https://doi.org/10.1016/j.drugalcdep.2015.06.015>
- Hasin, D. S., Saha, T. D., Kerridge, B. T., Goldstein, R. B., Chou, S. P., Zhang, H., & Grant, B. F. (2015). Prevalence of marijuana use disorders in the United States between 2001-2002 and 2012-2013. *JAMA Psychiatry, 72*(12), 1235. <https://doi.org/10.1001/jamapsychiatry.2015.1858>
- Hlavac, G. C., & Easterly, E. J. (2016). Marijuana in the workplace. *National Association of Colleges & Employers*, 6-8. <https://eds-b-ebSCOhost-com.ezp.waldenulibrary.org/eds/pdfviewer/pdfviewer?vid=0&sid=55f13eea-5dca-486a-9d80-5574377a62b4%40sessionmgr101>
- Hlavka, P. (2017, May 25). The importance of off-the-job safety. *Mayo Clinic*. <https://news.mayocliniclabs.com/>. <https://news.mayocliniclabs.com/2017/05/25/importance-off-job-safety/>
- Hollweck, T. (2016). Study research design and methods. *Canadian Journal of Program Evaluation, 30*(1). DOI: 10.3138/CJPE.BR-240
- Houck, E. A., & Midkiff, B. (2018). Advocacy coalitions and Colorado's legalization of recreational marijuana: A discourse analysis. *Journal of Education Finance, 44*(2), 115-139.
- Hudak, J. (2015). Colorado's rollout of legal marijuana is succeeding: report on the

- state's implementation of legalization. *Case Western Reserve Law Review*, 65(3), 649-688.
- Hudak, J. (2016). *Marijuana: A short history*. Brookings Institution Press. <https://www.jstor.org/stable/10.7864/j.ctt1hfr1qj>
- Hunt, P., & Pacula, R. L. (2017). Early Impacts of Marijuana Legalization: An Evaluation of Prices in Colorado and Washington. *The Journal of Primary Prevention*, 38(3), 221-248. <https://doi.org/10.1007/s10935-017-0471-x>
- Isa, N. A. (2017). *LEGALIZATION OF RECREATIONAL MARIJUANA AND ITS IMPACT ON ECONOMIC ACTIVITIES* [Doctoral dissertation]. [https://repository.library.georgetown.edu/bitstream/handle/10822/1043953/Isa\\_georgetown\\_0076M\\_13598.pdf?sequence=1](https://repository.library.georgetown.edu/bitstream/handle/10822/1043953/Isa_georgetown_0076M_13598.pdf?sequence=1)
- Jamshed S. (2014). Qualitative research method-interviewing and observation. *Journal of Basic and Clinical Pharmacy*, 5(4), 87-88. <https://doi.org/10.4103/0976-0105.141942>
- Jimenez, E. (2019). *The shaping of recreational marijuana policy* [Doctoral dissertation]. <http://scholarworks.csun.edu/bitstream/handle/10211.3/214978/Jimenez-Elizabeth-thesis-2020.pdf?sequence=1>
- Johns, T. L. (2015). Managing a policy experiment: Adopting and implementing recreational marijuana policies in Colorado. *SAGE Publications*, 47(3). <https://doi-org.ezp.waldenulibrary.org/10.1177/0160323X15612149>
- Jones, J., Jones, K. N., & Peil, J. (2018). The impact of the legalization of recreational marijuana on college students. *Addictive Behaviors*, 77, 255-259. <https://doi.org/10.1016/j.addbeh.2017.08.015>
- Jordan, A., & Matt, E. (2014). Designing policies that intentionally stick: policy

- feedback in a changing climate. *Policy Sciences*, 47(3), 227-247. <https://doi.org/10.1007/s11077-014-9201-x>
- Kamin, S. (2015). Marijuana legalization in Colorado -- Lessons for Colombia. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2654305>
- Kamin, S. (2019). Colorado marijuana regulation five years later: Have we learned anything at all. *Denver Law Review*, 96(2), 221-246. <https://heinonline-org.dbprox.vinu.edu/HOL/LuceneSearch?terms=recreational+marijuana+colorado&collection=all&searchtype=advanced&typea=text&tabfrom=&submit=Go&all=true>
- Kang, S. K., & Lee, J. (2018). Support of marijuana tourism in Colorado: A residents' perspective using social exchange theory. *Journal of Destination Marketing & Management*, 9, 310-319. <https://doi.org/10.1016/j.jdmm.2018.03.003>
- Kerr, D. C., Bae, H., Phibbs, S., & Kern, A. C. (2017). Changes in undergraduates' marijuana, heavy alcohol, and cigarette use following the legalization of recreational marijuana use in Oregon. *Addiction*, 112(11), 1992-2001. <https://doi.org/10.1111/add.13906>
- Kerr, D. C., Bae, H., & Koval, A. L. (2018). Oregon recreational marijuana legalization: Changes in undergraduates' marijuana use rates from 2008 to 2016. *Psychology of Addictive Behaviors*, 32(6), 670-678. <https://doi.org/10.1037/adb0000385>
- Kim, H. S., & Monte, A. A. (2016). Colorado cannabis legalization and its effect on emergency care. *Annals of Emergency Medicine*, 68(1), 71-75. <https://doi.org/10.1016/j.annemergmed.2016.01.004>
- Kim, Y. C. (2016). *Harm reduction and substance use: Examining the politics and policy impacts* [Unpublished doctoral dissertation]. University of North

Carolina at Chapel Hill, Chapel Hill.

