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# The role of mindfulness in increasing employee productivity in both tactical and strategic types of roles

Fabiola Fajardo

# THE ROLE OF MINDFULNESS IN INCREASING EMPLOYEE PRODUCTIVITY IN BOTH TACTICAL AND STRATEGIC TYPES OF ROLES

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FABIOLA FAJARDO

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Committee Member, Name of Faculty Member, Degree

Deryck J. van Rensburg, D.B.A., Dean
The Graziadio Business School

**Abstract**

As organizations search to identify how they can achieve higher output without increasing costs, mindfulness practices are increasingly being adopted for the productivity-related benefits they reportedly provide. This study looks at Mindfulness' impact on employee productivity and examines if this impact looks different in tactical and strategic types of roles. 27 of 30 participants completed a Mindfulness workshop. Changes in Mindfulness levels and in productivity-related factors were assessed both before and after the intervention using surveys, questionnaires, and interviews. Descriptive statistics and themes were used to analyze the data. Seeing Mindfulness as more holistic, participants described a personal impact that quickly transitioned into the workplace. This research found shifts in how participants approach their work, in their level of awareness, in their mindsets, and in being present more. Tactical and strategic types of roles displayed both similarities and differences in results. Limitations and future research directions are discussed.

*Keywords:* Mindfulness, Productivity, Tactical Roles, Strategic Roles, Stress, Distractions, Interruptions

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## Chapter 1: Introduction

According to Lieberman (2015), more companies are adopting mindfulness practices searching for the productivity-related benefits it reportedly provides (e.g., Google, Goldman Sachs, HBO, Target, and Bank of America, among others). At General Mills, 80% of mindfulness program participants reported improved decision-making and listening abilities (Rossy, 2013). Aetna employees participating in practices such as yoga reported a 28% reduction in stress levels and an average productivity gain of 62 minutes per week, which translates into approximately $3,000 in savings per employee per year (Gelles, 2015).

But what exactly is meant by "Mindfulness" and why would it be of interest to the workplace? Mindfulness is defined as "being fully awake in our lives. It's about perceiving the exquisite vividness of each moment. We feel alive and gain immediate access to our inner resources for insight, transformation, and healing" (Kabat-Zinn, 1994, p. 14). Meditation, a type of mindfulness practice, also yields insights into what mindfulness is. A definition of the former, which integrates both western and Buddhist meditation traditions, is provided by Walsh and Shapiro (2006):

> Meditation refers to a family of self-regulated practices that focus on training attention and awareness in order to bring mental processes under greater voluntary control, and thereby foster general mental wellbeing and development and/or specific capacities such as calm, clarity, and concentration. (p. 229)

A third definition sees Mindfulness as a consciousness of one's experiences at the present moment without exerting evaluation (Davis & Hayes, 2012). Several studies evidence some of the benefits that accompany Mindfulness, such as: increased focused attention,

improved working memory capacity, lower stress levels and burnout (Roeser et al., 2013), improved ability to switch between tasks (Levy et al., 2012), increased thought and cognition, enhanced emotional intelligence, and augmented motivation (Walsh & Shapiro, 2006). A study conducted by Levy, Wobbrock, Kaszniak, and Ostergren (2012), found that those trained in meditation stayed longer on task and reported fewer negative emotions after task completion. Simple techniques like the "mindful pause exercise" help people focus on the present moment instead of being absorbed in past or future thoughts and gear them away from automatically executing (University of Wisconsin, The Mindfulness Pause, para. 1), which may impact productivity.

This all points to Mindfulness' potential to positively impact productivity in the workplace. However, Lyddy and Good (2017) raise the question of whether work environments are conducive to mindfulness practices. The authors view Mindfulness as a state of "being" while work is goal (future) oriented and viewed as a state of "doing" – two apparent contradicting conditions. Furthermore, they indicate a scholarly debate exists regarding the true effectiveness and applicability of Mindfulness in the workplace – and infer that this debate is a result of the two cognitive modes mentioned: being and doing (p. 2). Müller, Gerasimova, and Ritter (2016) present two types of meditation styles (a type of Mindfulness) and pose the idea that each impacts creativity differently. In mindful meditation, awareness is held without the intent of selecting a specific thought or item to focus on. Concentrative meditation, on the other hand, brings the practitioner to focus on something specific, looking to enhance attention. This difference in emphasis introduces the question of the type of impact mindful and concentrative meditation would each have on employee productivity.

With Mindfulness displaying the ability to impact employee productivity, the question that follows is whether or not this impact would look different based on the type of role the employee is executing. The workplace has shifted from a "manufacturing economy" into a "service economy" (Seidman, 1983). Schneier, Shaw, and Beatty (1992) mention that by the 1990s, white collar jobs outnumbered blue collar ones at a rate of two to one. The literature on productivity shows more unambiguous measures exist to increase blue-collar productivity (Davis, 1991; Schneier et al., 1992). Both types of roles experience factors that impact productivity (Brown & Mitchell, 1988; Jett & George, 2003); these display similarities and differences (Brown & Mitchell, 1988). Several mechanisms to increase productivity exist (Banker, Datar, & Rajan, 1987; Burkhead & Hennigan, 1978; Chisholm & Munzenrider, 1989; Latham, Cummings, & Mitchell, 1981; Shaikh, Cobb, Golightly, Segal, & Haslegrave, 2012), which are enumerated in this study. Although improved productivity is mentioned as one of several benefits mindfulness practices provide (Good et al., 2015; Lyddy & Good, 2017; Lomas et al., 2017), there is an opportunity to further understand mindfulness' role and impact in the work setting regarding employee productivity.

**Purpose and Approach**

This study intends to contribute and add to the existing literature regarding Mindfulness' potential in the workplace by exploring two questions:

1. What impact does Mindfulness have on employee productivity?
2. Does this impact look different in tactical vs. strategic type of roles?

For this purpose, employees working for a multinational company situated in Costa Rica were invited to participate in an eight-session mindfulness workshop. They represented different organizations in core and support departments and were executing either tactical or strategic types of roles. Baseline and post-intervention results were assessed to identify if there was an increase in participant mindfulness levels. Furthermore, the results were used to evaluate if heightened mindfulness levels impacted productivity and related factors such as ease of dealing with stress and the ability to refocus after having experienced an interruption or a distraction. This topic is of interest to the participating company given that an optional Mindfulness course has been introduced for employees, and the instructors are looking for data that evaluates the value of continued course deployment.

**Implications of this Research**

An organization's financial success is linked to an increase in productivity (Parker, 1983). Given possible benefits in bringing Mindfulness into the workplace and in adopting related practices in this venue, the Mindfulness concept and methods carry the potential to increase employee productivity. At the same time, an opportunity exists to understand this likely impact further. As organizations search for ways to achieve higher output without increasing costs, Mindfulness and mindfulness practices become an attractive option for the workplace.

As individuals become more mindful, they become better equipped to manage stress (Roeser et al., 2013), gain greater ability to switch between tasks (Levy et al., 2012), and experience an increase in their emotional intelligence (Walsh & Shapiro, 2006), helping them become more self and socially aware (Bradberry & Greaves, 2009).

In addition to these benefits mentioned in the literature, this study shows that Mindfulness impacts the individual holistically. This impact translates quickly into the workplace and appears as shifts in the approach to work, in changes in mindsets and in being present more, among others, opening the possibility for employees to impact the bottom line through these changes.

**Study Outline**

Chapter 1 presented Mindfulness as a tool to potentially help increase employee productivity and mentioned a few companies that have employed Mindfulness practices seeking related benefits (Gelles, 2015; Lieberman, 2015; Rossy, 2013). It also defined Mindfulness (Davis & Hayes, 2012; Kabat-Zinn, 1994; Walsh & Shapiro, 2006) and described a few of the potential paybacks generated through applying Mindfulness practices (Levy et al., 2012; Roeser et al., 2013; Walsh & Shapiro, 2006). Additionally, the chapter introduced some of the questions and debate that exist regarding Mindfulness' role and impact in the workplace (Lyddy & Good, 2017; Müller et al., 2016). Finally, it presented the notion of a shift in the workplace composition moving from a manufacturing to a service economy (Seidman, 1983) where white-collar jobs now outnumber blue-collar jobs (Schneier, Shaw, & Beatty, 1992). Hence, in addition to further the understanding of Mindfulness' impact on employee productivity, the opportunity exists to comprehend if this impact looks different depending on the type of role the employee is performing. Chapter 2 presents a review of existing literature and expands on Mindfulness' definition and proposed benefits. It mentions the scholarly debate regarding Mindfulness' role and application in a work setting, deep dives into productivity and worker/job type, and looks at different methods and tools used to

increase employee productivity. Chapter 3 outlines the research methodology, including the research design, the sample, how data was gathered and analyzed, and how validity was pursued. Chapter 4 is a review of the findings and data analysis. Finally, Chapter 5 draws the study conclusions, mentions the limitations faced, and suggests recommendations for future studies.

# Chapter 2: Literature Review

## Conceptual Framework

This project is an effort to contribute to the existing literature regarding the impact of Mindfulness on employee productivity. It also seeks to understand whether or not there are differences in productivity between tactical and strategic types of roles when Mindfulness practices are adopted. Accordingly, this chapter will describe what Mindfulness means (including different types of Mindfulness practices and benefits associated with these) and will review the debate regarding Mindfulness in the workplace. It will define productivity and will describe methodologies that attempt to increase it. It will look at productivity from the standpoint of blue collar and white collar type of work (where blue collar jobs include tactical type of roles and direct labor and white collar jobs include strategic type of roles and indirect labor). Finally, this chapter will describe different ways that productivity is impacted and will present Mindfulness as a potential tool to address employee productivity in enterprises.

## Mindfulness Definition and Proposed Benefits

Kabat-Zinn (2003) explains that Mindfulness has been a part of several ancient traditions, including "Buddhist [teachings] for over the past 2,500 years" (p. 145). It was introduced to the west about 40 years ago as a tool to manage chronic illness (Kabat-Zinn, 2003, pp. 146 & 149) and was later brought into the management literature (Langer, 1989). Good et al. (2015) suggest that interest in Mindfulness is surging. At the time the article was written, "13% of U.S. workers reported engaging in Mindfulness practices" (p. 2). Companies and organizations like Aetna (Gelles, 2015), The World Bank (Institute of Management and Administration, 2007, pp. 4-5), Goldman Sachs,

HBO, Target, Bank of America, and the NFL (Lieberman, 2015, para.7), among others, have adopted and employed Mindfulness practices in search of productivity improvements and the additional benefits it proposes. Duerr (2004) mentions that "at least 135 companies have offered their employees classes in some form of meditation and/or yoga" (p. 3) in the business, government, and nonprofit sectors.

But what exactly is meant by "Mindfulness?" Kabat-Zinn (2003) defines Mindfulness as "the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment" (p. 145). Defining characteristics include a present focus (Lyddy & Good, 2017), intentionality, attention, and specific types of attitudes (i.e., compassion) (Lomas et al., 2017) towards oneself (Roeser et al., 2013). Mindfulness allows the practitioner to maintain awareness in each passing moment, without attaching oneself to specific thoughts or emotions; hence finding "emotional balance and well-being" (Ludwig & Kabat-Zinn, 2008, p. 1350).

There are different types of mindfulness practices. Body scans engage practitioners in an examination of their body parts to increase consciousness about their mind and body and related emotional experiences (Kabat-Zinn, 1994). Focused attention is where the individual focuses on a specific object or on his/her breath, recognizes intruding thoughts without evaluation, and lets them go. Open-monitoring meditation is where the individual practices moment-to-moment awareness without paying specific attention to a particular object or thought (Lutz, Slagter, Dunne, & Davidson, 2008). Salzberg (1998) mentions loving-kindness meditation, where attention is focused on developing kindness towards oneself and others. Other mindfulness practices include

yoga and Transcendental Meditation, which incorporates mantras (Walsh & Shapiro, 2006).

With regards to possible workplace implications, Mindfulness may be a versatile tool with the potential to benefit enterprises. Meditation has proven effective in dealing with anxiety, depression (Ludwig & Kabat-Zinn, 2008), stress, and burnout (Roeser et al., 2013) – conditions that may impact employee productivity. Higher stress in workplaces has led, in some cases, to an increased risk of mental illness (Lomas et al., 2017), has been linked to reduced memory (Sandi & Pinelo-Nava, 2006), and an increase in loss of working days (Davis, 2014). As an example, Davis states that these conditions accounted for "70 million sick days in 2007- making it the leading cause of sick leave in the United Kingdom" (p. 12) and therefore impacting employee productivity. Additionally, a survey by ComPsych Corporation performed in 2012 showed that approximately one in seven workers (14.9%) said they "missed days" or were late to work (14.4%) due to stress-related conditions (Hersch, 2012). Guillot (2013) presents three main symptoms associated with burnout: emotional exhaustion, reduced personal accomplishment, and depersonalization. Employees experiencing this condition become disconnected from the organization and typically see their productivity and performance decrease. Mindfulness-based meditation has been introduced as a viable intervention to counteract these conditions (Lomas et al., 2017). Mindfulness practices have been found to reduce stress and burnout, allowing individuals to focus their attention, improve their working memory capacity, and display more self-compassion (Roeser et al., 2013).

Multitasking has been related to negative consequences for personal health and effectiveness. When interruptions occur, people make up for time lost by working faster.

Working faster may increase employee stress, frustration, and pressure (Mark, Gudith, & Klocke, 2008). Ophir, Nass, and Wagner (2009) found that heavy multitaskers have more difficulty in filtering out irrelevant inputs. Meditation has been shown to counter these effects by enhancing attentional skills, allowing deeper concentration and more ability to switch between tasks. Participants trained in mindfulness practices have been found to work more congruently and in a less fragmented manner (Levy et al., 2012). Human attention is a trainable skill, and meditation is a vehicle whereby to attain it (Levy et al., 2012).

In addition to the benefits mentioned above, Walsh and Shapiro (2006) mention enhanced capacities in the areas of sense withdrawal, thought and cognition, clarity, emotional intelligence, and motivation, among others, as a result of mindfulness practice applications. According to these authors, Mindfulness enables the individual to shift his/her perspective and stand back and witness his/her life narrative rather than being immersed in it. It allows individuals to become more accountable for the decisions they make (Ludwig & Kabat-Zinn, 2008). Furthermore, mindfulness practices, such as meditation, have been found to increase creativity in participants (Müller et al., 2016). These practices have been related to change leaders and their capacity to effectively manage ambiguity (Chesley & Wylson, 2016). All this can have a significant impact in the workplace and enterprise environment.

**Is Mindfulness Applicable in the Workplace?**

Potential issues exist in mindful-related studies due to the heterogeneity in their design, ways of measuring outcomes, (Lomas et al., 2017), the small sample sizes, the length of the studies and follow-up periods, and “self-reported methods” (Walsh &

Shapiro, 2006, p. 230). Despite these concerns, several studies show an improvement in mental health, anxiety, stress, and anger management, among others, and at least two established Mindfulness interventions exist. Additionally, an opportunity exists in expanding the diversity of the occupations that are examined, with a particular focus on corporate settings (Lomas et al., 2017). There is also a perceived difference between westernized and Buddhist Mindfulness models. According to Lee (2017), Buddhism scholars have concerns regarding westernized Mindfulness models because they leave out the spiritual paradigms of Buddhism. They fear that what they call a "reductionist approach" may decrease the practice's effectiveness and make long term changes unsustainable.

Lyddy and Good (2017) question if individuals can be mindful in the workplace. They describe Mindfulness as a cognitive state of "being" (with a present focus) and work as a cognitive mode of "doing" (future and goal-oriented). If these two states can co-exist, the question that follows suit, according to the authors, is "How [can they co-exist]?" They suggest three states conceptualizing the relationship between "being" and "doing": Incompatible, Compatible, and Contingent. These are associated with three themes at work: Entanglement (where "doing" mode prevents "being" mode, such as when engaging in a cognitively-demanding task), Disentanglement (where "being" and "doing" modes co-exist), and Transitions between these two themes, which "impact workplace behaviors and outcomes" (p. 11). They conclude that individuals can be mindful at work, but that doing so can be a challenge and that Mindfulness may be readily adopted in roles that require relational qualities, (e.g., therapists and nurses).

Roeser et al. (2013) studied stress and burnout reduction. They mention limited information to determine if Mindfulness reduced absenteeism in the population under study. Additionally, measured physiological aspects like blood pressure, heart rate, and cortisol levels did not show significant differences compared with the control group. Levy et al. (2012) caution that an individual's attentional skill influences the impact mindfulness meditation has on multitasking in a high-stress level environment. Furthermore, they state that attention also depends on the type of task performed. Thus, the apparent benefits Mindfulness may exert on multitasking are not solely attributable to related practices. From the literature review, there appears to be potential for Mindfulness' application in the workplace, but also an opportunity to understand this impact more clearly and directly with regards to productivity and the bottom line.

**Productivity: Definition, Methods, Considerations, and Relation to Mindfulness**

Why is Mindfulness relevant for an Organizational Development (OD) practitioner to explore? Organizations are in search of identifying how they can achieve higher output without increasing costs; and they know that the organization's financial success is linked to an increase in productivity (Parker, 1983). OD practices are often aimed at increasing organizational effectiveness. Although opportunities exist for further research regarding Mindfulness' impact in organizations, literature and related studies present Mindfulness as triggering various benefits for organizations (Good et al., 2015; Levy et al., 2012; Lomas et al., 2017), including productivity.

Economists define productivity as, "An input-output relationship in which factors of production… are converted into outputs" (Burkhead & Hennigan, 1978, p. 34). Senior level managers, shareholders, and consumers see organizational productivity "as results,

profits, costs, product quantity and quality and return on investment" (Latham et al., 1981, p. 6). Productivity may also be seen as a "person's, machine's, factory's, system's, etc." level of efficiency and is measured by the relationship between the outputs generated versus the resources required to produce those outputs (Business Dictionary). A third definition of productivity is presented by Burkhead and Hennigan (1978) under the concept of "Technological Efficiency" which includes generating the same number of outputs using fewer inputs or, from an increase in outputs generated using the same amount of inputs (p. 34).

Latham et al. (1981) infer that productivity measurements such as cost, profits, and return on investment do not accurately measure individual performance. The authors state that most organizations measure individual performance based on traits such as "commitment, creativity, loyalty, initiative, and the like" (p. 7). Productivity is impacted by several factors and can be improved through several methods (Burkhead & Hennigan, 1978). Some of these methods include clarifying expectations, setting goals (e.g., Management by Objectives) (Latham et al., 1981), upgrading facilities and equipment, organizing quality circles, and inviting employee participation in productivity improvement efforts (Chisholm & Munzenrider, 1989). Other methodologies include Lean and related tools, adjusting employee physical demands and mental download (Shaikh et al., 2012), providing employee incentives, and performing technology transfers (Burkhead & Hennigan, 1978). Employee motivation and job satisfaction (Burkhead & Hennigan, 1978), as well as quality control standards (Banker et al., 1987), have also been said to increase productivity.

According to Schneier et al. (1992), globalization has added pressure on companies to increase productivity as a measure to remain competitive in the business environment. The continuous surge of white-collar jobs in the U.S. presents an additional challenge, yet related productivity measures are either unclear or ineffective. The authors explore different types of measures and their related efficacies to affect economic productivity and impact labor expense and company revenue:

a) Downsizing (pp. 1-5): When companies downsize, they reduce the workforce vs. the work itself. This results in frustrated, stressed-out employees who take fewer risks (which leads to the absence of innovative ideas that are required to increase productivity). Downsizing becomes a vicious cycle for organizations: first apparently yielding results through immediate workforce reduction, but eventually forcing companies to rehire employees to address the work that was not eliminated with the downsizing actions. Meanwhile, competitors have moved farther ahead in the competitive race.
b) Hiring freezes (p. 5).
c) Financial separation incentives: here, critical skills may be lost (p. 5).
d) Budgetary controls: may include job sharing, leave of absences, pay cuts, and demotions (pp. 6-7).
e) Time and motion studies (p. 7): applies mostly to blue collar jobs.
f) Task analysis (p. 7): identifies and eliminates non-value-added tasks.
g) Work effectiveness: encompasses “continuous improvement efforts, process improvement efforts, and work reengineering” (p. 7). This tactic invites

employees to be a part of the changes, making the actions easier to implement and more sustainable over time.

The paradox for organizations is that they want changes that yield results both quickly and sustainably. However, sustainable measures to improve productivity generally cannot be implemented quickly (Schneier et al., 1992). In addition to the tactics mentioned above, more companies are adopting Mindfulness practices in search of the productivity-related benefits it reportedly provides (Lieberman, 2015). Several related findings were discussed in the Mindfulness definition and proposed benefits section above.

**Productivity and Worker/Job Type**

One way to segment job types is into blue-collar and white-collar workers. *Blue collar workers* usually work directly with the product or "output generated by the firm" (Business Dictionary). Their contribution is often more perceptible. Their work is typically physical or tactical, such as in an assembly line, manufacturing operation, etc. This labor force is classified as "direct labor" since employees are directly engaged with the production of outputs the organization or company yields. *White collar workers* include employees whose job is more "mental" in nature or that entails administrative work often in an office setting (Business Dictionary). These employees are classified as "indirect labor" and add value by enabling production and related efficiencies. Their work is usually "knowledge-intensive, non-routine and unstructured" (Business Dictionary).

A shift has occurred away from a "manufacturing economy" into a "service economy" (Seidman, 1983). Data cited by Davis (1991) describes a shift from blue collar

to white collar workers, where between 1970 and 1980 the latter grew by 20% and where, by 1991, less than 30% of U.S. workers performed manufacturing type of roles. Schneier et al. (1992) mention that by the 1990s, white collar jobs outnumbered blue collar ones two to one. The literature on productivity and its relation to tactical (blue collar) and strategic (white collar) type of jobs shows that it is easier to measure productivity in the former (Davis, 1991; Schneier et al., 1992). More clearly defined duties, standards, schedules, and objectives contribute to this being the case (Davis, 1991). Office work, on the other hand, is harder to measure as it generally includes "processing information vs. physical goods" (Davis, 1991, p. 56); white-collar workers usually are evaluated on how they perform their work (e.g., how they make decisions, how and if results are achieved, how driven they are). Schneier et al. (1992) categorize white collar work distribution as correcting errors and solving problems (40%), ineffective, unnecessary, and/or optional work (10%) and actually necessary, accurate, and useful work (50%).