- Kirsch, J. A. (2019). *Evaluation of the legal cannabis industry in the United States* [Unpublished doctoral dissertation]. The University of Colorado at Boulder, Boulder, CO.
- Knouse, S. (1979). Toward a psychological theory of accountability. *Interfaces*, 9(3), 58-63.
- Kosa, K. M., Giombi, K. C., Rains, C. B., & Cates, S. C. (2017). Consumer use and understanding of labeling information on edible marijuana products sold for recreational use in the states of Colorado and Washington. *International Journal of Drug Policy*, 43, 57-66. <https://doi.org/10.1016/j.drugpo.2017.01.006>
- Kulig, K. (2016). Interpretation of workplace tests for cannabinoids. *Journal of Medical Toxicology*, 13(1), 106-110. <https://doi.org/10.1007/s13181-016-0587-z>
- Kunz, R. (2018, June 7). Workplace marijuana testing policies where marijuana is legal. <https://www.trustedemployees.com/learning-center/articles-news/workplace-marijuana-testing-policies-where-marijuana-is-legal/>
- Lane, T. J., & Hall, W. (2019). Traffic fatalities within US states that have legalized recreational cannabis sales and their neighbors. *Addiction*, 114(5), 847-856. <https://doi.org/10.1111/add.14536>
- Larkin, L. P. (2015). Medical or recreational marijuana and drugged driving. *American Criminal Law Review*, 52(3), 453-516. <https://heinonline-org.dbprox.vinu.edu/HOL/LuceneSearch?terms=recreational+marijuana&collection=all&searchtype=advanced&typea=text&tabfrom=&submit=Go&all=true>

- Lauterbach, A. A. (2018). Hermeneutic phenomenological interviewing: Going beyond semi-structured formats to help participants revisit the experience. *The Qualitative Report*, 23(11), 2883-2898.
- Lewis, S. (2015). Qualitative inquiry and research design: Choosing among five approaches. *Health Promotion Practice*, 16(4), 473-475. <https://doi.org/10.1177/1524839915580941>
- Liebregts, N., van der Pol, P., Van Laar, M., de Graaf, R., van den Brink, W., & Korf, D. J. (2013). The role of study and work in cannabis use and dependence trajectories among young adult frequent cannabis users. *Frontiers in Psychiatry*, 4, 85. <https://doi.org/10.3389/fpsy.2013.00085>
- Longo, M. (2017). *Cannabis regulation and public health: Using the experience of alcohol regulation to maximize public health outcomes in Ontario* (10624631) [Doctoral dissertation]. ProQuest Dissertations and Theses database.
- Lowe, D., Sasiadek, J. D., Coles, A. S., & George, T. P. (2019). Cannabis and mental illness: a review. *European Archives of Psychiatry and Clinical Neuroscience*, 269(1), 107-120. <https://doi.org/10.1007/s00406-018-0970-7>
- Martins, S. S., Mauro, C. M., Santaella-Tenorio, J., Kim, J. H., Cerda, M., Keyes, K. M., & Wall, M. (2016). State-level medical marijuana laws, marijuana use, and perceived availability of marijuana among the general U.S. population. *Drug and Alcohol Dependence*, 169, 26-32. <https://doi.org/10.1016/j.drugalcdep.2016.10.004>
- Maxwell, J. C., & Mendelson, B. (2016). What do we know now about the impact of the laws related to marijuana? *Journal of Addiction Medicine*, 10(1), 3-12. <https://doi.org/10.1097/adm.0000000000000188>
- McCarthy, J. (2016, August 8). One in eight U.S. adults say they smoke

marijuana. <https://news.gallup.com/poll/194195/adults-say-smoke-marijuana.aspx>

McCaslin, M., & Scott, K. (2015). The five-question method for framing a qualitative research study. *The Qualitative Report*, 8(3). <https://doi.org/10.46743/2160-3715/2003.1880>

McClure, R. M. (2018). *Rolling with the changes: How marijuana testing policies affect job seekers' organizational attractiveness, job pursuit intention, and corporate social responsibility perceptions* [Master's thesis]. ProQuest.

McGinty, E. E., Niederdeppe, J., Heley, K., & Barry, C. L. (2017). Public perceptions of arguments supporting and opposing recreational marijuana legalization. *Preventive Medicine*, 99, 80-86. <https://doi.org/10.1016/j.ypmed.2017.01.024>

McGinty, E. E., Samples, H., Bandara, S. N., Saloner, B., Bachhuber, M. A., & Barry, C. L. (2016). The emerging public discourse on state legalization of marijuana for recreational use in the US: Analysis of news media coverage, 2010–2014. *Preventive Medicine*, 90, 114-120. <https://doi.org/10.1016/j.ypmed.2016.06.040>

McGuire, J. (2013). Legalized marijuana and its effect on the workplace. *Occupational Health & Safety*, 1-4. <https://ohsonline.com/Articles/2013/09/01/Legalized-Marijuana-and-Its-Effect-on-the-Workplace.aspx?Page=1>

McGuire, J. (2018). Employers must put safety first in a drug-friendly culture. *Occupational Health & Safety*, 1-5. <https://ohsonline.com/Articles/2018/02/01/Employers-Must-Put-Safety-First.aspx?Page=1>

- McGuirk, P. M., & O'Neill, P. (2016). *Using questionnaires in qualitative human geography*. Research Online. <https://ro.uow.edu.au/sspapers/2518/>
- McNichols, D. T. (2019). *Essays in labor economics* [Unpublished doctoral dissertation]. University of Oregon, Eugene.
- Marco, C. A., Detherage, J. P., 3rd, LaFountain, A., Hanna, M., Anderson, J., Rhee, R., Ziegman, J., & Mann, D. (2020). The perils of recreational marijuana use: relationships with mental health among emergency department patients. *Journal of the American College of Emergency Physicians Open*, 1(3), 281-286. <https://doi.org/10.1002/emp2.12025>
- Meier, M. H., Caspi, A., R. Knodt, A., Hall, W., Ambler, A., Harrington, H., Hogan, S., M. Houts, R., Poulton, R., Ramrakha, S., Hariri, A. R., & Moffitt, T. E. (2022). Long-term cannabis use and cognitive reserves and hippocampal volume in midlife. *American Journal of Psychiatry*, 179(5), 362-374. <https://doi.org/10.1176/appi.ajp.2021.21060664>
- Mettler, S. (2019). Making what government does apparent to citizens: Policy feedback effects, their limitations, and how they might be facilitated. *The Annals of the American Academy of Political and Social Science*, 685(1), 30-46. <https://doi.org/10.1177/0002716219860108>
- Mettler, S., & SoRelle, M. E. (2017). *Theories of the policy process* (4th ed.). Westview.
- Miller, T. (2018). *The consequences of legalizing recreational marijuana: Evidence from Colorado and Washington* [Unpublished doctoral dissertation]. Purdue University, West Lafayette.
- Monte, A. A., Zane, R. D., & Heard, K. J. (2015). The implications of marijuana legalization in Colorado. *JAMA*, 313(3), 241-242.

<https://doi.org/10.1001/jama.2014.17057>

- Morgan, S. J., Pullon, S. R., Macdonald, L. M., McKinlay, E. M., & Gray, B. V. (2016). Study observational research: A framework for conducting study research where observation data are the focus. *Qualitative Health Research, 27*(7), 1060-1068. <https://doi.org/10.1177/1049732316649160>
- Moser, A., & Korstjens, I. (2017). Series: Practical guidance to qualitative research. Part 3: Sampling, data collection, and analysis. *European Journal of General Practice, 24*(1), 9-18. <https://doi.org/10.1080/13814788.2017.1375091>
- Moulin, V., Baumann, P., Gholamrezaee, M., Alameda, L., Palix, J., Gasser, J., & Conus, P. (2018). Cannabis, a significant risk factor for violent behavior in the early phase psychosis. Two patterns of interaction of factors increase the risk of violent behavior: Cannabis use disorder and impulsivity; cannabis use disorder, lack of insight and treatment adherence. *Frontiers in Psychiatry, 9*. <https://doi.org/10.3389/fpsyt.2018.00294>
- Moustakas, C. (1994). *Phenomenological research methods*. Sage.
- Moynihan, D. P. (2014, July 1). Policy feedback and the politics of administration. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.432.5265&rep=rep1&type=pdf>
- Murse, T. (2020, February 4). Recreational use of marijuana is legal in 8 states. *ThoughtCo*. <https://www.thoughtco.com/states-that-legalized-marijuana-3368391>
- Nagele-Piazza, E. (2019, October 29). How do recreational marijuana laws affect the workplace? <https://www.shrm.org/resourcesandtools/legal-and-compliance/state-and-local-updates/pages/recreational-marijuana-laws-workplace-employment.aspx>