**Productivity Considerations**

The literature points to differences in productivity measures and improvement programs for tactical (blue collar) and strategic (white collar) types of roles. Some obstacles affect individual job categories. For example, tactical jobs are impacted by the specifications that need to be followed to perform a task as well as by the related training received. Strategic roles are affected by the degree of autonomy and empowerment granted, the expectations and targets to be met, and by the support received from others in the achievement of intended goals (Brown & Mitchell, 1988). Schneier et al. (1992) state that by the 1990s, almost no productivity improvement was evidenced in white collar jobs overall.

Despite differences, there is evidence that some productivity improvement measures serve both direct and indirect labor. For example, in 1974, Motorola implemented a program for improved productivity. Although many years have passed since the implementation of this program, the methodology used – introducing a common productivity language in the company, making the data visible to employees, and drafting plans accordingly – proved beneficial for both job types (Scott, 1974). Parker (1983) stresses the importance of linking company success with opportunities for the workforce. Parker (1983) also points out the role managers play in employee productivity. Banker et al. (1987) signal out innovations in technology and efficient floor shop management as examples whereby plants may secure productivity gains. Machine or equipment failure, missing materials or resources, poor lighting in work facilities, work schedules, and the work configuration are other examples of factors that can impact productivity (Brown & Mitchell, 1988). All of these actions influence productivity for employees in tactical and strategic types of roles.

Additionally, Jett and George (2003) mention how experiencing an interruption has the potential to impact employee productivity. Interruptions can be considered a type of performance obstacle (Brown & Mitchell, 1988) and occur when an employee is trying to complete a task and experiences a disruption that results in a delay in completion or delivery of the task (Jett & George, 2003). An example of this is the unexpected employee visits managers experience routinely, which may contribute to what Perlow (1999) mentions as "time famine – a feeling of having too much to do and not enough time to do it" (p. 57). Jett and George (2003) cite four types of interruptions at work, each with a distinct impact for the employee: intrusions, breaks, distractions, and

discrepancies. Intrusions may impact productivity by affecting focus and attention. They create a temporary pause in an employee's work. They can create stress and exert pressure on an employee to get back on track. Breaks may be planned or unplanned. They halt the momentum. Distractions interrupt concentration. They can be harmful when they divert the employee's attention from the task at hand. When working with complex or challenging tasks, a distraction can impact decision-making ability and time (Speier, Valacich, & Vessey, 1999, p. 350). Discrepancies exist when what is expected by the employee differs from what he/she observes, and can negatively impact productivity when they make the employee focus on the perceived inconsistency (Jett & George, 2003). The possibility opens up to calm and alter employees' perceptions through practices such as mindful meditation (Brown & Mitchell, 1988). Thus, given the benefits previously discussed that accompany Mindfulness, it can be a useful tool to respond to work interruptions and enhance employee productivity.

**Summary**

Mindfulness involves being present and aware of one's thoughts and emotions at a given point in time without exerting judgment (Kabat-Zinn, 2003; Ludwig & Kabat-Zinn, 2008). Different mindfulness practices exist (Kabat-Zinn, 1994; Lutz et al., 2008; Salzberg, 1998; Walsh & Shapiro, 2006) and their application has resulted in several benefits (Good et al., 2015; Levy et al., 2012; Lomas et al., 2017; Ludwig & Kabat-Zinn, 2008; Roeser et al., 2013; Walsh & Shapiro, 2006). When considered for the workplace, several questions and issues arise regarding Mindfulness' role (Lee 2017; Levy et al., 2012; Lomas et al., 2017; Lyddy & Good, 2017; Roeser et al., 2013; Walsh & Shapiro 2006).

Given the link between productivity and an organization's financial success (Parker, 1983), companies are continually searching for ways to increase productivity. Productivity looks at the relationship between outputs and the respective resources required (Business Dictionary). It includes producing more with the same amount of resources or producing the same using fewer resources (Burkhead & Hennigan, 1978). Different measures exist to increase productivity (Banker et al., 1987; Burkhead & Hennigan, 1978; Chisholm & Munzenrider, 1989; Latham et al., 1981; Schneier et al., 1992; Shaikh et al., 2012). Some of these apply to both tactical and strategic types of roles and others apply to individual job types (Banker et al., 1987; Parker, 1983; Schneier et al., 1992; Scott, 1974). Companies are increasingly adopting Mindfulness and mindfulness practices as a tactic to increase productivity (Lieberman, 2015). Nevertheless, an opportunity exists to understand Mindfulness' impact on employee productivity further. With an increase in white-collar type of jobs (Davis, 1991; Schneier et al., 1992; Seidman, 1983), the question remains regarding if and how Mindfulness' impact on productivity differs depending on the job type employees perform. This opportunity and question are explored in this study.

## Chapter 3: Methodology

This study explored the role Mindfulness plays in employee productivity. It took a more in-depth look at increased productivity as a potential benefit stemming from the adoption of Mindfulness practices. Furthermore, it sought to understand if there is a difference in the impact of mindfulness practices on employee productivity when employees implement these in different types of jobs (tactical and strategic). It thus sought to answer two questions:

a) What impact does Mindfulness have on employee productivity?

b) Does this impact look different in tactical vs. strategic types of roles?

The following hypotheses were tested:

*Hypothesis 1 (H1):* Study participants will become more mindful after having gone through a mindfulness practices workshop.

*Hypothesis 2 (H2):* Mindfulness and mindfulness practices have a positive impact on employee productivity.

*Hypothesis 3 (H3):* Mindfulness and mindfulness practices impact employee productivity differently based on the type of role (tactical or strategic) where they are being applied.

The rest of this chapter will focus on describing the research design, the sample population, the human subjects' protection mechanisms employed, the instruments used for data collection, and the process used to analyze the data gathered.

### Research Design

This study categorized participants into tactical and strategic type of roles and used a mixed-methods approach (Creswell, 2014). Data was gathered at two intervals

during the study. The first interval (T1) was intended to measure a baseline (pre-workshop) for Mindfulness and productivity. The Mindfulness baseline was measured by administering a printed survey to 100% of the research participants (n = 30). The Mindful Awareness Attention Scale (MAAS: Appendix A) was chosen for this purpose and will be described in the instrumentation and data collection section below. Demographics and questions related to productivity were included in a separate questionnaire (Appendix A). As part of the baseline, semi-structured interviews were conducted with a sample of the study participants (n = 16) to understand productivity-related information. The interview questions (Appendix B) were developed using the literature as a basis.

An 8-session Mindfulness workshop was held for participants to learn a meditation-based practice. Upon workshop completion (T2), the MAAS and questionnaire were applied again to 100% of program participants who completed the sessions (n = 27) and the same sample from T1 (n = 16) was interviewed again.

**Research Sample**

This study categorized participants into tactical and strategic type of roles. Tactical roles included blue-collar, non-exempt, and transactional work where specific pre-defined operational processes exist. In other words, where there is little room to deviate from those established processes and where work is mainly routine. Strategic type of roles included exempt roles where employees apply more judgment, cognition, and personal criteria, where work is less routine, and where employees can make decisions regarding strategies and the approach to their work.

The research setting was a multinational company with operations in Costa Rica. Purposeful sampling was used by presenting the workshop and project to several organizational leaders in two support departments (targeting participants in strategic roles) and one core organization (targeting participants in tactical roles). They, in turn, announced the project in their organizations and identified volunteers. Convenience sampling was used to fill additional seats by opening the workshop to others who met the target audience, regardless of their organization. Both offerings were presented as voluntary and asked people to opt-in accordingly (Appendix E). 30 seats were offered in anticipation of a drop-out rate of five participants, which was in line with the number of participants the company workshop usually hosts and with historic program drop-out rates. Of the 30 participants, nine were executing tactical roles and 21 were executing strategic roles. At the end of the study, 27 participants had completed the workshop. Of these, eight were executing tactical roles and 19 were executing strategic roles. Participant eligibility included: not having prior Mindfulness practice training, having manager's agreement to invest time in the workshop, successful (or better) performance at the time of the study, and being able to dedicate time to workshop attendance and to applying related learned practices. Participants included both males and females who were at least 20 years old, who were full-time, permanent employees, with at least one year in the company, and who had a history of successful (or better) performance.

**Human Subjects' Protection**

In agreement with the participating company, the company, participants' names, and identity will remain undisclosed. Only aggregated, general findings were shared with program instructors, participants, and their managers. Before opting in, participants were

told about the purpose of the study, about the process to be followed, and how the data collected would be used. They were asked to acknowledge receiving this information (Appendix E). Completed printed surveys (questionnaires) were stored in the researcher's locked personal locker while at the enterprise's premises and in a locked drawer in the researcher's home after that until graduation requirements were met. Interview data is documented in the researcher's computer, which was locked between interviews in the company setting and are stored appropriately in the researcher's home. Only the researcher had access to individual participant responses.

**Instrumentation and Data Collection**

The MAAS was chosen to assess participants' Mindfulness level. It measures attentiveness and awareness, focused on day-to-day experiences (Brown & Ryan, 2003). The survey contains 15 questions and a Likert scale consisting of six choices ranging from 1 = Almost Always to 6 = Almost Never. The survey typically takes five minutes to complete. The survey was distributed physically to 100% of program participants both in the baseline (T1) and post the intervention (T2). As part of the baseline, semi-structured interviews were performed with a sample of the study participants (n = 16). Seven interviewees were executing tactical roles and nine were executing strategic roles. The interview questions were developed using the literature as a basis; all interviews (but one) were held face to face.

The intervention consisted of an 8-session meditation-based Mindfulness workshop that had been created by the company. Each session had a two-hour duration; these were held weekly, with a break during the last weeks of the year to accommodate participant availability during the holidays. Journaling was included as part of each

session's activities. Additionally, participants were asked to dedicate between one to 10 minutes a day to engage in mindful meditation and to journal about the experience in between sessions. Three Mindfulness-related books were provided to each course participant; however, only one was referenced during the session.

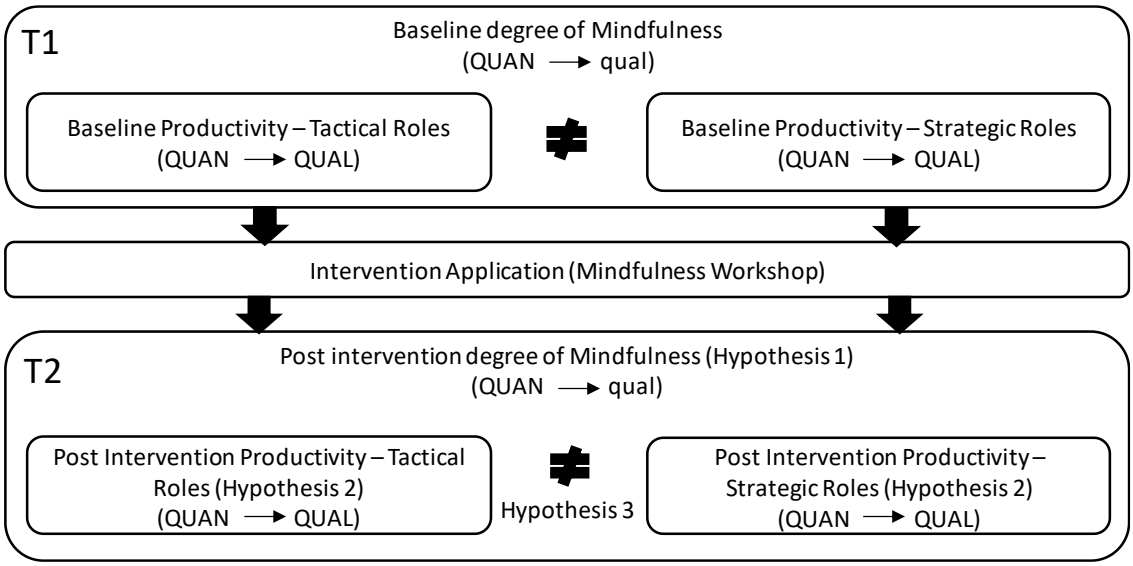
Upon workshop completion, the MAAS was applied again to measure changes in Mindfulness levels. This survey and a questionnaire (Appendix C) were applied at the end of the last session to the 27 participants who completed the workshop. Additionally, the same 16 baseline interviewees were invited to and participated in a post-workshop interview. These interviews were all conducted face to face and expanded on survey results (Appendix D). The questions included open-ended and "rating" questions and were also developed using the literature as a basis.

**Data Analysis**

Descriptive statistics were captured for the sample size mean and standard deviation at the baseline (T1) and post-intervention (T2) timeframes. This was done to assess if there was a significant increase in the mean score and a reduction in the variation of responses. For this purpose, the researcher conducted a double-sided, two-sample t-test for the mean and a test of equal variances for the standard deviation. This data was used to determine if there was an increase in Mindfulness levels between T1 and T2. The same analysis was used for productivity-related factors in the baseline and post-intervention questionnaire such as ease of coping with stress and the level of concentration required in the role, as shown in Figure 1.

**Figure 1**

***Research Model***




To further understand hypothesis 3, substantive categorization and open coding were used to identify themes in the interview data (Maxwell, 2013). Related commonalities and differences in both job types were assessed.

**Validity**

The MAAS is a valid and reliable Mindfulness measurement instrument proven to be useful for use with the general adult population (Brown & Ryan, 2003). Its use helped prevent potential instrument validity threats (Creswell, 2014).

Interview questions were reviewed with an individual who possesses characteristics similar to the population expected for the study to ensure questions were interpreted as intended. The interview sample was chosen at random from within the participating population. This randomization was intended to decrease the threat to validity that may stem from participant selection. To reduce the threat of validity that may come from participants dropping out of the experiment (Creswell, 2014), 30 seats were offered for the

workshop and study. This addressed the historic program drop-out rates and helped ensure the 25-minimum participant target.

In addition to the above, results and findings were presented to the Mindfulness Program instructor for peer debriefing. Member checking was also employed by having program/study participants see the results of the study and indicate if these resonated with them or not (Creswell, 2014).

**Summary**

This chapter reviewed the study questions and the related hypotheses. It described the research design and the participant sample. It also covered the steps followed to ensure human subjects' protection. Instruments used and data collection mechanisms were detailed. Finally, data analysis methods were mentioned as were the ways in which validity was pursued.

## Chapter 4: Results and Findings

This chapter will look at both the quantitative results and the qualitative findings in detail. It will compare these results against the hypotheses that were defined to help answer the research questions of:

a) What impact does Mindfulness have on employee productivity?

b) Does this impact look different in tactical vs. strategic type of roles?

The study included 30 participants going into the intervention, all performing tactical or strategic type of roles and meeting the participant eligibility criteria described previously in this paper. These participants completed the MAAS and a questionnaire to measure Mindfulness skill and productivity baselines. 16 participants were interviewed before going through the workshop. Of these, seven were performing tactical roles and nine were performing strategic roles. Three participants dropped out of the workshop, resulting in 27 going through the intervention and completing the related surveys, questionnaires and/or interviews accordingly. The program participants displayed the characteristics shown in Table 1.

**Table 1**

***Study Participant Demographics***

| | **Females** | | **Males** | |
|---|---|---|---|---|
| **Before Intervention** | 12 | 40% | 18 | 60% |
| **After Intervention** | 12 | 44% | 15 | 56% |

| **Age Range** | **20-25 years old** | | **26 - 30 years old** | | **31-35 years old** | | **36-40 years old** | | **41+ years old** | |
|---|---|---|---|---|---|---|---|---|---|---|
| Before Intervention | 2 | 7% | 6 | 20% | 3 | 10% | 11 | 37% | 8 | 27% |
| After Intervention | 2 | 7% | 6 | 22% | 1 | 4% | 10 | 37% | 8 | 30% |

| **Tenure (in Company)** | **1-3 Years** | | **3-5 Years** | | **5-7 years** | | **> 7 years** | |
|---|---|---|---|---|---|---|---|---|
| Before Intervention | 2 | 7% | 5 | 17% | 2 | 7% | 21 | 70% |
| After Intervention | 1 | 4% | 5 | 19% | 2 | 7% | 19 | 70% |

| **Length in Job** | **< 1 Year** | | **1-3 Years** | | **3-5 Years** | | **5-7 Years** | | **> 7 years** | |
|---|---|---|---|---|---|---|---|---|---|---|
| Before Intervention | 2 | 7% | 12 | 40% | 11 | 37% | 0 | 0% | 5 | 17% |
| After Intervention | 1 | 4% | 10 | 37% | 11 | 41% | 1 | 4% | 4 | 15% |

The researcher defined the following criteria to segment participants into tactical and strategic roles:

- Tactical types of roles were to be classified as blue-collar and non-exempt type of work. These included roles that are transactional, where specific pre-defined operational processes exist, where there is little room to deviate from those established processes and where work is mainly routine.

- Strategic types of roles included exempt roles where employees apply more judgment and personal criteria, where work is less routine in nature, and where employees can make decisions regarding strategies and the approach to their work.

In the following sections, the three formulated hypotheses are evaluated in more detail against the data collected.

**Hypothesis 1**

*Study participants will become more mindful after having gone through a mindfulness practices workshop.*

The MAAS was applied as a baseline to measure the degree of Mindfulness in program participants before going through the workshop. A total of 30 participants (100% of the population) completed the MAAS during the baseline. This population consisted of employees in both tactical and strategic type of roles, both female and male, who fit the participant requirements. During the baseline, the researcher inadvertently omitted to segment the answers by role type; thus, the results collected during this phase depict the entire population. No other segmentation of the data had been intended or was done during the baseline.

After the Mindfulness workshop, the MAAS was administered to the participants who completed the program (n = 27). Role types were identified this time around. Since the data was not segmented by role type at the baseline, the results before and after the Mindfulness workshop were analyzed between the populations as a whole to see if there was a shift in the degree of Mindfulness. For post-intervention results only, in addition to evaluating the sample as a whole, tactical and strategic roles were analyzed and compared

to see if one group displayed a higher degree of Mindfulness over the other group after the workshop, or not. No method was used to identify respondents' specific responses during the MAAS. Thus, the samples filling out the survey before and after the intervention, are considered independent samples.

Descriptive statistics were captured for the sample size mean and standard deviation at the baseline and post-intervention timeframes. This was done to assess if there was a significant increase in the mean score and a reduction in the variation of responses. For this purpose, the researcher conducted a double-sided, two-sample t-test for the mean and a test of equal variances for the standard deviation. The results of this analysis are shown in Table 2.

**Table 2**

***MAAS Survey Results for the Entire Population***

| Question | Time Period | N | Mean Score | Standard Deviation | T-Test Value | Brown Forsythe p-value |
|---|---|---|---|---|---|---|
| Q1. I could be experiencing some emotion and not be conscious of it until some time later. | Baseline | 30 | 3.7333 | 1.2848 | 0.2772 | 0.0091 |
| | Post Intervention | 27 | 4.0370 | 0.7586 | | |
| Q2. I break or spill things because of carelessness, not paying attention, or thinking of something else. | Baseline | 30 | 3.9000 | 1.7291 | 0.0397 | 0.0167 |
| | Post Intervention | 27 | 4.7037 | 1.1030 | | |
| Q3. I find it difficult to stay focused on what's happening in the present. | Baseline | 30 | 3.3000 | 1.3933 | 0.0071 | 0.0792 |
| | Post Intervention | 27 | 4.2222 | 1.0500 | | |
| Q4. I tend to walk quickly to get where I'm getting without paying attention to what I experience along the way. | Baseline | 30 | 2.7333 | 1.3880 | 0.0007 | 0.0964 |
| | Post Intervention | 27 | 3.8889 | 0.9740 | | |
| Q5. I tend to notice feelings of physical tension or discomfort until they really grab my attention. | Baseline | 30 | 3.1333 | 1.3322 | 0.0002 | 0.3567 |
| | Post Intervention | 27 | 4.4444 | 1.0860 | | |
| Q6. I forget a person's name almost as soon as I've been told it for the first time. | Baseline | 30 | 2.3667 | 1.6709 | 0.0028 | 0.6498 |
| | Post Intervention | 27 | 3.6296 | 1.3344 | | |
| Q7. It seems I am "running on automatic," without much awareness of what I'm doing. | Baseline | 30 | 3.1333 | 1.1958 | 0.0004 | 0.2297 |
| | Post Intervention | 27 | 4.1852 | 0.8787 | | |
| Q8. I rush through activities without being really attentive to them. | Baseline | 30 | 3.3667 | 1.0981 | 0.0009 | 0.6196 |
| | Post Intervention | 27 | 4.2963 | 0.8689 | | |
| Q9. I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there. | Baseline | 30 | 3.4000 | 1.1326 | 0.0026 | 0.7907 |
| | Post Intervention | 27 | 4.2963 | 0.9929 | | |
| Q10. I do jobs or tasks automatically, without being aware of what I'm doing. | Baseline | 30 | 3.4333 | 1.1943 | 0.0081 | 0.5627 |
| | Post Intervention | 27 | 4.2593 | 1.0595 | | |
| Q11. I find myself listening to someone with one ear, doing something else at the same time. | Baseline | 30 | 3.0000 | 1.4142 | 0.002 | 0.7028 |
| | Post Intervention | 27 | 4.1852 | 1.3312 | | |

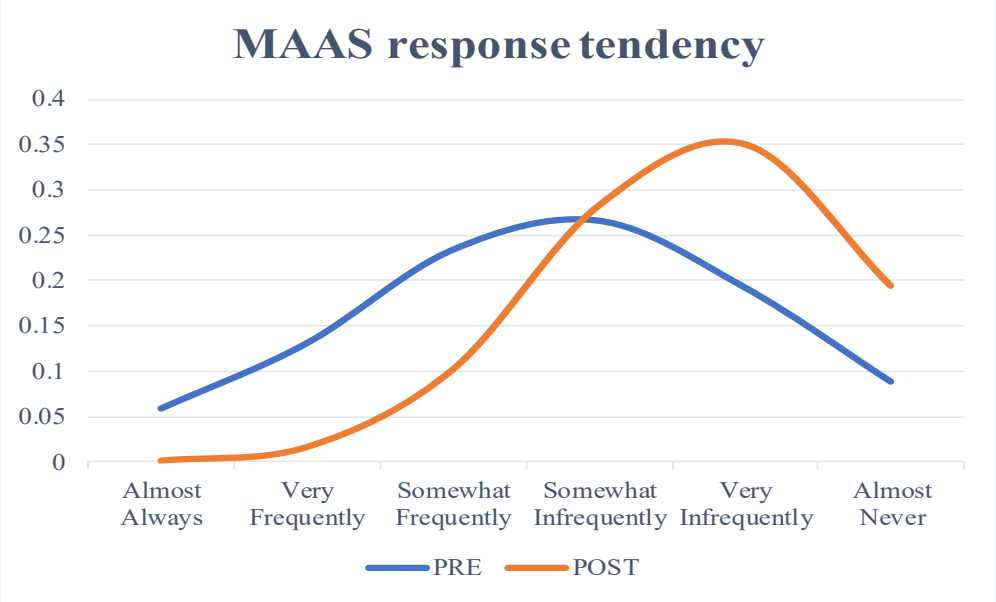
| | | | | | | |
|---|---|---|---|---|---|---|
| Q12. I drive places on 'automatic pilot' and then wonder why I went there. | Baseline | 30 | 3.6333 | 1.7117 | 0.0376 | 0.0077 |
| | Post Intervention | 27 | 4.4444 | 1.1209 | | |
| Q13. I find myself preoccupied with the future or the past. I find myself doing things without paying attention. | Baseline | 30 | 2.6667 | 1.3730 | 0.0001 | 0.1841 |
| | Post Intervention | 27 | 4.0000 | 0.9199 | | |
| Q14. I find myself doing things without paying attention. | Baseline | 30 | 3.0667 | 1.2576 | 0.0002 | 0.5077 |
| | Post Intervention | 27 | 4.2963 | 0.9929 | | |
| Q15. I snack without being aware that I'm eating. | Baseline | 30 | 4.1667 | 1.8399 | 0.018 | 0.0281 |
| | Post Intervention | 27 | 5.1111 | 0.9740 | | |

As displayed in Table 2, all means increased after running the intervention and all but Q1 show a statistically significant difference. Four questions (Q1, Q2, Q12, and Q15) show a statistically significant decrease in variation responses, displaying a narrower range in responses. These results point to program participants becoming more mindful as a result of going through the workshop, as stipulated in hypothesis 1.