- National Academies of Sciences and Medicine. (2017). The health effects of cannabis and cannabinoids: Current state of evidence and recommendations for research. <https://www.nap.edu/catalog/24625/the-health-effects-of-cannabis-and-cannabinoids-the-current-state>
- National Institute on Alcohol Abuse and Alcoholism. (2019). Alcohol facts and statistics. <https://www.niaaa.nih.gov/sites/default/files/AlcoholFactsAndStats.pdf>
- National Institute on Drug Abuse. (2017). Marijuana research report: Is marijuana addictive? <https://www.drugabuse.gov/publications/research-reports/marijuana/marijuana-addictive>
- National Safety Council. (2018, May 16). Colorado study shows marijuana use more prevalent among workers in certain 'safety-sensitive' jobs. <https://www.safetyandhealthmagazine.com/articles/16988-colorado-study-shows-marijuana-use-higher-among-workers-in-certain-safety-sensitive-jobs>
- National Safety Council. (2019, March 1). *Marijuana at work*. <https://www.nsc.org/nsc-membership/marijuana-at-work>
- New York Times. (2017, August 1). Florida Amendment 2: Expand medical marijuana. Results: Approved. *The New York Times - Breaking News, US News, World News, and Videos*. <https://www.nytimes.com/elections/2016/results/florida-ballot-measure-2-expand-medical-marijuana>
- Newmeyer, M. N., Swortwood, M. J., Andersson, M., Abulseoud, O. A., Scheidweiler, K. B., & Huestis, M. A. (2017). Cannabis edibles: Blood and oral fluid cannabinoid pharmacokinetics and evaluation of oral fluid Screening devices for predicting  $\Delta^9$ -tetrahydrocannabinol in blood and oral fluid following cannabis brownie administration. *Clinical Chemistry*, 63(3), 647-

662. <https://doi.org/10.1373/clinchem.2016.265371>

Newmeyer, M. N., Swortwood, M. J., Taylor, M. E., Abulseoud, O. A.,

Woodward, T. H., & Huestis, M. A. (2017). Evaluation of divided attention psychophysical task performance and effects on pupil sizes following smoked, vaporized, and oral cannabis administration. *Journal of Applied*

*Toxicology*, 37(8), 922-932. <https://doi.org/10.1002/jat.3440>

Nkemdirim Okere, A. (2018). Policy reform with marijuana use: Weighing risks and benefits. *Annals of Pharmacotherapy*, 52(8), 821-

823. <https://doi.org/10.1177/1060028018765938>

Nyumba, T. O., Wilson, K., Derrick, C. J., & Mukherjee, N. (2018). The use of focus group discussion methodology: Insights from two decades of application in conservation. *Ecology and Evolution*, 9(1), 20-32.

<https://doi.org/10.1111/2041-210X.12860>

Occupational Health & Safety. (2019). How cannabis and workplace safety coexist—or don't. *Occupational Health & Safety*, 1-2. <https://ohsonline.com/Articles/2019/10/18/How-Cannabis-and-the-Workplace-Safety-Coexist-or-Dont.aspx?Page=1>

Occupational Health & Safety. (2019). NSC releases federal policy position on cannabis use in safety sensitive jobs. *Occupational Health & Safety*, 1-2. <https://ohsonline.com/Articles/2019/10/22/NSC-Releases-Federal-Policy-Position-on-Cannabis-Use-in-Safety-Sensitive-Jobs.aspx?Page=1>

Okere, A. N. (2018). Policy reform with marijuana use: Weighing risks and benefits. *Annals of Pharmacotherapy*, 52(8), 821-

823. <https://doi.org/10.1177/1060028018765938>

Olafson, J. J. (2016). Marijuana use and the workplace. *Employment Relations Today*,

67-97. <https://eds-b-ebshost-com.ezp.waldenulibrary.org/eds/pdfviewer/pdfviewer?vid=1&sid=d1b44040-4f84-4814-977a-9e12f7d883f4%40pdc-v-sessmgr04>

- Orr, J. M., Paschall, C. J., & Banich, M. T. (2016). Recreational marijuana use impacts white matter integrity and subcortical (but not cortical) morphometry. *NeuroImage: Clinical*, *12*, 47-56. <https://doi.org/10.1016/j.nicl.2016.06.006>
- Pacula, R. L., & Smart, R. (2017). Medical marijuana and marijuana legalization. *Annual Review of Clinical Psychology*, 397-419. <https://doi.org/10.1146/annurev-clinpsy-032816-045128>
- Page, R. L., 2nd, Allen, L. A., Kloner, R. A., Carriker, C. R., Martel, C., Morris, A. A., Piano, M. R., Rana, J. S., & Saucedo, J. F. (2020). Medical marijuana, recreational cannabis, and cardiovascular health: A scientific statement from the American Heart Association. *Circulation*, *142*(10), e131-e152. <https://doi.org/10.1161/CIR.0000000000000883>
- Parnes, J. E., Bravo, A. J., Conner, B. T., & Pearson, M. R. (2017). A burning problem: cannabis lessons learned from Colorado. *Addiction Research & Theory*, *26*(1), 3-10. <https://doi.org/10.1080/16066359.2017.1315410>
- Patton, M. Q. (1999). Enhancing the quality and credibility of qualitative analysis. *Health Services Research*, *34*(5), 1189-1208.
- Patton, M. Q. (2015). *Qualitative research & evaluation methods: Integrating theory and practice: The definitive text of qualitative inquiry frameworks and options* (4th ed.). Sage Publications, Inc.
- Peterman, D. R. (2019). Marijuana Use and Highway Safety (R45719). *Congressional Research Service*. <https://heinonline-org.dbprox.vinu.edu/HOL/Lucene>