Figure 2 shows the distribution of MAAS responses before and after the intervention for both populations, displaying a shift between the two instances for the entire population regardless of role type and contributing to validating hypothesis 1 as well.

**Figure 2**

***MAAS Response Tendency, Entire Population***




Source: MAAS survey results, before and after intervention, where n=30 and n=27, respectively

Applying the same statistical analysis as for the entire population, Table 3 shows the comparison between tactical and strategic roles post the intervention.

**Table 3**

***MAAS Survey Results by Role, After the Intervention***

| Question | Role Type | N | Mean Score | Standard Deviation | T-Test Value | Brown Forsythe p-value |
|---|---|---|---|---|---|---|
| Q1. I could be experiencing some emotion and not be conscious of it until some time later. | Strategic | 19 | 4.1053 | 0.6578 | 0.4822 | 0.4146 |
| | Tactical | 8 | 3.8750 | 0.9910 | | |
| Q2. I break or spill things because of carelessness, not paying attention, or thinking of something else. | Strategic | 19 | 4.5263 | 1.0733 | 0.2037 | 0.9500 |
| | Tactical | 8 | 5.1250 | 1.1260 | | |
| Q3. I find it difficult to stay focused on what's happening in the present. | Strategic | 19 | 4.1053 | 1.1970 | 0.3828 | 0.0882 |
| | Tactical | 8 | 4.5000 | 0.5345 | | |
| Q4. I tend to walk quickly to get where I'm getting without paying attention to what I experience along the way. | Strategic | 19 | 3.7368 | 1.0457 | 0.2178 | 0.5659 |
| | Tactical | 8 | 4.2500 | 0.7071 | | |
| Q5. I tend to notice feelings of physical tension or discomfort until they really grab my attention. | Strategic | 19 | 4.4211 | 1.1698 | 0.8670 | 0.9188 |
| | Tactical | 8 | 4.5000 | 0.9258 | | |
| Q6. I forget a person's name almost as soon as I've been told it for the first time. | Strategic | 19 | 3.6842 | 1.4163 | 0.7502 | 0.6274 |
| | Tactical | 8 | 3.5000 | 1.1952 | | |
| Q7. It seems I am "running on automatic," without much awareness of what I'm doing. | Strategic | 19 | 4.2105 | 0.8550 | 0.8225 | 0.9808 |
| | Tactical | 8 | 4.1250 | 0.9910 | | |
| Q8. I rush through activities without being really attentive to them. | Strategic | 19 | 4.1579 | 0.9582 | 0.2082 | 0.2565 |
| | Tactical | 8 | 4.6250 | 0.5175 | | |
| Q9. I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there. | Strategic | 19 | 4.2632 | 0.9912 | 0.7951 | 0.7385 |
| | Tactical | 8 | 4.3750 | 1.0607 | | |
| Q10. I do jobs or tasks automatically, without being aware of what I'm doing. | Strategic | 19 | 4.2632 | 1.1471 | 0.9772 | 0.6138 |
| | Tactical | 8 | 4.2500 | 0.8864 | | |
| Q11. I find myself listening to someone with one ear, doing something else at the same time. | Strategic | 19 | 4.2105 | 1.3572 | 0.8823 | 0.9126 |
| | Tactical | 8 | 4.1250 | 1.3562 | | |

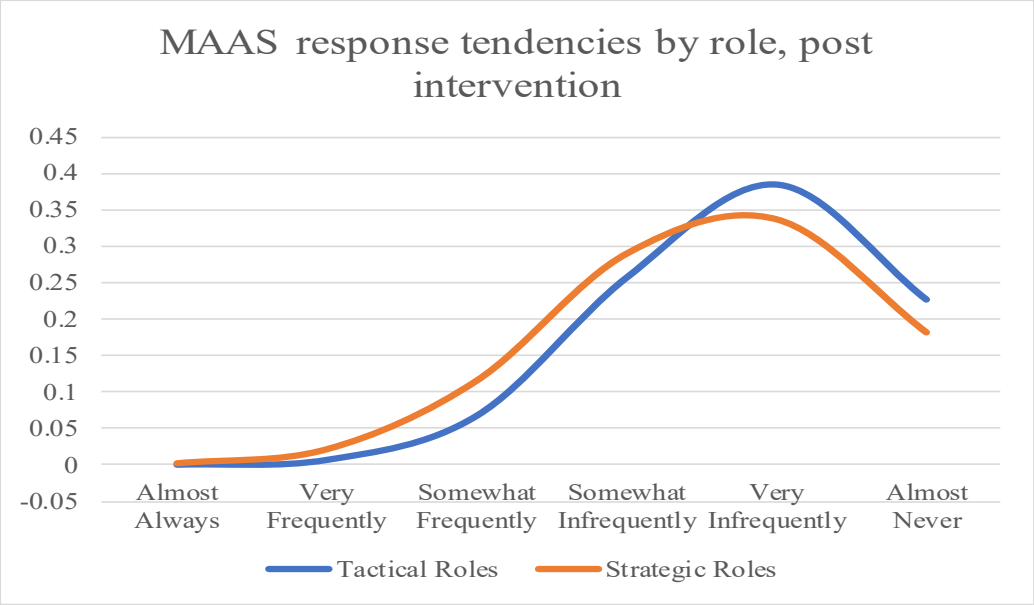
| | | | | | | |
|---|---|---|---|---|---|---|
| Q12. I drive places on 'automatic pilot' and then wonder why I went there. | Strategic | 19 | 4.5790 | 1.0706 | 0.3465 | 0.9216 |
| | Tactical | 8 | 4.1250 | 1.2464 | | |
| Q13. I find myself preoccupied with the future or the past. I find myself doing things without paying attention. | Strategic | 19 | 3.6842 | 0.8852 | 0.0037 | 0.1631 |
| | Tactical | 8 | 4.7500 | 0.4629 | | |
| Q14. I find myself doing things without paying attention. | Strategic | 19 | 4.0000 | 1.0000 | 0.0137 | 0.0682 |
| | Tactical | 8 | 5.0000 | 0.5345 | | |
| Q15. I snack without being aware that I'm eating. | Strategic | 19 | 5.0000 | 1.0541 | 0.3713 | 0.3528 |
| | Tactical | 8 | 5.3750 | 0.7440 | | |

As Table 3 shows, except for two questions (Q13 and Q14), means were not statistically different. There was no statistical difference in the variation of responses either. Therefore, it can be concluded that, while Mindfulness levels increased for both populations as shown previously in Table 2, there was no significant difference in the increase in Mindfulness between one population and the other.

Figure 3 shows the distribution of MAAS responses after the intervention for tactical and strategic type of roles, again showing that there is little to no difference between the two roles post the intervention.

**Figure 3**

***MAAS Response Tendencies by Role, Post-Intervention***




Source: MAAS Survey responses, after intervention, where n=8 for tactical roles and n=19 for strategic roles

Mindfulness definitions include aspects such as awareness, intentionally paying attention, and being in the present moment, among others (Kabat-Zinn, 2003; Lomas et al., 2017; Lyddy & Good 2017). Table 4 shows related changes were reported in post-workshop interviews that included the same 16 participants who were interviewed during the baseline (where seven performed tactical roles and nine performed strategic roles).

**Table 4**

***Reported Changes Related to Increased Mindfulness, Post the Intervention***

| Theme | Examples Provided | Frequency of Occurrence |
|---|---|---|
| Shifts in levels of awareness | * Increased consciousness and acceptance of one's emotions<br>* Acknowledging emotions in a way that allows to keep them in check<br>*Feeling calmer and pausing when engaged in disagreements | These changes were mentioned 27 times in the 16 interviews held. |
| Changes in personal relationships | * Strengthened connections<br>* Being present more<br>* Pausing and breathing when in an argument | These changes were mentioned seven times in the 16 interviews held. |
| Physical Changes | * Awareness of physical discomfort<br>* Changes in sleep patterns | These changes were mentioned three times in 16 interviews. |

S*hifts in levels of awareness* were mentioned the most. A participant in a strategic role shared that, before the intervention, she would forget if she had shampooed her hair already or would easily misplace personal items. These behaviors have become less frequent as a result of engaging in the workshop. One participant, also in a strategic role, stated that she is now able to notice her heartbeat and calm down. With respect to *changes in personal relationships*, one participant in a strategic role said that learning about gratitude and compassion strengthened the connection with his mother as he grew more thankful of her caring for his ill father. Several commented on the change the learnings have brought about at home – being more present, pausing and breathing when engaged in a disagreement with a loved one, etc. Finally, regarding *physical changes*, a participant in a strategic role claims to have become aware of a pain in her knee (as a result of the body scans), deciding to tend to it accordingly. A couple of participants, one in each role type, experienced changes in sleep patterns. Both had experienced problems

sleeping before the intervention. This situation improved for them. One was even able to stop taking related medication.

**Hypothesis 2**

*Mindfulness and mindfulness practices have a positive impact on employee productivity.*

Productivity was defined in the literature as "an input-output relationship in which factors of production… are converted into outputs" (Burkhead & Hennigan, 1978, p. 34), as "results, profits, costs, product quantity and quality and return on investment" (Latham et al., 1981, p. 6), as a "person's, machine's, factory's, system's, etc." level of efficiency measured by the relationship between the outputs generated versus the resources required to produce those outputs (Business Dictionary), and as "Technological Efficiency" which includes producing the same number of outputs using less inputs or, increasing outputs generated using the same number of inputs (Burkhead & Hennigan, 1978, p. 34). Participants' definitions of productivity in their role varied significantly. Those in tactical roles defined productivity as equipment usage, equipment availability, equipment maintenance (corrective and preventive), customer service, and production goal achievement. Those in strategic roles defined productivity as both tangible and intangible. Tangible elements included renewed contracts, service level agreements being met, reduction of product defects, time invested to complete a task, and timely employee and vendor payment, among others. Intangible elements of productivity for this population included things like increased trust, high employee engagement and motivation, and progressive employee career development when the participant held a management role. It also included increased organization effectiveness (defined as

improved work processes), obtaining results through teams, and continuous improvements. This difference in tactical roles defining productivity with more tangible elements aligns to the definition presented by Business Dictionary stating that productivity in tactical roles is "more perceptible."

Performance (productivity) measures varied from person to person. Except for volume in tactical roles and for MBOs in strategic roles, the frequency with which each measure was reported changed for both roles before and after the workshop. These differences are shown in Table 5

**Table 5**

***Performance (Productivity) Measures***

| | Quality | Service Level Agreements | Volume | MBOs | None of these |
|---|---|---|---|---|---|
| Frequency of Responses, Before intervention, Tactical Roles (n=9) | 7 | 5 | 7 | 7 | 0 |
| Frequency of Responses, After intervention, Tactical Roles (n=8) | 8 | 3 | 7 | 5 | 0 |
| Frequency of Responses, Before intervention, Strategic Roles (n=21) | 8 | 11 | 3 | 12 | 4 |
| Frequency of Responses, After intervention, Strategic Roles (n=19) | 11 | 9 | 4 | 12 | 4 |

In addition, participants mentioned a wide range of additional methods to measure their performance or productivity. Except for feedback, measurements described by participants in tactical roles were more objective in nature (i.e., planned vs. actual production, equipment availability, quality). Those in strategic roles tended to describe

both objective and subjective measurements (i.e., timely deliverables, adherence to service level agreements, psychological safety, personal growth, type of leadership conversations, employee trust and motivation). The difference and variety in productivity definitions and measurements described by the participants made it difficult to determine a specific or generalized productivity measure to use to compare data results.

Before the intervention, seven participants in tactical roles and nine participants in strategic roles stated that their productivity metrics were on track. Those in tactical roles said that deviations from productivity metrics were due to malfunctions or complications with equipment. Those in tactical roles and one participant in a strategic role also mentioned having group productivity metrics in addition to individual ones. Tools to increase productivity mentioned by participants in both roles included sharing best-known practices, attending training, obtaining feedback, and learning from peers or role models. Participants in tactical roles also cited studying manuals and job aids as a way to increase productivity. Participants in strategic roles included reflecting as a way to increase their productivity.

As seen in the literature, stress, distractions, and interruptions are elements that may impact employee productivity (Davis, 2014; Hersch 2012; Jett & George, 2003; Lomas et al., 2017; Sandi & Pinelo-Nava, 2006; Speier, Valacich & Vessey, 1999). Therefore, the following questions were asked before and after the intervention to assess the stress level being experienced by the participants, the ease of coping with this stress level, the level of concentration required to complete tasks, and the frequency of distractions and interruptions experienced by the program participants:

- On a scale of 1-10 (where one is low), how stressful would you say your job is?
- On a scale of 1-10 (where one is low), how able are you to cope with this stress level?
- On a scale of 1 – 10 (where one is low), how much concentration do your tasks require?
- On a scale of 1 – 10 (where one is low), how often are you affected by interruptions or distractions at work?

Table 6 displays the results to these questions before and after the intervention for tactical roles.

**Table 6**

***Tactical Role Results***

| Question | Phase | N | Mean Score | Standard Deviation | T-Test Value | Brown Forsythe p-value |
|---|---|---|---|---|---|---|
| On a scale of 1-10, how stressful would you say your job is? | Baseline | 9 | 6.4444 | 2.3511 | 0.46 | 0.1234 |
| | Post Intervention | 8 | 7.1250 | 0.9910 | | |
| On a scale of 1-10, how able are you to cope with this stress level? | Baseline | 9 | 7.8889 | 0.9280 | 0.262 | 0.0982 |
| | Post Intervention | 8 | 7.0000 | 2.0702 | | |
| On a scale of 1 - 10, how much concentration do your tasks require? | Baseline | 9 | 8.5556 | 1.6667 | 0.413 | 0.6314 |
| | Post Intervention | 8 | 9.1250 | 0.9910 | | |
| On a scale of 1 - 10, how often are you affected by interruptions or distractions at work? | Baseline | 9 | 8.3333 | 1.3229 | 0.58 | 0.5277 |
| | Post Intervention | 8 | 8.0000 | 1.0690 | | |

Significance level: 0.05

There were no statistical significant differences in the means or the variances of responses for any of the questions. Work stress levels, the ability to cope with these, the

amount of concentration required to perform work tasks, and the frequency of experiencing interruptions or distractions at work did not differ significantly between the two periods under study for those in tactical roles.

Table 7 shows there were no statistical differences in the means for any of the four questions asked to participants in strategic roles. Except for the stress levels, the questions asked do not show a significant difference in the variance of responses either.

**Table 7**

***Strategic Role Results***

| Question | Phase | N | Mean Score | Standard Deviation | T-Test Value | Brown Forsythe p-value |
|---|---|---|---|---|---|---|
| On a scale of 1-10, how stressful would you say your job is? | Baseline | 21 | 7.4762 | 1.0779 | 0.4171 | 0.0458 |
| | Post Intervention | 19 | 7.0526 | 1.9923 | | |
| On a scale of 1-10, how able are you to cope with this stress level? | Baseline | 21 | 7.1750 | 1.6000 | 0.0867 | 0.0920 |
| | Post Intervention | 19 | 7.9211 | 0.9467 | | |
| On a scale of 1 - 10, how much concentration do your tasks require? | Baseline | 21 | 8.6191 | 1.0235 | 0.9753 | 0.3032 |
| | Post Intervention | 19 | 8.6316 | 1.4985 | | |
| On a scale of 1 - 10, how often are you affected by interruptions or distractions at work? | Baseline | 21 | 8.0238 | 1.4873 | 0.2763 | 0.3857 |
| | Post Intervention | 19 | 7.4211 | 1.9527 | | |

Significance level: 0.05

In interviews performed before the intervention, a question was asked regarding the impact of stress in participants' lives. The results are depicted in Table 8.

**Table 8**

***Pre-Intervention Interview Results***

| Question | Theme | Examples Provided | Theme Frequency |
|---|---|---|---|
| What impact does this stress level have on you? | Impact on family life | Less energy to actively share with loved ones (family); Being irritable; Displaying little tolerance | 5 out of 16 interviewees |
| | Impact on them as a person | Altered sleep patterns; Burnout; Doubting capabilities | 6 out of 16 interviewees |
| | Impact on them physically | Stomach problems; Muscular tension | 3 out of 16 participants |
| | Impact on them emotionally | Ruminating on situations; experienced and on the actions taken | 4 out of 16 participants |
| What impact does this stress level have on the job you perform? | Positive impact | Stress propels one forward | 5 out of 16 participants |
| | Impact on social interactions | Delivering poor customer service; | 11 out of 16 interviewees |
| | | Irritable; Not wanting to talk to others; Dedicating less time to peers | |
| | Impact on approach to work | Loss of focus; Less sense of urgency; | 6 out of 16 participants |
| | | Loss of concentration; Lower quality (more mistakes and rework); Unable to notice the obvious; Lack of organization | |
| | Impact on customers | Poorer service provided | 5 out of 16 participants |
| What do you do to manage this stress? | Changes in perspective | Diminishing the significance of things; Rationalizing feelings | 5 out of 16 participants |
| | Physical coping mechanisms | Exercise; Physically removing themselves from the situation; Eating healthy food | 8 out of 16 participants |
| | Mental coping mechanisms | Pausing and breathing; Leveraging days off; Looking for distractions | 4 out of 16 participants |
| | Changes in approach to work | Prioritizing; Maintaining customers informed | 3 out of 16 participants |
| | Seeking social support | Activating support networks | 2 out of 16 participants |

Current stress levels at work were found to impact participants in different ways, both personally and in the work environment itself. Regarding the impact on family life,

one interviewee in a tactical role explains it as follows, “I feel irritable when I come home [as a result of the stress experienced at work] – my responses are abrasive with those who have nothing to do with the issue.” With regards to sleeping patterns, one person in a strategic role stated that it would be difficult to fall asleep and that she would wake up in the middle of the night thinking about tasks she was pending to complete. Regarding the impact on customer service provided, one interviewee in a tactical role stated, “I am unable to deliver on time or that which the customer wants. This frustrates me.” A participant in a strategic role noted that the stress level she is experiencing has caused her to feel less motivated and less able to concentrate. She frequently finds herself wandering off. Those who seek distractions or physical coping mechanisms mentioned things like watching a light show, going to the gym, training for marathons, and leveraging days off.

With regards to sources of distractions or interruptions before the intervention, those in tactical roles talked more about the work itself when asked this question. Those in strategic roles talked more about levels of self-awareness and self-management when asked this question. 12 participants cited their peers, people talking to them, or communication channels such as instant messenger, e-mail, and phone calls as frequent sources of distraction and interruption on the job. Those in strategic roles also mentioned meetings and meeting dynamics (e.g., virtual meetings) as sources of distractions. Three mentioned self-imposed distractions and interruptions such as cellular phones and social media pages. Both populations had similar ratings when asked about the ease of refocusing.

All study participants were executing the same function after the intervention. Two participants in tactical roles had an increase in scope (e.g., servicing more machines). Two participants in strategic roles had an increase in scope (e.g., covering for a peer and servicing different clients, overseeing work in an additional country). The status of tangible performance metrics remained the same for most program participants after having gone through the intervention. Those whose metrics suffered some negative change attributed the change to things outside of their control (i.e., equipment malfunctions, unstable products, and processes), as they had done before the intervention. Two people performing tactical roles and one performing a strategic role mentioned a slight positive shift in their productivity metrics after the intervention. One person stated that his expired tickets were reduced from eight to three a week. When asked about changes in performance (not specific to metrics) via the questionnaire applied at the end of the workshop, six of eight participants in tactical roles experienced a positive shift. 12 of 18 participants reported the same. They attributed the changes to different items as shown in Table 9.