Search?terms=recreational+marijuana&collection=  
 all&searchtype=advanced&typea=text&tabfrom=&submit=Go&all=true&face  
 \_quers=yearhi%3A%5B2016%20TO%202050%5D%20AND%20yearlo%3A  
 %5B1000%20TO%202050%5D&new\_face=date

- Peterson, A. B., Sauber-Schatz, E. K., & Mack, K. A. (2018). Ability to monitor driving under the influence of marijuana among non-fatal motor-vehicle crashes: An evaluation of the Colorado electronic accident reporting system. *Journal of Safety Research*, 65, 161-167. <https://doi.org/10.1016/j.jsr.2018.03.006>
- Phillips, J. A., Holland, M. G., Baldwin, D. D., Gifford-Meuleveld, L., Mueller, K. L., Perkison, B., & Dreger, M. (2015). Marijuana in the workplace: Guidance for occupational health professionals and employers. *Workplace Health & Safety*, 63(4), 139-164. <https://doi.org/10.1177/2165079915581983>
- Phillips, K. T., Phillips, M. M., Lalonde, T. L., & Prince, M. A. (2018). Does social context matter? An ecological momentary assessment study of marijuana use among college students. *Addictive Behaviors*, 83, 154-159.
- Pierson, P. (1993). When effect becomes cause: Policy feedback and political change. *World Politics*, 45(4), 595-628. <https://doi.org/10.2307/2950710>
- Pirone, J. (2019). Marijuana in the workplace employers' policies should restrict marijuana use to the extent permitted by law. *Occupational Health & Safety*, 1-5. <https://ohsonline.com/Articles/2019/03/01/Marijuana-in-the-Workplace.aspx?Page=5>
- Pratt, S. M. (2016). Weeding out the myths: how Colorado public health officials and providers are managing recreational marijuana. *American Medical Writers Association Journal*, 31(4), 156-157.

- Prince, L. Y., Schmidtke, C., Beck, J. K., & Hadden, K. B. (2018). An assessment of organizational health literacy practices at an academic health center. *Quality Management in Health Care, 27*(2), 93-97.  
<https://doi.org/10.1097/qmh.0000000000000162>
- Quest Diagnostics. (2019). Workforce drug testing positivity climbs to highest rate since 2004, According to New Quest Diagnostics Analysis.  
<https://newsroom.questdiagnostics.com/2019-04-11-Workforce-Drug-Testing-Positivity-Climbs-to-Highest-Rate-Since-2004-According-to-New-Quest-Diagnostics-Analysis>
- Reagan, R. (1986). *Executive Order 12564: Drug-Free Federal Workplace*. Office of the Federal Register United States. <https://www.hsdl.org/?abstract&did=457302>
- Reed, J. K. (2018). *Impacts of marijuana legalization in Colorado: A report Pursuant to Senate Bill 13-283*. Colorado Department of Public Safety Division of Criminal Justice Office of Research and Statistics. [https://cdpsdocs.state.co.us/ors/docs/reports/2018-SB13-283\\_Rpt.pdf](https://cdpsdocs.state.co.us/ors/docs/reports/2018-SB13-283_Rpt.pdf)
- Rezkalla, S., & Kloner, R. A. (2019). Cardiovascular effects of marijuana. *Trends in Cardiovascular Medicine, 29*(7), 403-407.
- Rhoades McKee's Employment Law Team. (2018, January 4). Preparing your workplace for legalized marijuana. <https://www.rhoadesmckee.com/preparing-your-workplace-for-legalized-marijuana/>
- Richards, K. A., & Hemphill, M. A. (2017). A practical guide to collaborative qualitative data analysis. *Journal of Teaching in Physical Education, 7*(2), 225-231. <https://doi.org/10.1123/jtpe.2017-0084>

- Rocky Mountain High-Intensity Drug Trafficking Area program. (2019). The legalization of marijuana in Colorado: The impact: Volume 6, September 2019. *Missouri medicine*, 116(6), 450.
- Rogeberg, O. (2018). Prohibition, regulation or laissez-faire: The policy trade-offs of cannabis policy. *International Journal of Drug Policy*, 56, 153-161. <https://doi.org/10.1016/j.drugpo.2018.03.024>
- Rubin, H. J., & Rubin, I. S. (2012). *Qualitative interviewing: The art of hearing data*. SAGE Publications.
- Ruggiano, N., & Perry, T. E. (2017). Conducting secondary analysis of qualitative data: Should we, can we, and how? *Qualitative Social Work*, 18(1), 81-97. <https://doi.org/10.1177/1473325017700701>
- Rumalla, K., Reddy, A. Y., & Mittal, M. K. (2016). Association of recreational marijuana use with aneurysmal subarachnoid hemorrhage. *Journal of Stroke and Cerebrovascular Diseases*, 25(2), 452-460. <https://doi.org/10.1016/j.jstrokecerebrovasdis.2015.10.019>
- Rumalla, K., Reddy, A. Y., & Mittal, M. K. (2016). Recreational marijuana use and acute ischemic stroke: A population-based analysis of hospitalized patients in the United States. *Journal of the Neurological Sciences*, 364, 191-196. <https://doi.org/10.1016/j.jns.2016.01.066>
- Rusche, S., & Sabet, K. (2015). What will legal marijuana cost employers. *Journal of Global Drug Policy & Practice*, 9(2), 1-66. <https://eds-b-ebshost-com.ezp.waldenulibrary.org/eds/pdfviewer/pdfviewer?vid=0&sid=2c856d78-10c1-4e53-ac7a-5a7352543b17%40pdc-v-sessmgr06>
- Sabatier, P. A., & Weible, C. (2014). *Theories of the policy process* (3rd ed.). Westview Press.