**Table 9**

***Causes of Performance Improvement***

| Question | Role Type | "Yes": Positives responsed attributed to… | Frequency |
|---|---|---|---|
| Have you seen an improvement in the metrics above since the program started? Please explain briefly. | Tactical Roles | * Improved concentration and organization skills<br>* Focusing on priorities vs. multitasking<br>* Paying more attention to details<br>* Improved listening skills when dealing with clients<br>* Enhanced stress control under challenging situations | * n = 2 (of 8)<br>* n = 1 (of 8)<br>* n = 1 (of 8)<br>* n = 1 (of 8)<br>* n = 1 (of 8) |
| | Stratetic Roles | * Change in behavior and mindset to being more present<br>* Ability to organize work and get things done<br>* Making fewer mistakes<br>* Multitasking less | * n = 12 (of 18)<br>* n = 3 (of 18)<br>* n = 2 (of 18)<br>* n = 2 (of 18) |

When asked about Mindfulness practices' contribution to *achieving* metrics/goals, 62% of those in tactical roles (n = 8) rated mindfulness practices as having highly or very highly contributed. Similarly, 63% of those in strategic roles (n = 19) did the same. Of the eight respondents in tactical roles, 38% considered that mindfulness practices contributed highly or very highly to metrics/goals *improvement.* And, 63% of those in strategic roles believed that mindfulness practices contributed highly or very highly to metrics/goals *improvement.* More details can be seen in Table 10.

**Table 10**

***Mindfulness Practices and Acheiveing/Improving Goals***

| | **How much would you say the mindfulness practice you learned helped you achieve your metrics/goals?** | | | | | |
|---|---|---|---|---|---|---|
| **Role Type** | **No Contribution** | **Little Contribution** | **Some Contribution** | **High Contribution** | **Very High Contribution** | **Total** |
| Tactical | 0 | 0 | 3 | 4 | 1 | 8 |
| | 0% | 0% | 38% | 50% | 12% | 100% |
| Strategic | 0 | 0 | 7 | 8 | 4 | 19 |
| | 0% | 0% | 37% | 42% | 21% | 100% |

| | **Q11. How much would you say the mindfulness practice you learned helped you improve your metrics/goals?** | | | | | |
|---|---|---|---|---|---|---|
| **Role Type** | **No Contribution** | **Little Contribution** | **Some Contribution** | **High Contribution** | **Very High Contribution** | **Total** |
| Tactical | 0 | 0 | 4 | 3 | 0 | 7 |
| | 0% | 0% | 50% | 38% | 0% | 88% |
| Strategic | 0 | 0 | 7 | 8 | 4 | 19 |
| | 0% | 0% | 37% | 42% | 21% | 100% |

Seven participants in tactical roles and nine participants in strategic roles were interviewed after the intervention. They include the same participants who were interviewed before the intervention was applied. Those interviewed reported changes such as the ones mentioned in Table 11.

**Table 11**

***Reported Changes, Post the Intervention***

| Theme | Examples Provided | Frequency of Occurrence |
|---|---|---|
| Shifts in levels of awareness | * Increased consciousness and acceptance of one's emotions<br>* Acknowledging emotions in a way that allows to keep them in check<br>*Feeling calmer and pausing when egnaged in disagreements | These changes were mentioned 27 times in the 16 interviews held. |
| Shifts in the way work is approached | * Improved organziation of tasks to be completed<br>* Less multitasking<br>* Implementation of "to do" lists and agendas<br>* Time saved<br>*Prioritization and mental clarity<br>* Being present more in meetings | These changes were mentioned 26 times in the 16 interviews held. |
| Changes in mind set | * Understanding the importance of being present<br>* Changes in percpetions | These changes were mentioned 19 times in the 16 interviews held. |
| Changes in working relationships and more sense of ownership | * Actively listening to clients | These changes were mentioned eight times in the 16 interviews held. |

Regarding *shifts in levels of awareness,* one participant in a strategic role stated that she became aware that she was interrupting others in meetings. Now, she resorts to writing down her question or comment and waiting for a pause to state these. Another participant in a strategic role stated realizing that “autopilot is not conducive to reflection,” and another one was able to recognize a poor reaction to a situation, leading her to apologize accordingly.

An example provided related to *changes in the approach to work* included collecting all necessary materials before starting work vs. walking several times across the floor for this purpose and increased focus and concentration. One participant in a

tactical role stated, “Before, it was mid-morning, the time had flown by, and I had not accomplished much. Now, it is 10 a.m. and I have completed everything I had set out to complete during my morning routine.” Other changes in this area include an increased level of participation and increased understanding and information retention. One employee in a strategic role stated, “Before, I would ask for a passdown of the meeting. Or, I would not understand something and would be embarrassed to ask because it would be evident that I was not paying attention.” Another participant claims that being present more has resulted in better judgment and feeling that her opinions carry more weight.

*Changes in mindset* included moving from thinking that multitasking was a “good” ability and that functioning on the automatic pilot was beneficial to understanding the importance of being present. One person in a strategic role reported making an effort not to look at her phone or laptop when engaged in conversations. One participant in a tactical role stated that now he cannot but notice when someone is engaging in this behavior (i.e., looking at their phone or laptop when speaking with someone) and it greatly bothers him now. A participant in a strategic role stated that things he cannot control generate in him less anxiety compared to before the intervention and provided an example related to a difference in how he approached a complicated project before and after the intervention. And an employee in a strategic role experienced a shift in perception where, before the workshop, she would see characteristics as vulnerability and compassion at work as weaknesses and now she sees them as virtues.

An example of *changes in working relationships* and *sense of ownership* was found in an employee performing a tactical role. Before attending the workshop, this participant thought he provided excellent customer service. He shared the story where

relationships with peers from a specific country were “complicated.” As a result of what he learned in the workshop, he decided to help a peer from this country even when he did not own the issue and followed through until it was resolved. Another participant, also in a tactical role, stated, “Before, I would see a metric that did not seem accurate. I would acknowledge it and leave it at that. Now, I escalate the situation and look for the correct data.” A participant in a strategic role stated that she now feels that it is disrespectful not to pay full attention to her employees when they speak to her.

When asked about changes experienced in their ability to cope with stress in a post-workshop questionnaire, 100% of participants who completed the program (n = 27) stated having seen an improvement in their ability to cope with stress. When interviewed, program participants in tactical roles referred to changes in their ability to pause before reacting. One participant stated that, before the workshop, she would explode when two or more people would simultaneously talk to her. Now she actively listens and tends to their needs. Another participant had a similar response, stating that now he pauses and calms down, shifting his prior behavior where he would yell. A third participant indicated that he feels he has a new “tool” he can use to cope with stress and that he is more aware that one’s reaction to positive and negative news is essential.

When asked this same question, participants in strategic roles described experiencing a different level of awareness, impacting their reactions to situations faced. One participant in a strategic role indicated that her scope has increased and she is now attending meetings at night. She feels more present and aware of herself and thinks that she is coping differently with stress. She finds herself delegating and prioritizing more often. Another participant claims that she is now able to recognize her heartbeat and use

the techniques she learned to disconnect when stressed. A third employee provided an example where her plan for the day abruptly changed. Noticing the stress, she physically removed herself from the situation, applied breathing techniques she had learned in the workshop and was able to calm down. A fourth participant stated feeling more empowered and self-confident when dealing with stressful situations such as when discussing difficult topics with his manager and when saying "no" to requests others make of him. Finally, a fifth participant states that she was feeling "depressed and desperate" when she came into the workshop. She struggled with coming to work, displaying symptoms similar to those described by Guillot (2013) related to burnout. Applying the tools she learned in the workshop, she now feels happier and enjoys the work she is doing, despite the nature of her work being the same as when she held negative feelings towards it.

When asked in a questionnaire about the impact of Mindfulness practices on their ability to concentrate, 100% of the participants in tactical roles (n = 8) stated experiencing a positive impact and 95% of participants in strategic roles (n = 18) concur. In this same questionnaire, 100% of participants in tactical roles stated having experienced a difference in their ability to refocus after experiencing a distraction or interruption and 84% of participants in strategic roles (n = 16), indicated the same. When interviewed, participants stated being able to focus more and refocus quicker due to being present more (mentioned eight times in 16 interviews). One participant in a strategic role perceives herself as more engaged (present) and finds herself taking notes in meetings now. Another participant stated that meditation techniques helped him realize that his mind would frequently wander and that he was doing too many things at once. Now he

uses a “to do” list and prioritizes. In this same line, a different participant realized that when his mind wandered off, he would create stories in his head and worried about things that never came to happen. Now he pauses, evaluates his emotions, and comes back to the present. These two employees feel they are more productive and that it is easier for them to concentrate. A different participant has changed her behavior in the following way: when waiting in line, she used to scroll through her phone and social media absent-mindedly. She realized this behavior did not clam her down. As a result of the workshop, she found that reading calms her down. Now, she carries a book with her and pulls it out when standing in lines. This same person states that the course taught her the importance of focusing on one thing at a time and sees the techniques learned as contributing to her meeting her goals. A participant in a strategic role describes Mindfulness as “a tool to help one transition from one task to the next; an opportunity to reset and reboot.” Behaviors such as looking for spaces to concentrate at work (e.g., using a phone booth to prevent distractions) have increased, with at least three people in strategic roles employing this activity.

When asked if they would recommend mindfulness practices to someone looking to increase their productivity, 100% of participants in tactical roles said that they would. Among the reasons why, they stated that the related tools have helped them manage their stress and emotions, have helped them concentrate more, have empowered them to make better decisions and face situations, and have helped them deal with shame. They see the tools learned as improving the person as a whole first; this impact then starts to transition into the workplace.

All participants interviewed from strategic roles would also recommend learning mindfulness practices to increase productivity. Like those in tactical roles, they see it as a more holistic tool that works on the person and their quality of life. And this, in turn, has an impact on the workplace. A participant stated that she wanted to share what she was learning with all those around her. At least four participants had started doing so. Another participant said that what she learned is "too good to keep to herself." Two participants describe mindfulness practices as helping one have mental health and experience themselves as feeling calmer. At least five interviewees felt that one of the most significant gains was learning how to be present (one states that she realized she was missing out on many things due to operating on "automatic pilot") and an increased ability to deal with stress and manage stressful situations was mentioned 10 times in 16 interviews. One participant sees mindfulness practices as a tool that "helps one concentrate in an environment that forces one to multitask." Mindfulness practices are described as "a different way of doing things, of thinking differently and of achieving things." "It allows one to discover himself/herself: Who am I? Where am I? Where do I want to be?" When asked to describe their experience in one word, participants used the descriptors seen in Table 12.

**Table 12**

***Experience Descriptors***

| Tactical Roles | Strategic Roles |
|---|---|
| Improvement | Eye-Opening |
| Self-Control | Satisfying |
| Innovative | Innovative |
| Revealing (mentioned two times) | Revealing |
| Empowering | Empowering |
| Interesting | Enriching |
| | Interesting |
| | Amazing |
| | Awareness |
| | Happiness |
| | Incredible |
| | Foundational |

At least four participants mentioned having peers or loved ones make fun of them for attending mindfulness training. Three participants mentioned being skeptical of the program. One stated she felt guilty about being in the workshop vs. at her desk working. However, as the sessions progressed and participants started to see changes, the workshop became their favorite part of the week. One employee in a strategic role commented, "I had heard about this before and thought it was crazy. Now I see this as foundational knowledge for every human being; everybody should be taught this. I don't understand how this is not being taught to everyone." Another participant commented, "Everyone in the company should go through this course." Six participants commended the program instructors and their knowledge and passion for the topic.

The data described in this section validates the hypotheses indicating that Mindfulness has a positive impact on employee productivity and, that it is a viable tool to increase productivity in both types of roles.

**Hypothesis 3**

*Mindfulness and mindfulness practices impact employee productivity differently based on the type of role (tactical or strategic) where they are being applied.*

When comparing the impact of mindfulness practices on productivity based on role type and evaluating it as a tool for this purpose, similarities and differences were described in the data. The mean for stress level before the intervention was higher for those in strategic roles. It increased from T1 to T2 for those in tactical roles and decreased slightly for those in strategic roles when comparing the two periods. The ability to cope reduced a little for those in tactical roles between T1 and T2 and increased for those in strategic roles in this same time period. Table 13 highlights these findings.

**Table 13**

***Stress Levels and Ability to Cope***

| | Stress Level | |
|---|---|---|
| | Tactical Roles | Strategic Roles |
| Before Intervention (Mean) | 6.44, (n = 9) | 7.48, (n = 21) |
| After Intervention (Mean) | 7.13, (n = 8) | 7.05, (n = 19) |

| | Ability to Cope | |
|---|---|---|
| | Tactical Roles | Strategic Roles |
| Before Intervention (Mean) | 7.89, (n = 9) | 7.18, (n = 21) |
| After Intervention (Mean) | 7.00, (n = 8) | 7.92, (n = 19) |

When asked the degree to which mindfulness practices learned helped them **achieve** metrics/goals, five of eight participants in tactical roles and 12 of 19 participants

in strategic roles see mindfulness practices as significantly contributing to goal achievement, where "significant contribution" is interpreted as responses in the "high contribution" and "very high contribution" fields. When asked to what degree mindfulness practices helped them **improve** their metrics/goals, a significant difference is seen between the two roles. Here, three of eight participants in tactical roles reported that these practices highly or very highly contributed. In contrast, 12 of 19 participants in strategic roles said that mindfulness practices highly or very highly contributed to this.

As mentioned before, when asked about the impact of mindfulness practices on their ability to concentrate, 100% of the participants in tactical roles (n = 8) stated experiencing a positive impact and 95% of participants in strategic roles (n = 18) concur. In this same questionnaire, 100% of participants in tactical roles (n = 8) stated they have experienced a difference in their ability to refocus after experiencing a distraction or interruption compared to 84% of participants in strategic roles (n = 16). The data described here is summarized in Table 14.

**Table 14**

***Mindfulness Practices' Positive Contribution***

| | Positive Contributions | |
|---|---|---|
| | Tactical Roles (n = 8) | Strategic Roles (n = 19) |
| Mindfulness role in goal **achievement** | 63% | 63% |
| Mindfulness role in goal **improvement** | 38% | 63% |
| Improved ability to **concentrate** | 100% | 95% |
| Improved ability to **refocus** | 100% | 84% |

The data shows that Mindfulness and mindfulness practices impact employee productivity differently based on the type of role (tactical or strategic) where they are applied as was thought, but there are also similarities in the way these roles are impacted.

Measuring productivity was a challenge for both role types given the variety of definitions and metrics described by participants in both role types. However, the researcher did find those in tactical roles provided more tangible-type of metrics and more objective performance/productivity evaluations. Correlations between mindfulness practices and stress levels were not found through quantitative data. But qualitative data does show a correlation between mindfulness practices and coping with stress and between mindfulness practices and ease of refocusing for both role types. A lack of standardization in productivity definitions and metrics makes it difficult to assess impact acutely.

**Summary**

This chapter described the data collected before and after the Mindfulness workshop. For all except one question on the MAAS, the means between T1 and T2 displayed a significant difference, and four questions showed statistically significant variance in responses. This data points to an increase in Mindfulness levels after the workshop was delivered. While for most participants there was no noticeable impact on tangible metrics, most participants in both roles described changes in the way they approach their work, a change in their mindset, and an increased level of awareness that impacts the work they perform. A few participants in tactical roles reported an increase in their sense of ownership. Two participants in strategic roles and one in a tactical role described changes in physical aspects. Almost all participants described a positive

impact on their personal lives and relationships. Finally, 96% of total participants claim they experienced an increase in their ability to concentrate, and 89% claim the same was true in their ability to refocus.

# Chapter 5: Discussion

This research study intended to answer two questions:

a) What impact does Mindfulness have on employee productivity?

b) Does this impact look different in tactical vs. strategic type of roles?

The following sections will cover the study conclusions, limitations, and related recommendations as well as additional recommendations for future studies. The chapter will close with a final summary.

## Conclusions

Five conclusions were drawn from the data results and findings. The first conclusion drawn from the study is that the impact of Mindfulness and mindfulness practices is more holistic. Beyond work, it has a personal effect by increasing awareness, growing understanding and control of emotions, enabling the person to be present more (and thus, improving personal relationships), and impacting physical conditions (e.g., sleep patterns), among others. This impact aligns with the literature where improved listening skills (Rossy, 2013) and better control of emotions (Walsh & Shapiro, 2006) are mentioned as benefits stemming from engaging in mindfulness practices. While minimal tangible outcomes regarding work metrics were reported, participants also see an impact in the workplace. They reported changes in levels of awareness, in their approach to work (i.e., improved organization, less multitasking, prioritization, and mental clarity), in mindsets, in working relationships, in concentration levels, and in their ability to refocus, among others. The impact on the work environment aligns with that mentioned in the literature regarding more congruent and less fragmented work (Levy et al., 2012), increased clarity (Walsh & Shapiro, 2006), and increased focused attention (Roeser et al.,

2013). Aligned to this conclusion, participants in both roles would recommend mindfulness practices to others looking to improve their productivity, yet most state that the impact they experienced is more holistic.

Some participants were skeptical about the workshop and the concept of Mindfulness as they went into it, yet their perception changed to a point where the workshop became their favorite part of the week and something to look forward to. Several were motivated and driven to share what they were learning with others, wanting to bring this experience to them as well. A few participants categorized Mindfulness as something everyone should learn and as "too good to leave it to myself." However, a few stated that while changes evidenced were influenced by mindfulness practices, they were uncertain regarding the degree to which impact to productivity could be solely attributed to these practices. At least three participants, in different role types, did not see a significant impact on productivity or stress levels despite applying the tools learned. Additionally, participants had adopted several mechanisms to cope with stress before the intervention that they may have employed parallel to applying mindfulness practices. Therefore, the second study conclusion is that Mindfulness should be viewed as a tool vs. as a panacea.

A third conclusion is that the instructor also makes a difference in the Mindfulness journey. In this case, many commended the program instructors. Being able to connect with their stories, participants were more receptive to learning from them. Questions remain regarding how this experience would have varied if a different mechanism would have been employed to teach participants mindfulness practices. In this line, a few participants mentioned defining a way to continue growing in their

Mindfulness level and practice would help. Although the intent exists in participants to continue applying what was learned, the question also remains regarding the impact on the new behaviors displayed if the person ceases to apply mindfulness practices.

Productivity is a difficult concept to define at a level of detail that can be standardized in each role type because there is a vast amount of ways this term is defined and measured by employees. Several factors exist that hinder productivity such as stress and interruptions/distractions (Davis, 2014; Hersch 2012; Jett & George, 2003; Lomas et al., 2017; Sandi & Pinelo-Nava, 2006; Speier, Valacich & Vessey, 1999). There are also several previous findings on the benefits that applying Mindfulness practices has on these factors (Gelles, 2015; Levy et al., 2012; Roeser et al., 2013). Participants reported a shift in their way of dealing with stress and in their ability to concentrate and refocus after having experienced an interruption or a distraction. This finding leads to the conclusion that applying mindfulness practices can influence productivity through providing the practitioner with a tool to better cope with stress, concentrate more and refocus faster on their work, supporting prior related literature (Levy et al., 2012; Lomas et al., 2017; Roeser el al., 2013).

Finally, similarities and differences were described in the data with regards to the impact of Mindfulness practices on tactical and strategic roles. This finding aligns with the literature with regards to tools intended to increase productivity (Banker et al., 1987; Parker, 1983; Schneier et al., 1992; Scott, 1973). Mindfulness and mindfulness practices do seem like a viable tool to increase employee productivity in both types of roles.

**Limitations and Related Recommendations**

There were several limitations encountered in this study. First, there was a limitation regarding *productivity*. There were ample definitions and ways to measure productivity even when participants belonged to the same role type. This made it difficult to measure Mindfulness' direct impact on productivity metrics. This fact became more prominent because participants were from different organizations and functions, especially those in strategic type of roles, which may have mostly been a limitation of the research design. Future studies should select participants from the same organization and function; this would help streamline how productivity is defined and measured. Streamlined definitions and measurements would allow researchers to more accurately evaluate the impact of Mindfulness on employee productivity. In addition to this, the researcher recommends setting up the experiment with a control and a test group so that comparisons can be made accordingly.

Second, there was a limitation regarding *productivity metrics*. Participants saw Mindfulness as more holistic, impacting them as a person as well. Very little tangible impact on productivity metrics was observed. Learnings began playing out in the workplace in more intangible ways such as changes in ways the work was approached, changes in the way relationships were approached (e.g., with clients), changes in mindsets, and changes in levels of awareness and presence (e.g., in meetings, in one on ones). Only a couple of interviewed participants stated that others at work were noticing these changes already. Future studies should allow for more time to elapse for results to start impacting tangible metrics and for more people to start noticing changes in the participants. Therefore, the researcher recommends either allowing more time between the workshop completion and the measurement on impact to tangible metrics or

collecting data in different extracts spread out over a more extended period to assess evolution between one data collection point and the next. Aligned with this suggestion, incorporating a control group would allow for a more holistic view of changes. Another thought is to solicit feedback from participant stakeholders (i.e., participants' peers and/or managers) before and after the intervention with regards to the participant's productivity and assess if changes are reported from one stage to the next.

**Other Recommendations**

Aligned with existing literature, the researcher believes that mindfulness practices might be valuable for managers and leaders to learn (Chesley & Wylson, 2016; Walsh & Shapiro, 2006). Mindfulness has been associated with emotional intelligence (Walsh & Shapiro, 2006), which is the strongest driver of leadership and personal development, according to Bradberry and Greaves (2009). Participants saw a positive change in active listening, in controlling emotional outbursts better (i.e., feeling calmer, yelling less), and in being present more. One participant shared that establishing connections with his employees became easier. Through an exercise called "dipping and looping," he was able to empathize and connect accordingly. All of the prior are behaviors that, if employed, would help motivate and engage employees. One participant in a strategic role commented that her stress levels increased when she became a manager and, that her employees had formed a negative perception about the role she performed as a result of the stress they witnessed in her. Employing Mindfulness practices as a tool to cope with stress more assertively could be valuable for the management and leadership population.

Before employing Mindfulness in a work environment, it is important to socialize the concept. The researcher heard from several participants that they were unsure of

what Mindfulness was before joining the workshop. At least five participants were cautious as they assumed the workshop would question their spiritual beliefs and had decided to step out of the workshop if this assumption proved to be true. While they found that Mindfulness has a religious underpinning, they also found it did not conflict with their own beliefs. At least three participants were skeptical about the workshop and the effects of applying Mindfulness practices and felt guilty about being in the workshop vs. "at their desk." Soon after, however, the workshop became their favorite part of the week. Others commented that before the workshop they thought they had a certain level of awareness and thought they were present. After the workshop and after applying the learnings, they discovered blind spots around these initial paradigms. Aligned to these statements, some mentioned they would have answered the baseline MAAS differently (choosing numbers in the scale that meant they were less mindful) had they known what being aware and being present truly meant. Given these observations, researchers might want to test applying the baseline MAAS after one initial session where the Mindfulness concept is explored in depth and an initial exercise is performed. Finally, at least four participants shared that their peers and family made fun of them for engaging in these activities, most probably due to a lack of understanding of what Mindfulness is.

It is important to run the workshop and explain concepts in the participants' primary language. The same is true for data collection tools used. Some things got "lost in translation" even when participants spoke English as their primary language was Spanish.

A final recommendation when conducting interviews is to ask questions related to performance, productivity, and grade level after rapport has been established and other

questions have been asked. Otherwise, participants may be hesitant to share this type of information with the researcher.

**Summary**

This chapter has summarized the research findings regarding the questions of whether Mindfulness and Mindfulness practices impact employee productivity or not and if this impact is different depending on the role employees perform. The conclusions included:

- Understanding that these practices impact the person beyond their work-life,
- Acknowledging that more time is needed for impact to be seen on tangible productivity metrics,
- Realizing that socializing the Mindfulness concept before implementing it is valuable,
- Appreciating that the instructors and mechanism to deliver Mindfulness training may have an impact on its effectiveness,
- Discovering that Mindfulness practices did positively contribute to improving abilities to cope with stress, increasing levels of concentration, and enabling one to refocus, and
- Learning that, while there are differences in Mindfulness' impact on productivity in tactical and strategic roles there are also many similarities.

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# Appendix A: Participant Questionnaire and MAAS, Baseline

## Participant Questionnaire I

Dear program participant:

Welcome to the **Mindfulness Practices and Employee Productivity** research project. Thank you again for your interest and willingness to participate. As a reminder, this is a voluntary, opt-in program and project.

This questionnaire consists of two sections. The first part is intended to gather basic information from you as well as understand information related to productivity. The second part, is the "Mindfulness Awareness Attention Scale" (MAAS). Both sections should take about 20 minutes to complete. There are no right or wrong answers, please answer what comes to mind.

Please return this questionnaire back to Fabiola Fajardo, project researcher. Your answers will remain confidential and will at no time be shared individually with anyone. Thank you.

### PART I: Demographics and Basic Information:

**Instructions:** Please circle the answer that best describes you:

1. What is your gender?
    a. Female
    b. Male

2. Please select the category that best describes your role:
    a. Exempt
    b. Non-exempt

3. What is your age range?
    a. 20 – 25 years old
    b. 26 – 30 years old
    c. 31 – 35 years old
    d. 36 – 40 years old
    e. 41+ years old

4. How long have you been with the Company?
    a. Between 1 and 3 years
    b. Between 3 and 5 years
    c. Between 5 and 7 years
    d. More than 7 years

5. How long have you been performing your current role?
    a. Between 1 and 3 years
    b. Between 3 and 5 years
    c. Between 5 and 7 years
    d. More than 7 years

6. Please place an "x" in the scale according to where your job role falls for each item:

| | Strongly Disagree | Disagree | Agree | Strongly Agree |
|---|---|---|---|---|
| My role requires me to follow pre-determined processes | | | | |
| The tasks I perform do not vary too much from one day or week to another | | | | |
| I have the freedom to determine what my role will look like, what goals I will attain or what strategies I will focus on | | | | |
| I have the freedom to modify processes, goals, or strategies without having to seek approval first | | | | |

7. Which of the tools below are used to measure your performance? Circle all that apply.
    a. **Quality** metrics such as non-employee visible defects, employee visible defects and excursions
    b. Adherence to **service level agreements**
    c. **Volume** generated by your efforts (i.e., number of tickets processed, number of transactions processed, etc.)
    **d.** Monthly/quarterly objectives such as **MBOs**
    e. None of the above

8. Is your performance measured by any other method not described above? If so, please specify:

    _____
    _____
    _____

9. On a scale of 1 - 10, where 1 is low, how stressful would you say your job is?

    _____

10. On a scale of 1 – 10, where 1 is low, how able are you to cope with this stress level? _____

11. On a scale of 1 - 10, where 1 is low, how much concentration do your tasks require? _____

12. On a scale of 1 - 10, where 1 is low, how often are you affected by interruptions or distractions at work?

    _____

13. On a scale of 1 – 10, where 1 is low, how easy is it for you to re-focus when you experience a distraction or an interruption at work?

    _____

**PART II: MAAS:**

**Day-to-Day Experiences**

**Instructions:** Below is a collection of statements about your everyday experience. Using the 1-6 scale below, please indicate how frequently or infrequently you currently have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be. Please treat each item separately from every other item.

| | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| | Almost Always | Very Frequently | Somewhat Frequently | Somewhat Infrequently | Very Infrequently | Almost Never |
| I could be experiencing some emotion and not be conscious of it until some time later. | 1 | 2 | 3 | 4 | 5 | 6 |
| I break or spill things because of carelessness, not paying attention, or thinking of something else. | 1 | 2 | 3 | 4 | 5 | 6 |
| I find it difficult to stay focused on what's happening in the present. | 1 | 2 | 3 | 4 | 5 | 6 |
| I tend to walk quickly to get where I'm going without paying attention to what I experience along the way. | 1 | 2 | 3 | 4 | 5 | 6 |
| I tend not to notice feelings of physical tension or discomfort until they really grab my attention. | 1 | 2 | 3 | 4 | 5 | 6 |
| I forget a person's name almost as soon as I've been told it for the first time. | 1 | 2 | 3 | 4 | 5 | 6 |
| It seems I am "running on automatic," without much awareness of what I'm doing. | 1 | 2 | 3 | 4 | 5 | 6 |
| I rush through activities without being really attentive to them. | 1 | 2 | 3 | 4 | 5 | 6 |
| I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there. | 1 | 2 | 3 | 4 | 5 | 6 |
| I do jobs or tasks automatically, without being aware of what I'm doing. | 1 | 2 | 3 | 4 | 5 | 6 |
| I find myself listening to someone with one ear, doing something else at the same time. | 1 | 2 | 3 | 4 | 5 | 6 |
| I drive places on 'automatic pilot' and then wonder why I went there. | 1 | 2 | 3 | 4 | 5 | 6 |
| I find myself preoccupied with the future or the past. I find myself doing things without paying attention. | 1 | 2 | 3 | 4 | 5 | 6 |
| I find myself doing things without paying attention. | 1 | 2 | 3 | 4 | 5 | 6 |
| I snack without being aware that I'm eating. | 1 | 2 | 3 | 4 | 5 | 6 |

## Appendix B: Baseline, Interview Questions

**Baseline Interview**

1. How long have you been with the Company?
2. How long have you been performing your current role?
3. Does your role classify as exempt or as non-exempt?
4. What is your current role?
5. How do you define "productivity" in your role? *Productivity definition from the literature review will be read to provide a framework to the interviewee.*
6. How is your performance or productivity measured?
    a. What metrics do you use to evaluate if you have delivered as expected?
    b. How do you know if you are performing your job successfully?
7. What is the current state of these performance metrics?
8. What mechanisms, if any, do you use to continuously improve your performance or productivity?
9. On a scale of 1 - 10, how stressful would you say your job is?

    a. What impact does this stress level have on you?

    b. What impact does this stress level have on the job you perform?

    c. What do you do to manage this stress?

10. On a scale of 1 - 10, how much concentration do your tasks require?
11. On a scale of 1 - 10, how often are you affected by interruptions or distractions at work?
    a. What are the main sources of these distractions or interruptions for you?
    b. On a scale of 1 - 10, please rate how easy it is for you to return your focus on your work when you experience interruptions or distractions?
12. Is there anything related to this topic that you think is important for me to know that we have not discussed yet?

## Appendix C: Post Intervention Program Participant Survey (Questionnaire)

## Post Program Participant Questionnaire

Dear program participant:

Thank you for having participated in the **Mindfulness Practices and Employee Productivity** research project. I hope you enjoyed this experience.

This post-program questionnaire consists of two sections. The first part is intended to gather basic information from you as well as understand information related to productivity. The second part, is the "Mindfulness Awareness Attention Scale" (MAAS). Both sections should take about 20 minutes to complete. There are no right or wrong answers, please answer what comes to mind.

Please return this questionnaire back to Fabiola Fajardo, project researcher. Your answers will remain confidential and will at no time be shared individually with anyone. Thank you.

**PART I: Demographics and Basic Information:**

**Instructions:** Please circle the answer that best describes you:

1. What is your gender?
    a. Female
    b. Male

2. Please select the category that best describes your role:
    a. Exempt
    b. Non-exempt

3. What is your age range?
    a. 20 – 25 years old
    b. 26 – 30 years old
    c. 31 – 35 years old
    d. 36 – 40 years old
    e. 41+ years old

4. How long have you been with the Company?
    a. Between 1 and 3 years
    b. Between 3 and 5 years
    c. Between 5 and 7 years
    d. More than 7 years

5. How long have you been performing your current role?
    a. Between 1 and 3 years
    b. Between 3 and 5 years
    c. Between 5 and 7 years
    d. More than 7 years

6. Please place an "x" in the scale according to where your job role falls for each item:

| | Strongly Disagree | Disagree | Agree | Strongly Agree |
|---|---|---|---|---|
| My role requires me to follow pre-determined processes | | | | |
| The tasks I perform do not vary too much from one day or week to another | | | | |
| I have the freedom to determine what my role will look like, what goals I will attain or what strategies I will focus on | | | | |
| I have the freedom to modify processes, goals, or strategies without having to seek approval first | | | | |

7. Which of the tools below are used to measure your performance (circle all that apply)?:
    a. **Quality** metrics such as non-employee visible defects, employee visible defects and excursions
    b. Adherence to **service level agreements**
    c. **Volume** generated by your efforts (i.e., number of tickets processed, number of transactions processed, etc.)
    **d.** Monthly/quarterly objectives such as **MBOs**
    e. None of the above

8. Is your performance measured by any other method not described above? If so, please specify:

    _____
    _____
    _____

9. Have you seen an improvement in the metrics above since the program started? Please explain briefly.

    _____
    _____
    _____

10. How much would you say the Mindfulness practice you learned helped you **achieve** your metrics/goals?

| No Contribution | Little Contribution | Some Contribution | High Contribution | Very High Contribution |
|---|---|---|---|---|
| | | | | |

11. How much would you say the Mindfulness practice you learned helped you **improve** your metrics/goals?

| No Contribution | Little Contribution | Some Contribution | High Contribution | Very High Contribution |
|---|---|---|---|---|
| | | | | |

12. On a scale of 1 - 10, where 1 is low, how stressful would you say your job is? _____

13. On a scale of 1 – 10, where 1 is low, how able are you to cope with this stress level? _____

14. Have you experienced a difference in your coping ability as a result of the Mindfulness practices learned? Yes _____, No _____.

15. On a scale of 1 - 10, where 1 is low, how much concentration do your tasks require? _____

16. Have you experienced a difference in your concentration ability as a result of the Mindfulness practices learned? Yes _____, No _____.

17. On a scale of 1 - 10, where 1 is low, how often are you affected by interruptions or distractions at work?

    _____

18. Have you experienced a difference in your ability to re-focus as a result of the Mindfulness practices learned? Yes _____, No _____.

19. Any other comments you would like to mention?

    _____
    _____
    _____

**PART II: MAAS:**

**Day-to-Day Experiences**

**Instructions:** Below is a collection of statements about your everyday experience. Using the 1-6 scale below, please indicate how frequently or infrequently you currently have each experience. Please answer according to what really reflects your experience rather than what you think your experience should be. Please treat each item separately from every other item.

| | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| | Almost Always | Very Frequently | Somewhat Frequently | Somewhat Infrequently | Very Infrequently | Almost Never |
| I could be experiencing some emotion and not be conscious of it until some time later. | 1 | 2 | 3 | 4 | 5 | 6 |
| I break or spill things because of carelessness, not paying attention, or thinking of something else. | 1 | 2 | 3 | 4 | 5 | 6 |
| I find it difficult to stay focused on what's happening in the present. | 1 | 2 | 3 | 4 | 5 | 6 |
| I tend to walk quickly to get where I'm going without paying attention to what I experience along the way. | 1 | 2 | 3 | 4 | 5 | 6 |
| I tend not to notice feelings of physical tension or discomfort until they really grab my attention. | 1 | 2 | 3 | 4 | 5 | 6 |
| I forget a person's name almost as soon as I've been told it for the first time. | 1 | 2 | 3 | 4 | 5 | 6 |
| It seems I am "running on automatic," without much awareness of what I'm doing. | 1 | 2 | 3 | 4 | 5 | 6 |
| I rush through activities without being really attentive to them. | 1 | 2 | 3 | 4 | 5 | 6 |
| I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there. | 1 | 2 | 3 | 4 | 5 | 6 |
| I do jobs or tasks automatically, without being aware of what I'm doing. | 1 | 2 | 3 | 4 | 5 | 6 |
| I find myself listening to someone with one ear, doing something else at the same time. | 1 | 2 | 3 | 4 | 5 | 6 |
| I drive places on 'automatic pilot' and then wonder why I went there. | 1 | 2 | 3 | 4 | 5 | 6 |
| I find myself preoccupied with the future or the past. I find myself doing things without paying attention. | 1 | 2 | 3 | 4 | 5 | 6 |
| I find myself doing things without paying attention. | 1 | 2 | 3 | 4 | 5 | 6 |
| I snack without being aware that I'm eating. | 1 | 2 | 3 | 4 | 5 | 6 |

## Appendix D: Post Intervention Interview Questions

**Post-Intervention Interview**

1. Are you performing the same role as when you started the program?
2. Has the way you measure performance in your role changed since we last spoke?
    a. If so, in what ways?
3. What is the current state of your performance metrics?
4. What changes, if any have you seen in these metrics since the Mindfulness Program started?
5. What role do you feel Mindfulness has played in the change you described above?
    a. Please give me an example of how you have seen Mindfulness affect your metrics or work.
6. Do you experience or approach your role differently since engaging in the Mindfulness program?
    a. If so, in what ways? Please give me an example.
7. On a scale of 1 – 10, how likely are you to continue employing Mindfulness practices?
8. On a scale of 1 - 10, how much stress do you experience in your job?

    a. Do you feel you are able to cope with this stress differently after the Mindfulness practices learnings?

        i. If so, in what ways?

9. What impact, if any, do you feel learning and applying these Mindfulness practices have had in your ability to focus and concentrate?
10. Would you recommend Mindfulness practice to others as a way to increase their productivity or improve their performance?
    a. If so, why?
    b. If not, why not?
11. Is there anything related to this topic that you think is important for me to know that we have not discussed yet?

## Appendix E: Consent Form

# PEPPERDINE UNIVERSITY

## *Graziadio School of Business and Management*

**INFORMED CONSENT FOR PARTICIPATION IN RESEARCH ACTIVITIES**

THE ROLE OF MINDFULNESS IN INCREASING EMPLOYEE PRODUCTIVITY

IN BOTH TACTICAL AND STRATEGIC TYPE OF ROLES

You are invited to participate in a research study conducted by Fabiola Fajardo (advised by Dr. Gary Mangiofico, PhD) at Pepperdine University, because you are a full time, permanent employee, aged 20 years or older, have been with the Company for over a year, are performing successfully (or better) in your role, have not had prior Mindfulness training, are able to invest time attending the workshop, and have obtained approval from your manager to participate accordingly. Your participation is voluntary. You should read the information below, and ask questions about anything that you do not understand, before deciding whether to participate. Please take as much time as you need to read the consent form. You may also decide to discuss participation with your family or friends. You will also be given a copy of this form for your records.

**PURPOSE OF THE STUDY**

The purpose of the study is to explore the role Mindfulness plays in employee productivity. It takes a deeper look into "increased productivity" - also known as "employee performance"– as a potential benefit stemming from the adoption of Mindfulness practices. Furthermore, it seeks to understand if there is a difference in the impact of Mindfulness practices on employee productivity when these are employed in different types of jobs (tactical and strategic). For the purposes of this study, a tactical type of role is considered a non-exempt type or exempt entry level type of role where processes are pre-defined. A strategic type of role is defined as an exempt type of role where the employee has an option to decide on how the work is done and the strategies that he/she will focus on.

**STUDY PROCEDURES**

If you volunteer to participate in this study, you will be asked to perform the following:

**Pre-workshop activities:**

- As part of the pre-workshop activities and to measure a baseline for Mindfulness and Productivity, you will be asked to complete a two part questionnaire. This questionnaire should take about 20 mins to complete.
    - Part I measures Mindfulness using "the MAAS" ("Mindful Awareness Attention Scale"). The MAAS measures attentiveness and awareness. It includes 15 questions and uses a Likert scale consisting of 6 choices

ranging from "almost always" to "almost never." It is a validated test that works well with the adult population.
    - Part II captures demographic information such as your length of survey, job type (exempt or non-exempt), age range, etc. It also asks questions (scales, open ended, and selection) intended to measure a baseline in productivity.
- You might also be invited to an interview to answer additional questions intended to explore productivity (such as how you productivity is measured in your role, the level of stress you experience in your role, the amount of distractions you experience in your role, how you deal with these, etc.). This interview should last approximately an hour.

**Workshop:**

- The workshop you will be a part of consists of eight 2-hour sessions (1 per week). These will be spread out through a ~10 week period as we will pause during the holidays to accommodate vacations and calendars. We will kick back up during the second week of January.
- These sessions will be scheduled on the same day and time of the week (as much as possible) so that you can plan accordingly.
- You will be provided with 3 books and a journal that accompany the workshop. The $100 fee per participant has been paid for by your organization.
- You will be asked to meditate (apply what you are learning) between 1-10 minutes a day on your own.

**Post Workshop:**

- Approximately 1-2 weeks after the workshop is completed, you will be asked to complete a questionnaire similar to the one you completed prior to the workshop.
    - It will be a two-part questionnaire. These should take about 20 minutes to complete.
        - The first part is the MAAS ("Mindful Awareness Attention Scale"). The MAAS measures attentiveness and awareness. It includes 15 questions and uses a Likert scale consisting of 6 choices ranging from "almost always" to "almost never." It is a validated test that works well with the adult population.
            - The intent is to compare pre and post workshop results to assess if there was a change in the level of Mindfulness experienced in the two time periods.
        - The second part will be a questionnaire intended to capture demographic information such as length of survey, age range and job type (exempt or non-exempt) and assess any change in productivity-related factors such as stress levels, degree of concentration, etc.
    - If you were selected for a pre-workshop interview, you will also be invited to a post workshop interview that intends to assess any changes between the two periods in time (pre and post workshop completion).
- **Provide inputs to results:**
    - Once the data has been analyzed, you will be invited to an optional session where you will see the study's results (in aggregate form, no personal data

will be shared at any point in this study). You will have the opportunity to express if the results resonate with you or not.

**POTENTIAL RISKS AND DISCOMFORTS**

The potential and foreseeable risks associated with participation in this study include time invested in the workshop that may take time away from other work-related tasks or duties. You may also find that you do not want to learn or practice Mindfulness related practices (if this is the case, you are free to decide to drop out of the study. Please let the researcher know accordingly).

You may also experience changes to your daily routine since you will be practicing Mindfulness activities that include 1 to 10 minutes a day meditating.

You may have to move meetings or other related tasks around to attend the workshop sessions.

**POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY**

There are several anticipated benefits to society given a few areas Mindfulness practices appear to positively impact. These may include reduced stress and burnout, increased emotional intelligence, increased working memory, and increased ability to concentrate after a distraction has been experienced. There also are appears to be a correlation between Mindfulness practices and employee productivity. Please note that there is no guarantee that you will experience these benefits.

**CONFIDENTIALITY**

The records collected for this study will be confidential as far as permitted by law. However, if required to do so by law, it may be necessary to disclose information collected about you. Examples of the types of issues that would require me to break confidentiality are if disclosed any instances of child abuse and elder abuse. Pepperdine's University's Human Subjects Protection Program (HSPP) may also access the data collected. The HSPP occasionally reviews and monitors research studies to protect the rights and welfare of research subjects.

The data will be stored on a password protected computer in the principal investigator's locker in Company premises while collecting data and in her residence thereafter. Printed data (i.e., questionnaires) will be stored in the same way. The data will be stored for a minimum of three years. The data collected will be coded and de-identified.

**SUSPECTED NEGLECT OR ABUSE OF CHILDREN**

Under California law, the researcher(s) who may also be a mandated reporter will not maintain

as confidential, information about known or reasonably suspected incidents of abuse or neglect

of a child, dependent adult or elder, including, but not limited to, physical, sexual, emotional, and financial abuse or neglect. If any researcher has or is given such information, he or she is required to report this abuse to the proper authorities.

**PARTICIPATION AND WITHDRAWAL**

Your participation is voluntary. Your refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study.

**ALTERNATIVES TO FULL PARTICIPATION**

Your alternative is to not participate. Your relationship with your employer will not be affected whether you participate or not in this study.

**INVESTIGATOR'S CONTACT INFORMATION**

You understand that the investigator is willing to answer any inquiries you may have concerning the research herein described. You understand that you may contact Fabiola Fajardo, Fabiola.fajardo.mandujano@gmail.com, 6058-9985 if you have any other questions or concerns about this research.