- Sabet, K. (2018). Marijuana and legalization impacts. *Berkeley Journal of Criminal Law*, 23(1), 84-98. <https://DOI: 10.15779/Z381V5BD5S>
- Sabia, J. J., & Nguyen, T. T. (2018). The effect of medical marijuana laws on labor market outcomes. *The Journal of Law and Economics*, 61(3), 361-396. <https://doi.org/10.1086/701193>
- Salas-Wright, C. P., Vaughn, M. G., & González, J. M. (2017). *Drug abuse and antisocial behavior: A biosocial life course approach*. Springer.
- Salas-Wright, C. P., Vaughn, M. G., Cummings-Vaughn, L. A., Holzer, K. J., Nelson, E. J., AbiNader, M., & Oh, S. (2017). Trends and correlates of marijuana use among late middle-aged and older adults in the United States, 2002-2014. *Drug and Alcohol Dependence*, 171, 97-106. <https://doi.org/10.1016/j.drugalcdep.2016.11.031>
- Sanchez, C. D. (2018). *Cannabis and politics: The corruptive relationship between politicians and the industries that benefit from its prohibition* (13423620) [Doctoral dissertation]. ProQuest Dissertations and Theses database.
- Schroth, L. A., Hody, B. J., Chaffin, C. S., Laratonda, E., & Cook, G. W. (2018). Medical marijuana: Addressing impairment in the workplace. *Professional Safety*, 63(08), 36-40. <https://onepetro.org/PS/article-abstract/63/08/36/33547/Medical-Marijuana-Addressing-Impairment-in-the?redirectedFrom=fulltext>
- Sero, R. (2015). *Using qualitative methods in your evaluation* [Video]. YouTube. <https://www.youtube.com/watch?v=OH127L1imXk>
- Sheridan, R. (2019). Marijuana in the workplace: Legal issues abound. *The Journal of Employee Assistance*, 49(1), 8-34. <https://link.gale.com/apps/doc/A581864510/EAIM?u=minn4020&sid=EAIM&xid=a45e293e>

- Shollenbarger, S. G., Price, J., Wieser, J., & Lisdahl, K. (2015). Poorer frontolimbic white matter integrity is associated with chronic cannabis use, FAAH genotype, and increased depressive and apathy symptoms in adolescents and young adults. *NeuroImage: Clinical*, 8, 117-125.
- Smith, M. J., Cobia, D. J., Reilly, J. L., Gilman, J. M., Roberts, A. G., Alpert, K. I., Wang, L., Breiter, H. C., & Csernansky, J. G. (2015). Cannabis-related episodic memory deficits and hippocampal morphological differences in healthy individuals and schizophrenia subjects. *Hippocampus*, 25(9), 1042-1051. <https://doi.org/10.1002/hipo.22427>
- Smith, R., Hall, K. E., Etkind, P., & Van Dyke, M. (2018). Current marijuana use by industry and occupation: Colorado, 2014–2015. *MMWR. Morbidity and Mortality Weekly Report*, 67(14), 409-413. <https://doi.org/10.15585/mmwr.mm6714a1>
- Sokoya, M., Eagles, J., Okland, T., Coughlin, D., Dauber, H., Greenlee, C., & Winkler, A. A. (2018). Patterns of facial trauma before and after the legalization of marijuana in Denver, Colorado: A joint study between two Denver hospitals. *The American Journal of Emergency Medicine*, 36(5), 780-783. <https://doi.org/10.1016/j.ajem.2017.10.014>
- Solowij, N., Broyd, S., Greenwood, L. M., van Hell, H., Martellozzo, D., Rueb, K., Todd, J., Liu, Z., Galettis, P., Martin, J., Murray, R., Jones, A., Michie, P. T., & Croft, R. (2019). A randomized controlled trial of vaporized  $\Delta^9$ -tetrahydrocannabinol and cannabidiol alone and in combination in frequent and infrequent cannabis users: acute intoxication effects. *European Archives of Psychiatry and Clinical Neuroscience*, 269(1), 17-35. <https://doi.org/10.1007/s00406-019-00978-2>
- Stahl, G. K., Brewster, C. J., Collings, D. G., & Hajro, A. (2020). Enhancing the role of human resource management in corporate sustainability and social