**RIGHTS OF RESEARCH PARTICIPANT – IRB CONTACT INFORMATION**

If you have questions, concerns or complaints about your rights as a research participant or research in general please contact Dr. Judy Ho, Chairperson of the Graduate & Professional Schools Institutional Review Board at Pepperdine University 6100 Center Drive Suite 500, Los Angeles, CA 90045, 310-568-5753 or gpsirb@pepperdine.edu.

_____ _____

Signature Date

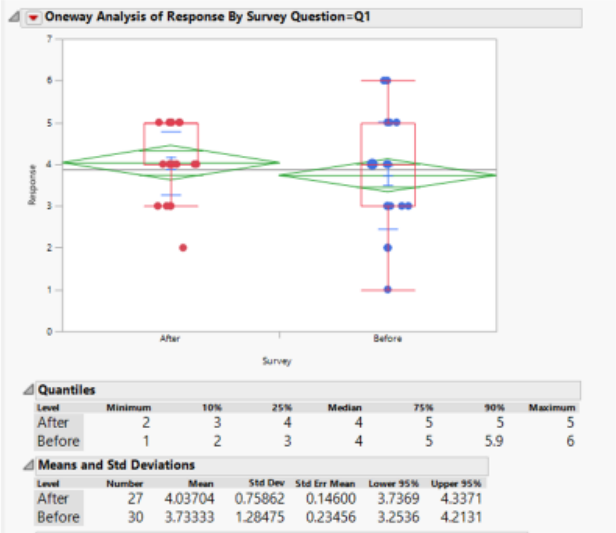
**Appendix F:**

**Statistical Analysis**

**MAAS results before and after the intervention**

**Entire Population**

Q1- I could be experiencing some emotion and not be conscious of it until some time later.

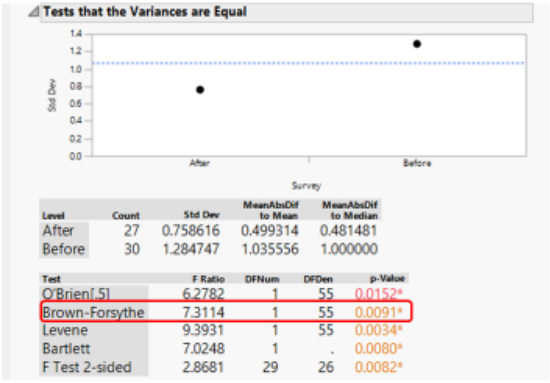



Quantiles

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| After | 2 | 3 | 4 | 4 | 5 | 5 | 5 |
| Before | 1 | 2 | 3 | 4 | 5 | 5.9 | 6 |

Means and Std Deviations

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| After | 27 | 4.03704 | 0.75862 | 0.14600 | 3.7369 | 4.3371 |
| Before | 30 | 3.73333 | 1.28475 | 0.23456 | 3.2536 | 4.2131 |




| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| After | 27 | 0.758616 | 0.499314 | 0.481481 |
| Before | 30 | 1.284747 | 1.035556 | 1.000000 |

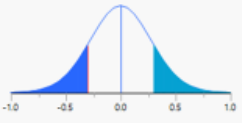
| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 6.2782 | 1 | 55 | 0.0152* |
| Brown-Forsythe | 7.3114 | 1 | 55 | 0.0091* |
| Levene | 9.3931 | 1 | 55 | 0.0034* |
| Bartlett | 7.0248 | 1 | . | 0.0080* |
| F Test 2-sided | 2.8681 | 29 | 26 | 0.0082* |

t Test

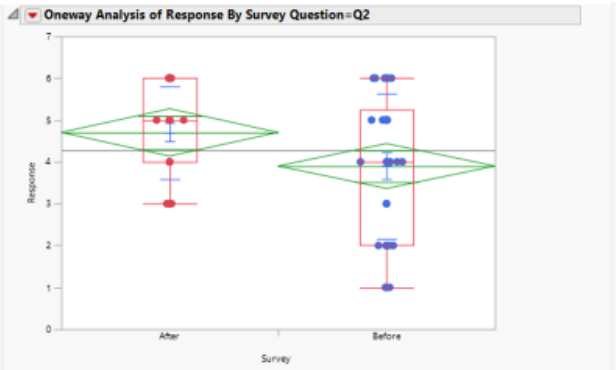
Before-After

Assuming unequal variances

| | | | |
|---|---|---|---|
| Difference | -0.30370 | t Ratio | -1.09924 |
| Std Err Dif | 0.27629 | DF | 47.81732 |
| Upper CL Dif | 0.25186 | Prob > \|t\| | 0.2772 |
| Lower CL Dif | -0.85927 | Prob > t | 0.8614 |
| Confidence | 0.95 | Prob < t | 0.1386 |



Q2 - I break or spill things because of carelessness, not paying attention, or thinking of something else.

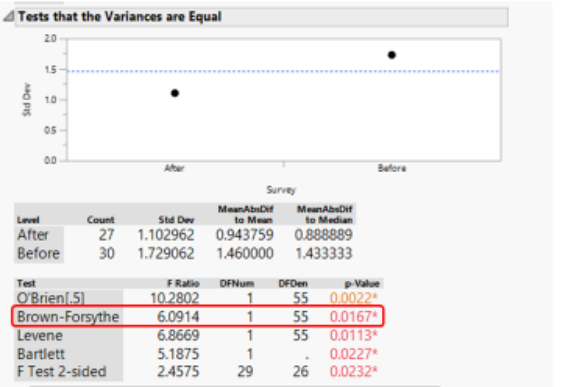



Quantiles

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| After | 3 | 3 | 4 | 5 | 6 | 6 | 6 |
| Before | 1 | 1.1 | 2 | 4 | 5.25 | 6 | 6 |

Means and Std Deviations

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| After | 27 | 4.70370 | 1.10296 | 0.21227 | 4.2674 | 5.1400 |
| Before | 30 | 3.90000 | 1.72906 | 0.31568 | 3.2544 | 4.5456 |




| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| After | 27 | 1.102962 | 0.943759 | 0.888889 |
| Before | 30 | 1.729062 | 1.460000 | 1.433333 |

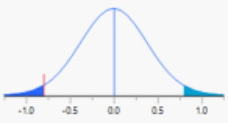
| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 10.2802 | 1 | 55 | 0.0022* |
| Brown-Forsythe | 6.0914 | 1 | 55 | 0.0167* |
| Levene | 6.8669 | 1 | 55 | 0.0113* |
| Bartlett | 5.1875 | 1 | . | 0.0227* |
| F Test 2-sided | 2.4575 | 29 | 26 | 0.0232* |

t Test

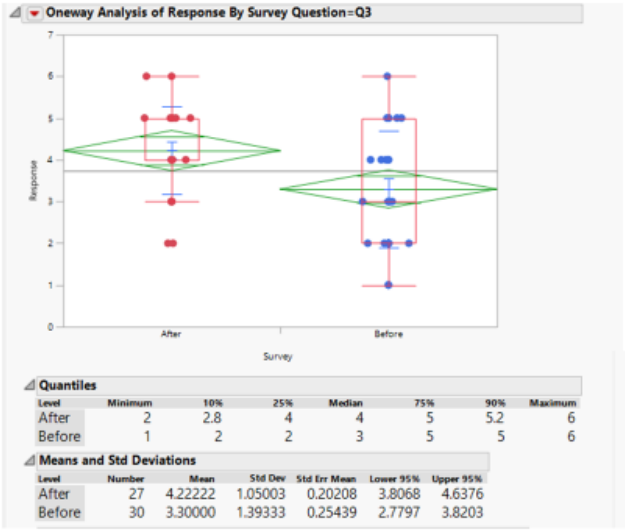
Before-After

Assuming unequal variances

| | | | |
|---|---|---|---|
| Difference | -0.8037 | t Ratio | -2.11273 |
| Std Err Dif | 0.3804 | DF | 49.79733 |
| Upper CL Dif | -0.0396 | Prob > \|t\| | 0.0397* |
| Lower CL Dif | -1.5679 | Prob > t | 0.9802 |
| Confidence | 0.95 | Prob < t | 0.0198* |



## Q3 - I find it difficult to stay focused on what's happening in the present.

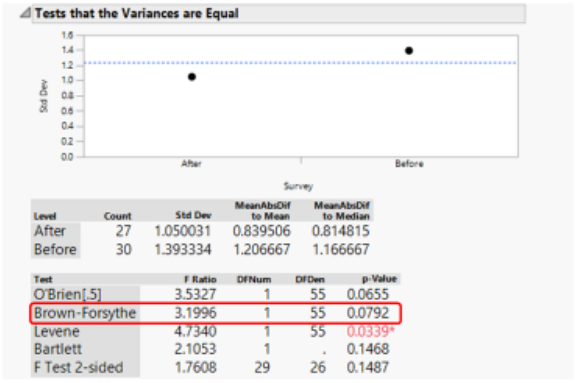



**Quantiles**

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| After | 2 | 2.8 | 4 | 4 | 5 | 5.2 | 6 |
| Before | 1 | 2 | 2 | 3 | 5 | 5 | 6 |

**Means and Std Deviations**

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| After | 27 | 4.22222 | 1.05003 | 0.20208 | 3.8068 | 4.6376 |
| Before | 30 | 3.30000 | 1.39333 | 0.25439 | 2.7797 | 3.8203 |




| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| After | 27 | 1.050031 | 0.839506 | 0.814815 |
| Before | 30 | 1.393334 | 1.206667 | 1.166667 |

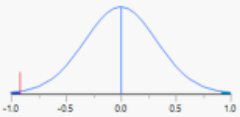
| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 3.5327 | 1 | 55 | 0.0655 |
| Brown-Forsythe | 3.1996 | 1 | 55 | 0.0792 |
| Levene | 4.7340 | 1 | 55 | 0.0339* |
| Bartlett | 2.1053 | 1 | . | 0.1468 |
| F Test 2-sided | 1.7608 | 29 | 26 | 0.1487 |

**t Test**

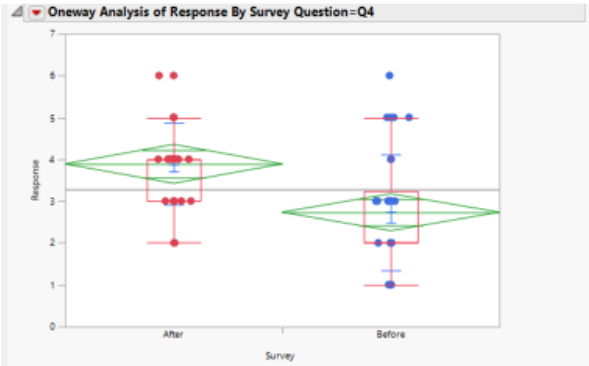
Before-After

Assuming equal variances

| | | | |
|---|---|---|---|
| Difference | -0.9222 | t Ratio | -2.79703 |
| Std Err Dif | 0.3297 | DF | 55 |
| Upper CL Dif | -0.2615 | Prob > \|t\| | 0.0071* |
| Lower CL Dif | -1.5830 | Prob > t | 0.9965 |
| Confidence | 0.95 | Prob < t | 0.0035* |



## Q4 - I tend to walk quickly to get where I'm getting without paying attention to what I experience along the way..

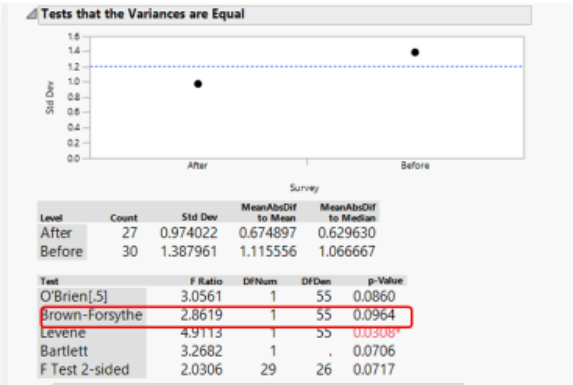



**Quantiles**

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| After | 2 | 2.8 | 3 | 4 | 4 | 5.2 | 6 |
| Before | 1 | 1 | 2 | 2 | 3.25 | 5 | 6 |

**Means and Std Deviations**

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| After | 27 | 3.88889 | 0.97402 | 0.18745 | 3.5036 | 4.2742 |
| Before | 30 | 2.73333 | 1.38796 | 0.25341 | 2.2151 | 3.2516 |




| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| After | 27 | 0.974022 | 0.674897 | 0.629630 |
| Before | 30 | 1.387961 | 1.115556 | 1.066667 |

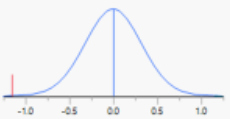
| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 3.0561 | 1 | 55 | 0.0860 |
| Brown-Forsythe | 2.8619 | 1 | 55 | 0.0964 |
| Levene | 4.9113 | 1 | 55 | 0.0308* |
| Bartlett | 3.2682 | 1 | . | 0.0706 |
| F Test 2-sided | 2.0306 | 29 | 26 | 0.0717 |

**t Test**

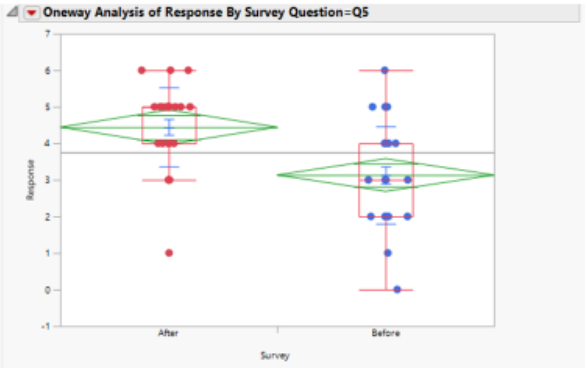
Before-After

Assuming equal variances

| | | | |
|---|---|---|---|
| Difference | -1.1556 | t Ratio | -3.59989 |
| Std Err Dif | 0.3210 | DF | 55 |
| Upper CL Dif | -0.5123 | Prob > \|t\| | 0.0007* |
| Lower CL Dif | -1.7988 | Prob > t | 0.9997 |
| Confidence | 0.95 | Prob < t | 0.0003* |



Q5 - I tend to notice feelings of physical tension or discomfort until they really grab my attention.

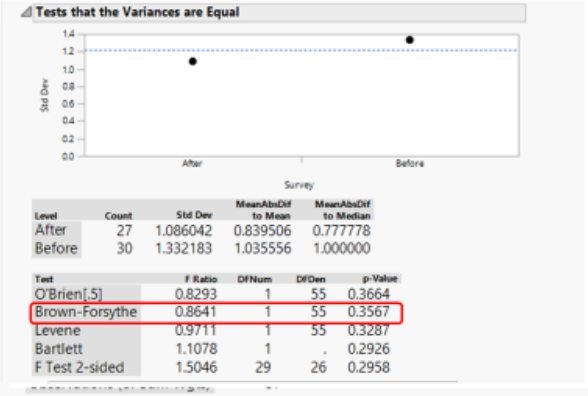



Quantiles

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| After | 1 | 3 | 4 | 5 | 5 | 6 | 6 |
| Before | 0 | 2 | 2 | 3 | 4 | 5 | 6 |

Means and Std Deviations

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| After | 27 | 4.44444 | 1.08604 | 0.20901 | 4.0148 | 4.8741 |
| Before | 30 | 3.13333 | 1.33218 | 0.24322 | 2.6359 | 3.6308 |




| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| After | 27 | 1.086042 | 0.839506 | 0.777778 |
| Before | 30 | 1.332183 | 1.035556 | 1.000000 |

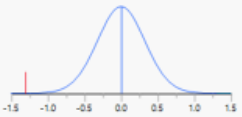
| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 0.8293 | 1 | 55 | 0.3664 |
| Brown-Forsythe | 0.8641 | 1 | 55 | 0.3567 |
| Levene | 0.9711 | 1 | 55 | 0.3287 |
| Bartlett | 1.1078 | 1 | . | 0.2926 |
| F Test 2-sided | 1.5046 | 29 | 26 | 0.2958 |

t Test

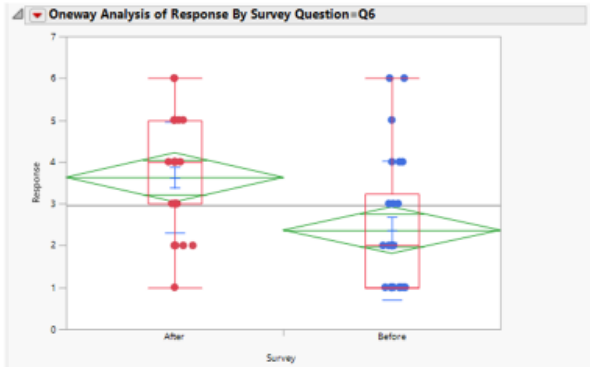
Before-After

Assuming equal variances

| | | | |
|---|---|---|---|
| Difference | -1.3111 | t Ratio | -4.04451 |
| Std Err Dif | 0.3242 | DF | 55 |
| Upper CL Dif | -0.6615 | Prob > \|t\| | 0.0002* |
| Lower CL Dif | -1.9608 | Prob > t | 0.9999 |
| Confidence | 0.95 | Prob < t | <.0001* |



Q6 - I forget a person's name almost as soon as I've been told it for the first time.

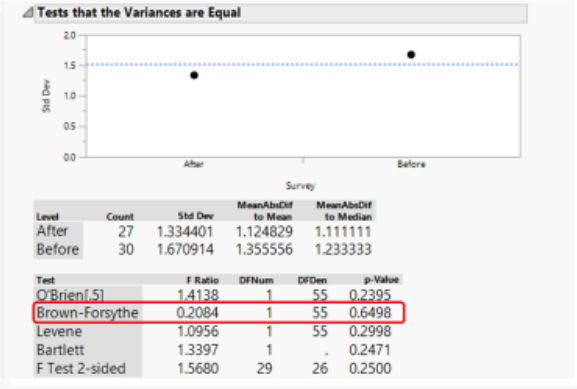



Quantiles

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| After | 1 | 2 | 3 | 4 | 5 | 5.2 | 6 |
| Before | 1 | 1 | 1 | 2 | 3.25 | 5.9 | 6 |

Means and Std Deviations

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| After | 27 | 3.62963 | 1.33440 | 0.25681 | 3.1018 | 4.1575 |
| Before | 30 | 2.36667 | 1.67091 | 0.30507 | 1.7427 | 2.9906 |




| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| After | 27 | 1.334401 | 1.124829 | 1.111111 |
| Before | 30 | 1.670914 | 1.355556 | 1.233333 |

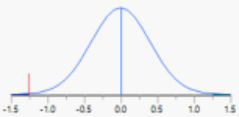
| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 1.4138 | 1 | 55 | 0.2395 |
| Brown-Forsythe | 0.2084 | 1 | 55 | 0.6498 |
| Levene | 1.0956 | 1 | 55 | 0.2998 |
| Bartlett | 1.3397 | 1 | . | 0.2471 |
| F Test 2-sided | 1.5680 | 29 | 26 | 0.2500 |

t Test

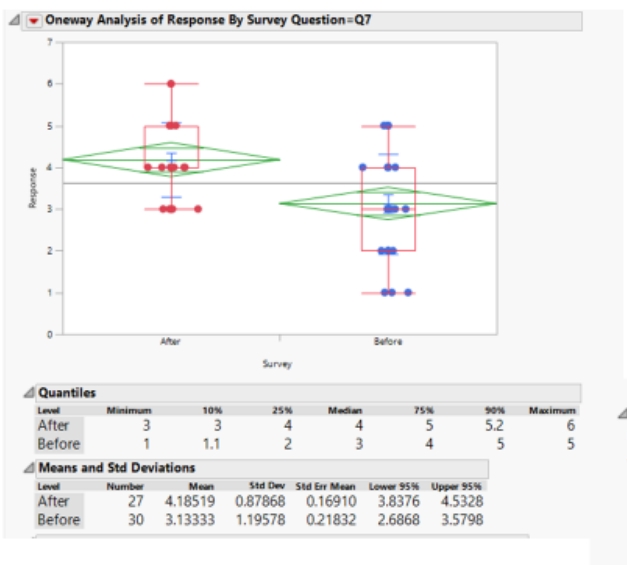
Before-After

Assuming equal variances

| | | | |
|---|---|---|---|
| Difference | -1.2630 | t Ratio | -3.12987 |
| Std Err Dif | 0.4035 | DF | 55 |
| Upper CL Dif | -0.4543 | Prob > \|t\| | 0.0028* |
| Lower CL Dif | -2.0716 | Prob > t | 0.9986 |
| Confidence | 0.95 | Prob < t | 0.0014* |



Q7 - It seems I am "running on automatic," without much awareness of what I'm doing.