- responsibility: A multi-stakeholders, multidimensional approach to HRM. *Human Resource Management Review*, 30(3), 100708.  
<https://doi.org/10.1016/j.hrmr.2019.100708>
- State of Colorado. (2015, July 10). Legal marijuana use in Colorado. <https://cannabis.colorado.gov/legal-marijuana-use-in-colorado>
- State of Colorado. (2019, August 16). Marijuana occupational safety and health. <https://www.colorado.gov/pacific/cdphe/marijuana-occupational-safety-and-health>
- Stewart, S. B., Bhatia, D., Burns, E. K., Sakai, J. T., Martin, L. F., Levinson, A. H., & James, K. A. (2019). Association of marijuana, mental health, and tobacco in Colorado. *Journal of Addiction Medicine*, 1. <https://doi.org/10.1097/adm.0000000000000533>
- Stormshak, E. A., Caruthers, A. S., Gau, J. M., & Winter, C. (2019). The impact of recreational marijuana legalization on rates of use and behavior: A 10-year comparison of two cohorts from high school to young adulthood. *Psychology of Addictive Behaviors*, 33(7), 595-602. <https://doi.org/10.1037/adb0000508>
- Strong, D. R., Myers, M. G., Pulvers, K., Noble, M., Brikmanis, K., & Doran, N. (2018). Marijuana use among US tobacco users: Findings from wave 1 of the population assessment of tobacco health (PATH) study. *Drug and Alcohol Dependence*, 186, 16-22. <https://doi.org/10.1016/j.drugalcdep.2017.12.044>
- Stufano, T. (2018). Through the smoke: Do current civil liability laws address the unique issues presented by the recreational marijuana industry? *Touro Law Review*, 22, 34. : <https://digitalcommons.tourolaw.edu/lawreview>
- Sutton, J., & Austin, Z. (2015). Qualitative research: Data collection, analysis, and management. *The Canadian Journal of Hospital Pharmacy*, 68(3), 226-231. <https://doi.org/10.4212/cjhp.v68i3.1456>
- Sznitman, S. R., & Zolotov, Y. (2015). Cannabis for therapeutic purposes and public

- health and safety: A systematic and critical review. *International Journal of Drug Policy*, 26(1), 20-29. <https://doi.org/10.1016/j.drugpo.2014.09.005>
- Taylor, K., Bunker, R. B., V, L. R., & Rodriguez, R. (2016). An analysis of the accounting and financial effects of inconsistent state and federal laws on growth of the recreational marijuana industry. *Journal of Legal, Ethical and Regulatory Issues*, 19, 11. <https://search.proquest.com/openview/a01eadaa3e3eda6241ab9e07c18893b2/1?pq-origsite=gscholar&cbl=38868>
- Titus, D. (2016). Policy essay puff, puff, pass. That law: The changing legislative environment of medical marijuana policy. *Harvard Journal on Legislation*, 10(15), 40-58.
- Tormey, W. (2010). Adverse health effects of non-medical cannabis use. *The Lancet*, 375(9710), 196. [https://doi.org/10.1016/s0140-6736\(10\)60086-4](https://doi.org/10.1016/s0140-6736(10)60086-4)
- Van der Kloet, D., Giesbrecht, T., van Wel, J., Bosker, W. M., Kuypers, K. P., Theunissen, E. L., Spronk, D. B., Jan Verkes, R., Merckelbach, H., & Ramaekers, J. G. (2015). MDMA, cannabis, and cocaine produce acute dissociative symptoms. *Psychiatry research*, 228(3), 907-912.
- Volkow, N. D., Baler, R. D., Compton, W. M., & Weiss, S. R. (2015). Adverse health effects of marijuana use. *The New England Journal of Medicine*, 370(23), 219-227. <https://doi.org/10.1056/NEJMra1402309>
- Volkow N. D., Swanson J. M., & Evins A. E. (2016). Effects of cannabis use on human behavior, including cognition, motivation, and psychosis: a review.

*JAMA Psychiatry*, 73(3), 292-297.

<https://doi.org/10.1001/jamapsychiatry.2015.3278>

Weir, K. (2015). Marijuana and the developing brain. *Journal of American Psychological Association*, 46(10), 48.

<https://www.apa.org/monitor/2015/11/marijuana-brain>

Weiss, S. (2015). The green (and winding) road: it's been a year since Colorado and Washington. *State Legislatures*, 20-24. [https://eds-b-eb-scohost-com.ezp.waldenulibrary.org/eds/pdfviewer/pdfviewer?vid=4&sid=bf0399d3-](https://eds-b-eb-scohost-com.ezp.waldenulibrary.org/eds/pdfviewer/pdfviewer?vid=4&sid=bf0399d3-4b46-4fa5-bc96-db412a1067fe%40pdc-v-sessmgr03)

[4b46-4fa5-bc96-db412a1067fe%40pdc-v-sessmgr03](https://eds-b-eb-scohost-com.ezp.waldenulibrary.org/eds/pdfviewer/pdfviewer?vid=4&sid=bf0399d3-4b46-4fa5-bc96-db412a1067fe%40pdc-v-sessmgr03)

Weiss, S. R., Howlett, K. D., & Baler, R. D. (2017). Building smart cannabis policy from the science up. *International Journal of Drug Policy*, 42, 39-

49. <https://doi.org/10.1016/j.drugpo.2017.01.007>

Wichowsky, M., & Moynihan, D. P. (2008). *Measuring how administration shapes citizenship: A policy feedback perspective on performance management*. La Follette School Working Paper No. 2007-026.