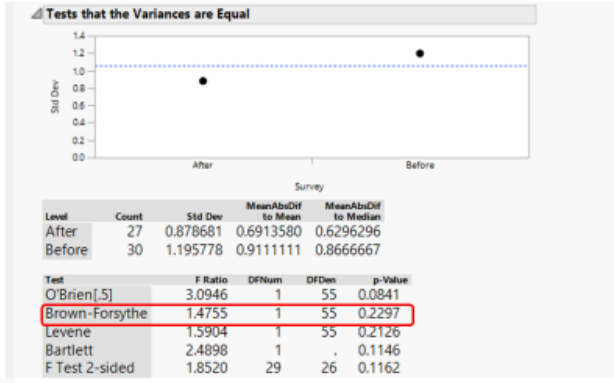



Quantiles

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| After | 3 | 3 | 4 | 4 | 5 | 5.2 | 6 |
| Before | 1 | 1.1 | 2 | 3 | 4 | 5 | 5 |

Means and Std Deviations

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| After | 27 | 4.18519 | 0.87868 | 0.16910 | 3.8376 | 4.5328 |
| Before | 30 | 3.13333 | 1.19578 | 0.21832 | 2.6868 | 3.5798 |




| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| After | 27 | 0.878681 | 0.6913580 | 0.6296296 |
| Before | 30 | 1.195778 | 0.9111111 | 0.8666667 |

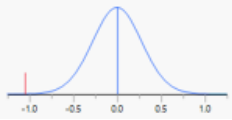
| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 3.0946 | 1 | 55 | 0.0841 |
| Brown-Forsythe | 1.4755 | 1 | 55 | 0.2297 |
| Levene | 1.5904 | 1 | 55 | 0.2126 |
| Bartlett | 2.4898 | 1 | . | 0.1146 |
| F Test 2-sided | 1.8520 | 29 | 26 | 0.1162 |

t Test

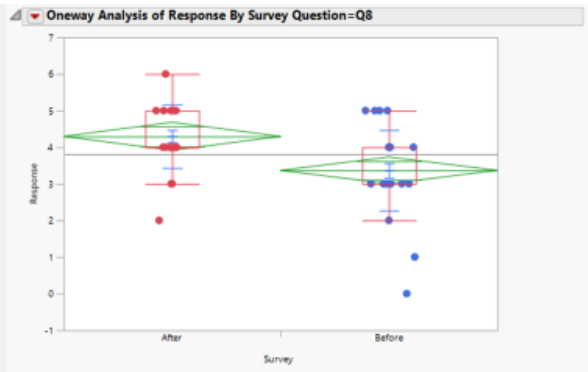
Before-After

Assuming equal variances

| | | | |
|---|---|---|---|
| Difference | -1.0519 | t Ratio | -3.74852 |
| Std Err Dif | 0.2806 | DF | 55 |
| Upper CL Dif | -0.4895 | Prob > \|t\| | 0.0004* |
| Lower CL Dif | -1.6142 | Prob > t | 0.9998 |
| Confidence | 0.95 | Prob < t | 0.0002* |



Q8 - I rush through activities without being really attentive to them.

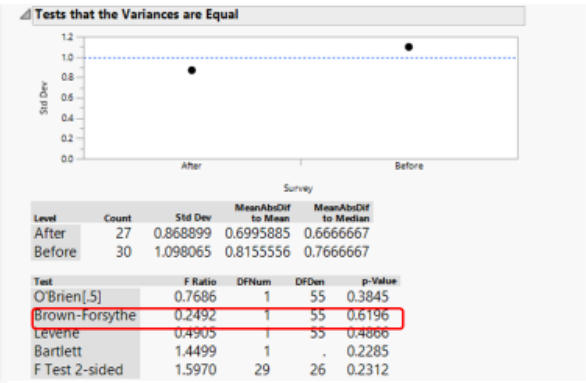



Quantiles

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| After | 2 | 3 | 4 | 4 | 5 | 5 | 6 |
| Before | 0 | 2.1 | 3 | 3 | 4 | 5 | 5 |

Means and Std Deviations

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| After | 27 | 4.29630 | 0.86890 | 0.16722 | 3.9526 | 4.6400 |
| Before | 30 | 3.36667 | 1.09807 | 0.20048 | 2.9566 | 3.7767 |




| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| After | 27 | 0.868899 | 0.6995885 | 0.6666667 |
| Before | 30 | 1.098065 | 0.8155556 | 0.7666667 |

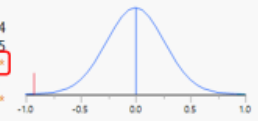
| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 0.7686 | 1 | 55 | 0.3845 |
| Brown-Forsythe | 0.2492 | 1 | 55 | 0.6196 |
| Levene | 0.4905 | 1 | 55 | 0.4866 |
| Bartlett | 1.4499 | 1 | . | 0.2285 |
| F Test 2-sided | 1.5970 | 29 | 26 | 0.2312 |

t Test

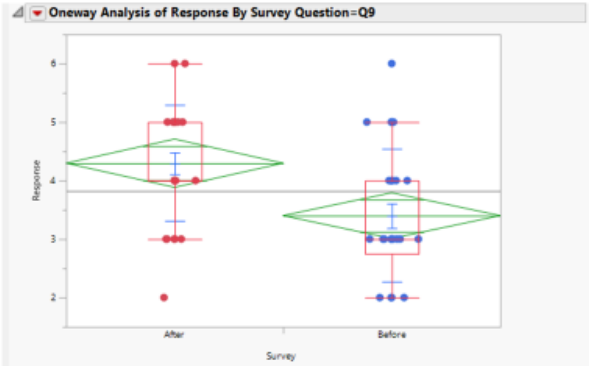
Before-After

Assuming equal variances

| | | | |
|---|---|---|---|
| Difference | -0.9296 | t Ratio | -3.51734 |
| Std Err Dif | 0.2643 | DF | 55 |
| Upper CL Dif | -0.4000 | Prob > \|t\| | 0.0009* |
| Lower CL Dif | -1.4593 | Prob > t | 0.9996 |
| Confidence | 0.95 | Prob < t | 0.0004* |



Q9 - I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there.

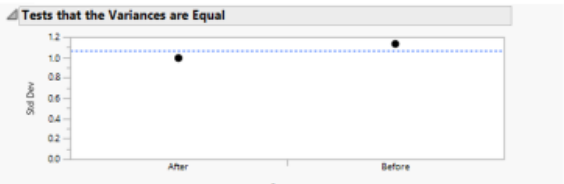



Quantiles

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maxim |
|---|---|---|---|---|---|---|---|
| After | 2 | 3 | 4 | 4 | 5 | 5.2 | |
| Before | 2 | 2 | 2.75 | 3 | 4 | 5 | |

Means and Std Deviations

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| After | 27 | 4.29630 | 0.99285 | 0.19107 | 3.9035 | 4.6891 |
| Before | 30 | 3.40000 | 1.13259 | 0.20678 | 2.9771 | 3.8229 |




| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| After | 27 | 0.992852 | 0.8257888 | 0.8148148 |
| Before | 30 | 1.132589 | 0.9466667 | 0.8666667 |

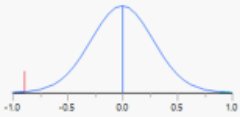
| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 0.6349 | 1 | 55 | 0.4290 |
| Brown-Forsythe | 0.0711 | 1 | 55 | 0.7907 |
| Levene | 0.6514 | 1 | 55 | 0.4231 |
| Bartlett | 0.4633 | 1 | . | 0.4961 |
| F Test 2-sided | 1.3013 | 29 | 26 | 0.5005 |

t Test

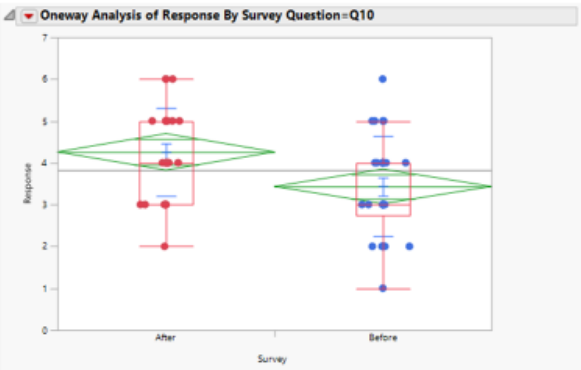
Before-After

Assuming equal variances

| | | | |
|---|---|---|---|
| Difference | -0.8963 | t Ratio | -3.16123 |
| Std Err Dif | 0.2835 | DF | 55 |
| Upper CL Dif | -0.3281 | Prob > \|t\| | 0.0026* |
| Lower CL Dif | -1.4645 | Prob > t | 0.9987 |
| Confidence | 0.95 | Prob < t | 0.0013* |




Q10 - I do jobs or tasks automatically, without being aware of what I'm doing.

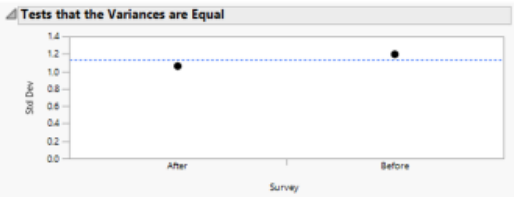



Quantiles

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| After | 2 | 3 | 3 | 4 | 5 | 6 | 6 |
| Before | 1 | 2 | 2.75 | 3 | 4 | 5 | 6 |

Means and Std Deviations

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| After | 27 | 4.25926 | 1.05948 | 0.20390 | 3.8401 | 4.6784 |
| Before | 30 | 3.43333 | 1.19434 | 0.21805 | 2.9874 | 3.8793 |




| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| After | 27 | 1.059484 | 0.8806584 | 0.8518519 |
| Before | 30 | 1.194335 | 0.9955556 | 0.9666667 |

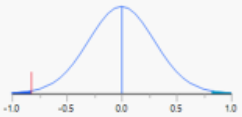
| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 0.5501 | 1 | 55 | 0.4614 |
| Brown-Forsythe | 0.3392 | 1 | 55 | 0.5627 |
| Levene | 0.5191 | 1 | 55 | 0.4743 |
| Bartlett | 0.3839 | 1 | . | 0.5355 |
| F Test 2-sided | 1.2708 | 29 | 26 | 0.5401 |

t Test

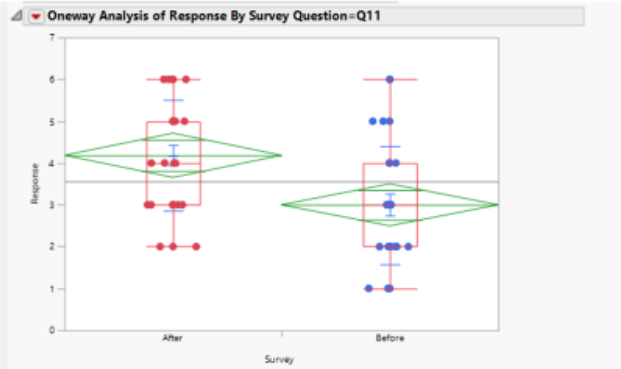
Before-After

Assuming equal variances

| | | | |
|---|---|---|---|
| Difference | -0.8259 | t Ratio | -2.74899 |
| Std Err Dif | 0.3004 | DF | 55 |
| Upper CL Dif | -0.2238 | Prob > \|t\| | 0.0081* |
| Lower CL Dif | -1.4280 | Prob > t | 0.9960 |
| Confidence | 0.95 | Prob < t | 0.0040* |



## Q11 - I find myself listening to someone with one ear, doing something else at the same time.

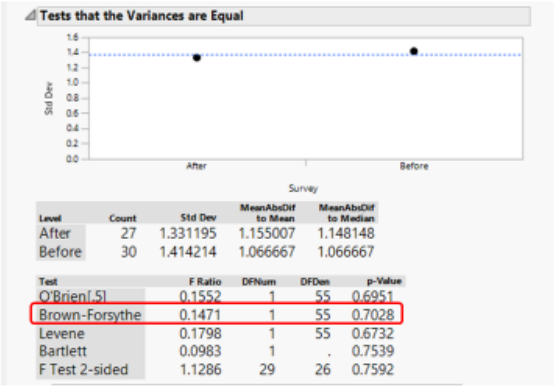



**Quantiles**

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| After | 2 | 2 | 3 | 4 | 5 | 6 | 6 |
| Before | 1 | 1 | 2 | 3 | 4 | 5 | 6 |

**Means and Std Deviations**

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| After | 27 | 4.18519 | 1.33119 | 0.25619 | 3.6586 | 4.7118 |
| Before | 30 | 3.00000 | 1.41421 | 0.25820 | 2.4719 | 3.5281 |




| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| After | 27 | 1.331195 | 1.155007 | 1.148148 |
| Before | 30 | 1.414214 | 1.066667 | 1.066667 |

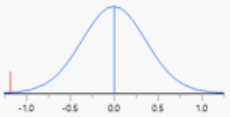
| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 0.1552 | 1 | 55 | 0.6951 |
| Brown-Forsythe | 0.1471 | 1 | 55 | 0.7028 |
| Levene | 0.1798 | 1 | 55 | 0.6732 |
| Bartlett | 0.0983 | 1 | . | 0.7539 |
| F Test 2-sided | 1.1286 | 29 | 26 | 0.7592 |

**t Test**

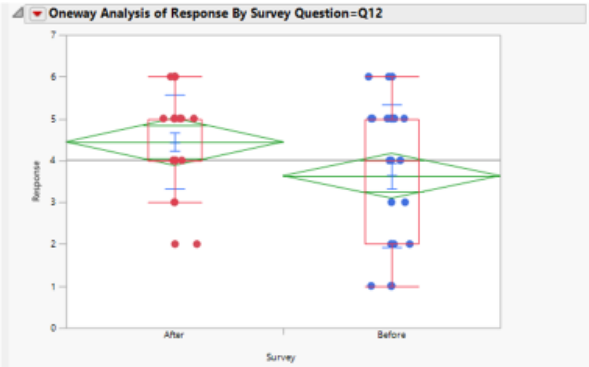
Before-After

Assuming equal variances

| | | | |
|---|---|---|---|
| Difference | -1.1852 | t Ratio | -3.24789 |
| Std Err Dif | 0.3649 | DF | 55 |
| Upper CL Dif | -0.4539 | Prob > \|t\| | 0.0020* |
| Lower CL Dif | -1.9165 | Prob > t | 0.9990 |
| Confidence | 0.95 | Prob < t | 0.0010* |



## Q12 - I drive places on 'automatic pilot' and then wonder why I went there.

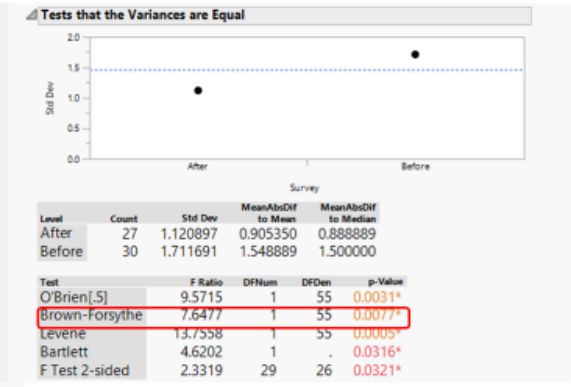



**Quantiles**

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| After | 2 | 2.8 | 4 | 4 | 5 | 6 | 6 |
| Before | 1 | 1 | 2 | 4 | 5 | 5.9 | 6 |

**Means and Std Deviations**

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| After | 27 | 4.44444 | 1.12090 | 0.21572 | 4.0010 | 4.8879 |
| Before | 30 | 3.63333 | 1.71169 | 0.31251 | 2.9942 | 4.2725 |




| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| After | 27 | 1.120897 | 0.905350 | 0.888889 |
| Before | 30 | 1.711691 | 1.548889 | 1.500000 |

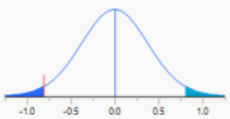
| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 9.5715 | 1 | 55 | 0.0031* |
| Brown-Forsythe | 7.6477 | 1 | 55 | 0.0077* |
| Levene | 13.7558 | 1 | 55 | 0.0005* |
| Bartlett | 4.6202 | 1 | . | 0.0316* |
| F Test 2-sided | 2.3319 | 29 | 26 | 0.0321* |

**t Test**

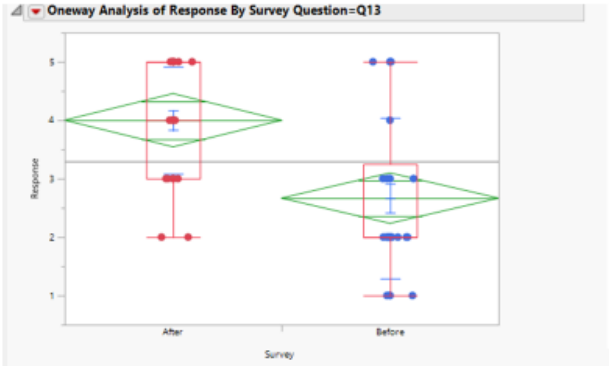
Before-After

Assuming unequal variances

| | | | |
|---|---|---|---|
| Difference | -0.8111 | t Ratio | -2.13601 |
| Std Err Dif | 0.3797 | DF | 50.44534 |
| Upper CL Dif | -0.0486 | Prob > \|t\| | 0.0376* |
| Lower CL Dif | -1.5737 | Prob > t | 0.9812 |
| Confidence | 0.95 | Prob < t | 0.0188* |



## Q13 - I find myself preoccupied with the future or the past. I find myself doing things without paying attention.

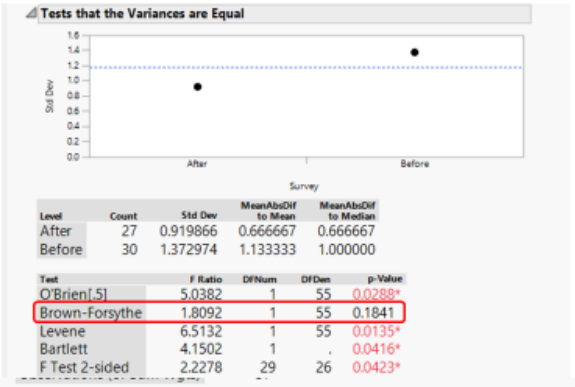



Quantiles

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| After | 2 | 2.8 | 3 | 4 | 5 | 5 | 5 |
| Before | 1 | 1 | 2 | 2 | 3.25 | 5 | 5 |

Means and Std Deviations

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| After | 27 | 4.00000 | 0.91987 | 0.17703 | 3.6361 | 4.3639 |
| Before | 30 | 2.66667 | 1.37297 | 0.25067 | 2.1540 | 3.1793 |




| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| After | 27 | 0.919866 | 0.666667 | 0.666667 |
| Before | 30 | 1.372974 | 1.133333 | 1.000000 |

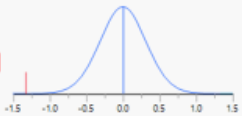
| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 5.0382 | 1 | 55 | 0.0288* |
| Brown-Forsythe | 1.8092 | 1 | 55 | 0.1841 |
| Levene | 6.5132 | 1 | 55 | 0.0135* |
| Bartlett | 4.1502 | 1 | . | 0.0416* |
| F Test 2-sided | 2.2278 | 29 | 26 | 0.0423* |

t Test

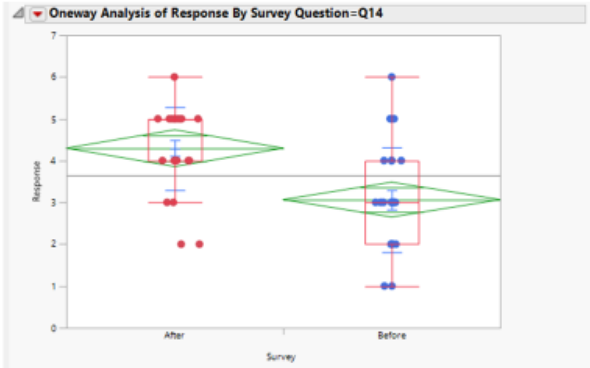
Before-After

Assuming equal variances

| | | | |
|---|---|---|---|
| Difference | -1.3333 | t Ratio | -4.25718 |
| Std Err Dif | 0.3132 | DF | 55 |
| Upper CL Dif | -0.7057 | Prob > \|t\| | <.0001* |
| Lower CL Dif | -1.9610 | Prob > t | 1.0000 |
| Confidence | 0.95 | Prob < t | <.0001* |



## Q14 - I find myself doing things without paying attention.

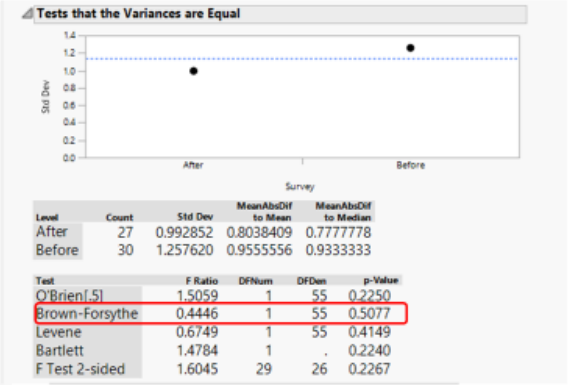



Quantiles

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| After | 2 | 2.8 | 4 | 5 | 5 | 5 | 6 |
| Before | 1 | 1.1 | 2 | 3 | 4 | 5 | 6 |

Means and Std Deviations

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| After | 27 | 4.29630 | 0.99285 | 0.19107 | 3.9035 | 4.6891 |
| Before | 30 | 3.06667 | 1.25762 | 0.22961 | 2.5971 | 3.5363 |




| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| After | 27 | 0.992852 | 0.8038409 | 0.7777778 |
| Before | 30 | 1.257620 | 0.9555556 | 0.9333333 |

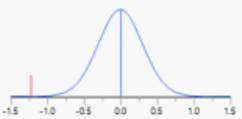
| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 1.5059 | 1 | 55 | 0.2250 |
| Brown-Forsythe | 0.4446 | 1 | 55 | 0.5077 |
| Levene | 0.6749 | 1 | 55 | 0.4149 |
| Bartlett | 1.4784 | 1 | . | 0.2240 |
| F Test 2-sided | 1.6045 | 29 | 26 | 0.2267 |

t Test

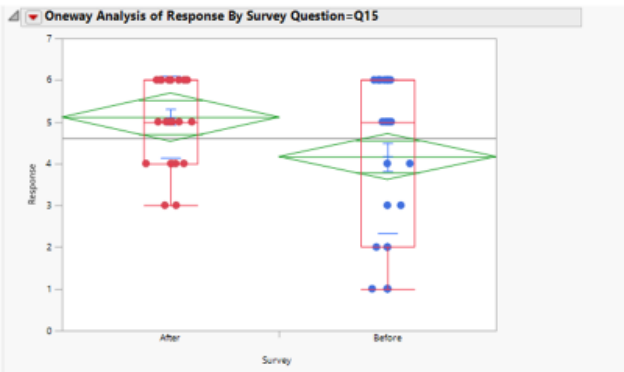
Before-After

Assuming equal variances

| | | | |
|---|---|---|---|
| Difference | -1.2296 | t Ratio | -4.06555 |
| Std Err Dif | 0.3025 | DF | 55 |
| Upper CL Dif | -0.6235 | Prob > \|t\| | 0.0002* |
| Lower CL Dif | -1.8358 | Prob > t | 0.9999 |
| Confidence | 0.95 | Prob < t | <.0001* |