Wilson, D. T. (2018). *Recreational marijuana: Exploring attitudes of Colorado police about department policies and colleagues* [Doctoral dissertation]. ProQuest Dissertations and Theses Global.

Wilson, H. B., Taylor, S., Barrett, G., Jamieson, J., & Grindrod, L. (2017). Propagating the haze? Community and professional perceptions of cannabis cultivation and the impacts of prohibition. *International Journal of Drug Policy*, 48, 72-80. <https://doi.org/10.1016/j.drugpo.2017.07.015>

Wright, S., & Metts, J. (2016). Recreational cannabinoid use: The hazards behind the "high." *The Journal of Family Practice*, 16(11), 770-779.

WUFT. (2015, November 5). Amendment 2 fails: Medical marijuana remains illegal

in Florida. *WUFT News*. <https://www.wuft.org/news/2014/11/05/amendment-2-fails-medical-marijuana-remains-illegal-in-florida/>

- Yates, D., & Speer, J. (2018). Over and under-regulation in the Colorado Cannabis industry: A data-analytic perspective. *International Journal of Drug Policy*, *59*, 63-66. <https://doi.org/10.1016/j.drugpo.2018.06.001>
- Yazan, B. (2015). Three approaches to study methods in education: Yin, Merriam, and Stake. *The Qualitative Report*, *20*(2).
- Yin, R. K. (2018). *Study research and applications: Design and methods* (6th ed.). Sage.
- Yu, B., Chen, X., Chen, X., & Yan, H. (2020). Marijuana legalization and historical trends in marijuana use among US residents aged 12-25: Results from the 1979-2016 National Survey on drug use and health. *BMC Public Health*, *20*(1), 156. <https://doi.org/10.1186/s12889-020-8253-4> Zajicek, J. P., Hobart, J. C., Slade, A., Barnes, D., Mattison, P. G., & MUSEC Research Group (2015). Multiple sclerosis and extract of cannabis: results of the MUSEC trial. *Journal of Neurology, Neurosurgery, and Psychiatry*, *83*(11), 1125–1132. <https://doi.org/10.1136/jnnp-2012-302468>
- Zehra, A., Burns, J., Liu, C. K., Manza, P., Wiers, C. E., Volkow, N. D., & Wang, G. J. (2018). Cannabis addiction and the brain: A review. *Journal of neuroimmune pharmacology: the official journal of the Society on NeuroImmune Pharmacology*, *13*(4), 438-452. <https://doi.org/10.1007/s11481-018-9782-9>

## Appendix A: Questionnaire

1. Please, state your age and years of experience in the current position.
2. How do you personally perceive the legalization of recreational marijuana in Colorado? Are you for or against its legalization for recreational use? Please, explain your answer in detail.
3. It has been several years since Colorado legalized marijuana for recreational use. What were your experiences (if any) with incidents, accidents, and trends in work patterns among employees?
4. After the legalization of marijuana for recreational use, what were your experiences with workplace safety?
5. If you could compare incidents, accidents, and trends in work patterns among employees and workplace safety before and after the legalization of marijuana for recreational use, what changes (if any) have you noticed?
6. Before the legalization, what were the most common workplace safety and productivity issues?
7. What are the most common issues with workplace safety and productivity of workers after the legalization?
8. What are your experiences regarding adjusting to the new legal framework since recreational marijuana was legalized in terms of workplace sobriety and off-duty use?
9. How have you and your organization adjusted the employment policies and practices after the legalization of recreational marijuana? Do you consider these policies satisfactory and practical or not?
10. What policies or approaches have you developed to sustain workplace safety after the legalization of recreational marijuana? Did you add any additional precautions

and disciplinary procedures for those who use marijuana off-duty or in the workplace for recreational use?

- 11.** According to your experience, how (if any) did the legalization of recreational marijuana affect workers' productivity? Whether it did or did not, explain your answer, please.
- 12.** Based on your experiences, how did (if any) the legalization of recreational marijuana affect workplace safety?
- 13.** According to your experience, how did (if any) the legalization of recreational marijuana affect the behavioral patterns of employees? For instance, have the scope of counterproductive behavior increased since legalization?
- 14.** Based on your experience, what policies would you recommend implementing to prevent the impact of recreational marijuana use on the safety and productivity of employees?

## Appendix B: Citi Program Course Completion



Completion Date 13-Dec-2022  
Expiration Date N/A  
Record ID 53072871

This is to certify that:

**Charles Mason**

Has completed the following Citi Program course:

Not valid for renewal of  
certification through CME.

**Student's**  
(Curriculum Group)  
**Doctoral Student Researchers**  
(Course Learner Group)  
**1 - Basic Course**  
(Stage)

Under requirements set by:

**Walden University**



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