# Q15 - I snack without being aware that I'm eating.

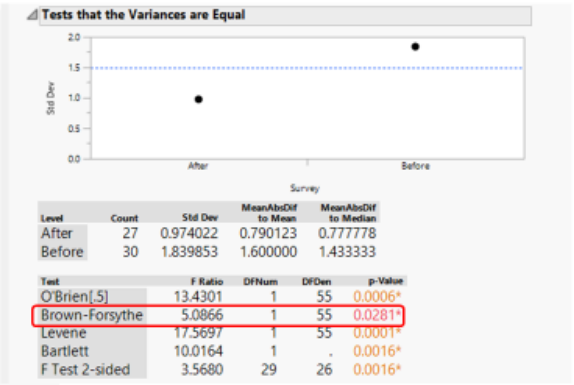



**Quantiles**

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| After | 3 | 3.8 | 4 | 5 | 6 | 6 | 6 |
| Before | 1 | 1 | 2 | 5 | 6 | 6 | 6 |

**Means and Std Deviations**

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| After | 27 | 5.11111 | 0.97402 | 0.18745 | 4.7258 | 5.4964 |
| Before | 30 | 4.16667 | 1.83985 | 0.33591 | 3.4797 | 4.8537 |




| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| After | 27 | 0.974022 | 0.790123 | 0.777778 |
| Before | 30 | 1.839853 | 1.600000 | 1.433333 |

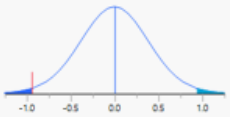
| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 13.4301 | 1 | 55 | 0.0006* |
| Brown-Forsythe | 5.0866 | 1 | 55 | 0.0281* |
| Levene | 17.5697 | 1 | 55 | 0.0001* |
| Bartlett | 10.0164 | 1 | . | 0.0016* |
| F Test 2-sided | 3.5680 | 29 | 26 | 0.0016* |

**t Test**

Before-After

Assuming unequal variances

| | | | |
|---|---|---|---|
| Difference | -0.9444 | t Ratio | -2.45519 |
| Std Err Dif | 0.3847 | DF | 45.00587 |
| Upper CL Dif | -0.1697 | Prob > \|t\| | 0.0180* |
| Lower CL Dif | -1.7192 | Prob > t | 0.9910 |
| Confidence | 0.95 | Prob < t | 0.0090* |



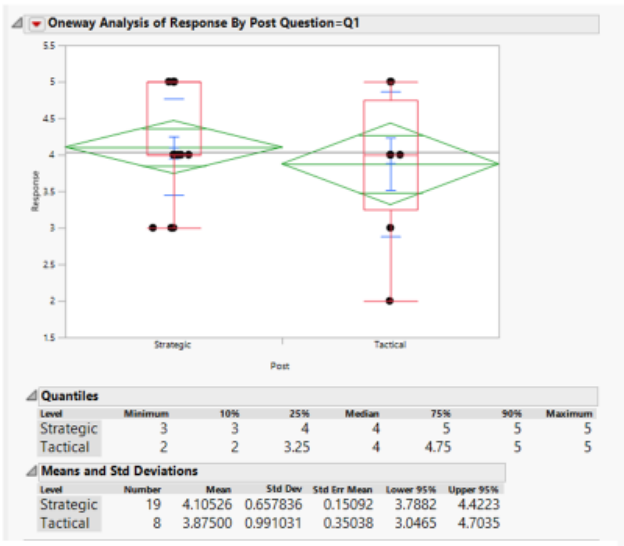
**Appendix G:**

**Statistical Analysis**

**MAAS results after the intervention**

**Tactical and Strategic Roles**

Q1- I could be experiencing some emotion and not be conscious of it until some time later.

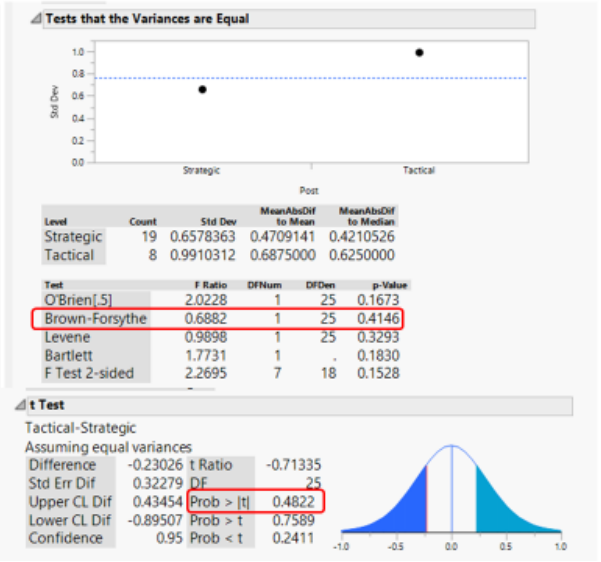



Quantiles

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| Strategic | 3 | 3 | 4 | 4 | 5 | 5 | 5 |
| Tactical | 2 | 2 | 3.25 | 4 | 4.75 | 5 | 5 |

Means and Std Deviations

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| Strategic | 19 | 4.10526 | 0.657836 | 0.15092 | 3.7882 | 4.4223 |
| Tactical | 8 | 3.87500 | 0.991031 | 0.35038 | 3.0465 | 4.7035 |




| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| Strategic | 19 | 0.6578363 | 0.4709141 | 0.4210526 |
| Tactical | 8 | 0.9910312 | 0.6875000 | 0.6250000 |

| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 2.0228 | 1 | 25 | 0.1673 |
| Brown-Forsythe | 0.6882 | 1 | 25 | 0.4146 |
| Levene | 0.9898 | 1 | 25 | 0.3293 |
| Bartlett | 1.7731 | 1 | . | 0.1830 |
| F Test 2-sided | 2.2695 | 7 | 18 | 0.1528 |

t Test

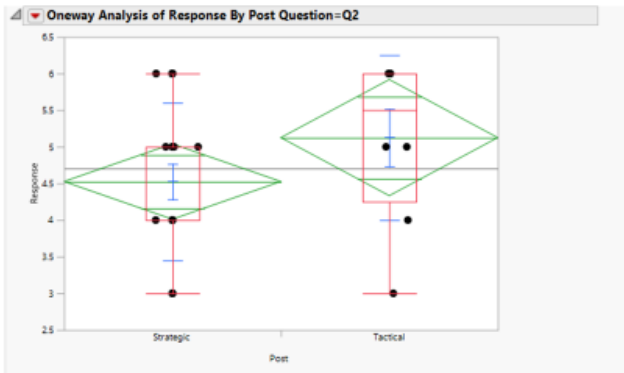
Tactical-Strategic

Assuming equal variances

| | | | |
|---|---|---|---|
| Difference | -0.23026 | t Ratio | -0.71335 |
| Std Err Dif | 0.32279 | DF | 25 |
| Upper CL Dif | 0.43454 | Prob > \|t\| | 0.4822 |
| Lower CL Dif | -0.89507 | Prob > t | 0.7589 |
| Confidence | 0.95 | Prob < t | 0.2411 |



Q2 - I break or spill things because of carelessness, not paying attention, or thinking of something else.

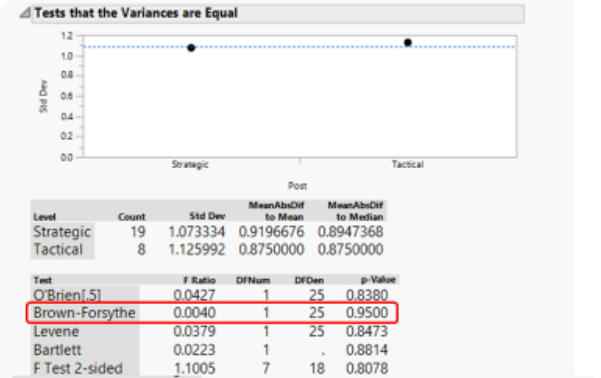



Quantiles

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| Strategic | 3 | 3 | 4 | 5 | 5 | 6 | 6 |
| Tactical | 3 | 3 | 4.25 | 5.5 | 6 | 6 | 6 |

Means and Std Deviations

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| Strategic | 19 | 4.52632 | 1.07333 | 0.24624 | 4.0090 | 5.0436 |
| Tactical | 8 | 5.12500 | 1.12599 | 0.39810 | 4.1836 | 6.0664 |




| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| Strategic | 19 | 1.073334 | 0.9196676 | 0.8947368 |
| Tactical | 8 | 1.125992 | 0.8750000 | 0.8750000 |

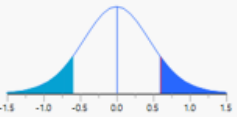
| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 0.0427 | 1 | 25 | 0.8380 |
| Brown-Forsythe | 0.0040 | 1 | 25 | 0.9500 |
| Levene | 0.0379 | 1 | 25 | 0.8473 |
| Bartlett | 0.0223 | 1 | . | 0.8814 |
| F Test 2-sided | 1.1005 | 7 | 18 | 0.8078 |

t Test

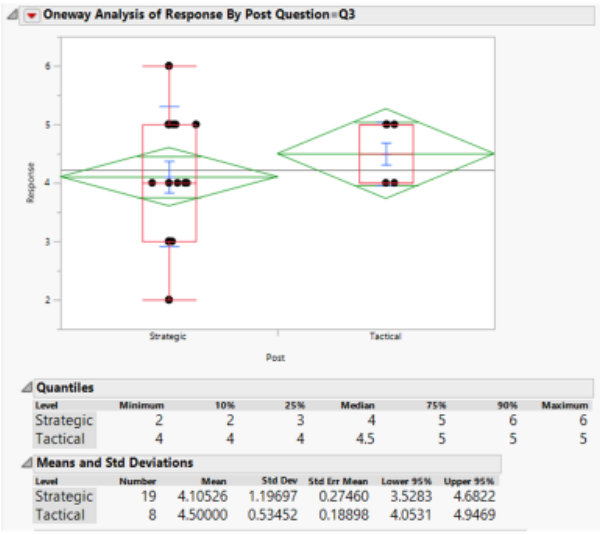
Tactical-Strategic

Assuming equal variances

| | | | |
|---|---|---|---|
| Difference | 0.5987 | t Ratio | 1.305194 |
| Std Err Dif | 0.4587 | DF | 25 |
| Upper CL Dif | 1.5434 | Prob > \|t\| | 0.2037 |
| Lower CL Dif | -0.3460 | Prob > t | 0.1019 |
| Confidence | 0.95 | Prob < t | 0.8981 |



## Q3 - I find it difficult to stay focused on what's happening in the present.

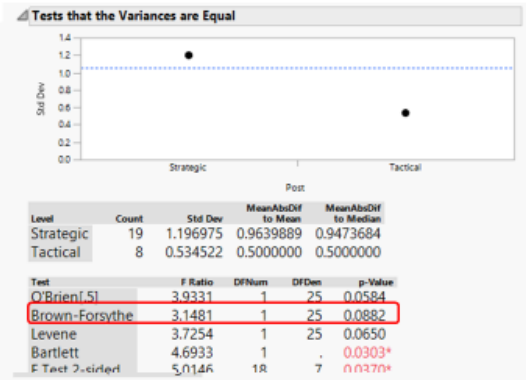



**Quantiles**

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| Strategic | 2 | 2 | 3 | 4 | 5 | 6 | 6 |
| Tactical | 4 | 4 | 4 | 4.5 | 5 | 5 | 5 |

**Means and Std Deviations**

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| Strategic | 19 | 4.10526 | 1.19697 | 0.27460 | 3.5283 | 4.6822 |
| Tactical | 8 | 4.50000 | 0.53452 | 0.18898 | 4.0531 | 4.9469 |




| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| Strategic | 19 | 1.196975 | 0.9639889 | 0.9473684 |
| Tactical | 8 | 0.534522 | 0.5000000 | 0.5000000 |

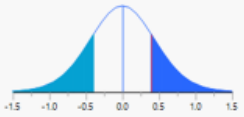
| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 3.9331 | 1 | 25 | 0.0584 |
| Brown-Forsythe | 3.1481 | 1 | 25 | 0.0882 |
| Levene | 3.7254 | 1 | 25 | 0.0650 |
| Bartlett | 4.6933 | 1 | . | 0.0303* |
| F Test 2-sided | 5.0146 | 18 | 7 | 0.0370* |

**t Test**

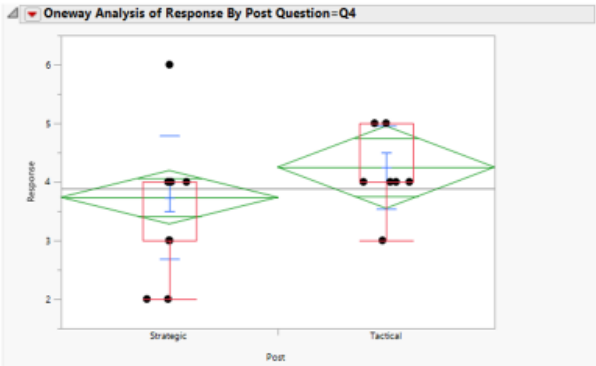
Tactical-Strategic

Assuming equal variances

| | | | |
|---|---|---|---|
| Difference | 0.3947 | t Ratio | 0.888336 |
| Std Err Dif | 0.4444 | DF | 25 |
| Upper CL Dif | 1.3099 | Prob > \|t\| | 0.3828 |
| Lower CL Dif | -0.5204 | Prob > t | 0.1914 |
| Confidence | 0.95 | Prob < t | 0.8086 |



## Q4 - I tend to walk quickly to get where I'm getting without paying attention to what I experience along the way..

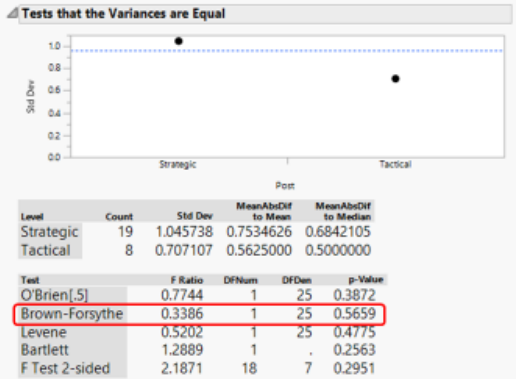



**Quantiles**

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| Strategic | 2 | 2 | 3 | 4 | 4 | 6 | 6 |
| Tactical | 3 | 3 | 4 | 4 | 5 | 5 | 5 |

**Means and Std Deviations**

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| Strategic | 19 | 3.73684 | 1.04574 | 0.23991 | 3.2328 | 4.2409 |
| Tactical | 8 | 4.25000 | 0.70711 | 0.25000 | 3.6588 | 4.8412 |




| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| Strategic | 19 | 1.045738 | 0.7534626 | 0.6842105 |
| Tactical | 8 | 0.707107 | 0.5625000 | 0.5000000 |

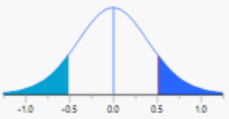
| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 0.7744 | 1 | 25 | 0.3872 |
| Brown-Forsythe | 0.3386 | 1 | 25 | 0.5659 |
| Levene | 0.5202 | 1 | 25 | 0.4775 |
| Bartlett | 1.2889 | 1 | . | 0.2563 |
| F Test 2-sided | 2.1871 | 18 | 7 | 0.2951 |

**t Test**

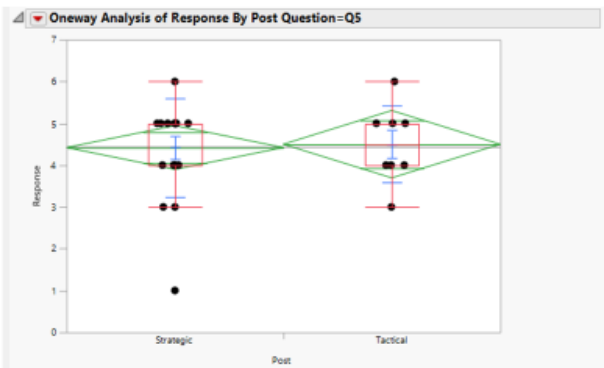
Tactical-Strategic

Assuming equal variances

| | | | |
|---|---|---|---|
| Difference | 0.5132 | t Ratio | 1.264343 |
| Std Err Dif | 0.4059 | DF | 25 |
| Upper CL Dif | 1.3491 | Prob > \|t\| | 0.2178 |
| Lower CL Dif | -0.3227 | Prob > t | 0.1089 |
| Confidence | 0.95 | Prob < t | 0.8911 |



Q5 - I tend to notice feelings of physical tension or discomfort until they really grab my attention.




Quantiles

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| Strategic | 1 | 3 | 4 | 5 | 5 | 6 | 6 |
| Tactical | 3 | 3 | 4 | 4.5 | 5 | 6 | 6 |

Means and Std Deviations

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| Strategic | 19 | 4.42105 | 1.16980 | 0.26837 | 3.8572 | 4.9849 |
| Tactical | 8 | 4.50000 | 0.92582 | 0.32733 | 3.7260 | 5.2740 |


| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| Strategic | 19 | 1.169795 | 0.8808864 | 0.7894737 |
| Tactical | 8 | 0.925820 | 0.7500000 | 0.7500000 |

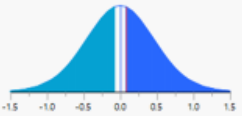
| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 0.2315 | 1 | 25 | 0.6346 |
| Brown-Forsythe | 0.0106 | 1 | 25 | 0.9188 |
| Levene | 0.2117 | 1 | 25 | 0.6494 |
| Bartlett | 0.4864 | 1 | . | 0.4855 |
| F Test 2-sided | 1.5965 | 18 | 7 | 0.5439 |

t Test

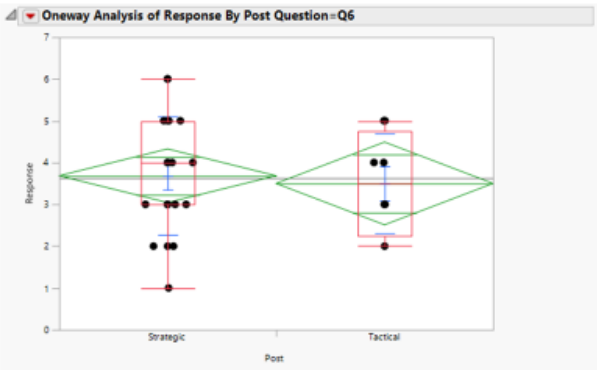
Tactical-Strategic

Assuming equal variances

| | | | |
|---|---|---|---|
| Difference | 0.0789 | t Ratio | 0.169224 |
| Std Err Dif | 0.4665 | DF | 25 |
| Upper CL Dif | 1.0398 | Prob > \|t\| | 0.8670 |
| Lower CL Dif | -0.8819 | Prob > t | 0.4335 |
| Confidence | 0.95 | Prob < t | 0.5665 |



Q6 - I forget a person's name almost as soon as I've been told it for the first time.

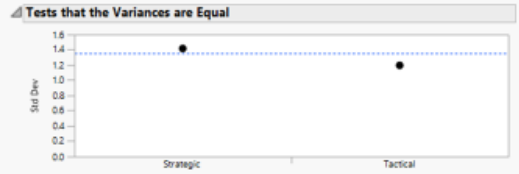



Quantiles

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| Strategic | 1 | 2 | 3 | 4 | 5 | 6 | 6 |
| Tactical | 2 | 2 | 2.25 | 3.5 | 4.75 | 5 | 5 |

Means and Std Deviations

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| Strategic | 19 | 3.68421 | 1.41628 | 0.32492 | 3.0016 | 4.3668 |
| Tactical | 8 | 3.50000 | 1.19523 | 0.42258 | 2.5008 | 4.4992 |




| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| Strategic | 19 | 1.416280 | 1.174515 | 1.157895 |
| Tactical | 8 | 1.195229 | 1.000000 | 1.000000 |

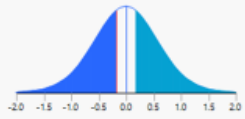
| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 0.4490 | 1 | 25 | 0.5090 |
| Brown-Forsythe | 0.2415 | 1 | 25 | 0.6274 |
| Levene | 0.3603 | 1 | 25 | 0.5537 |
| Bartlett | 0.2615 | 1 | . | 0.6091 |

t Test

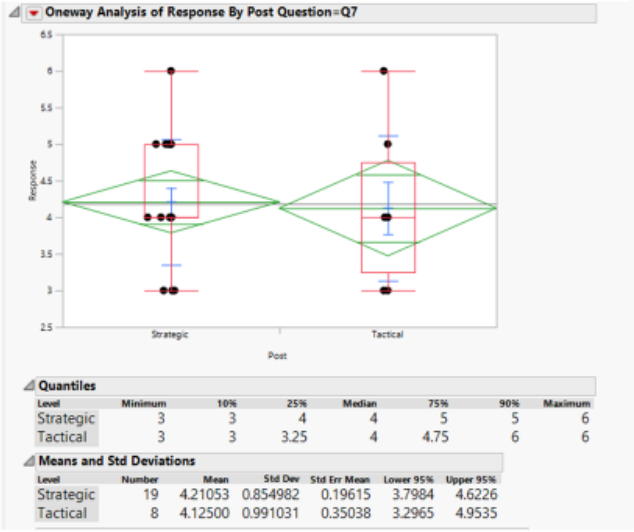
Tactical-Strategic

Assuming equal variances

| | | | |
|---|---|---|---|
| Difference | -0.1842 | t Ratio | -0.32185 |
| Std Err Dif | 0.5724 | DF | 25 |
| Upper CL Dif | 0.9946 | Prob > \|t\| | 0.7502 |
| Lower CL Dif | -1.3630 | Prob > t | 0.6249 |
| Confidence | 0.95 | Prob < t | 0.3751 |



Q7 - It seems I am "running on automatic," without much awareness of what I'm doing.




Quantiles

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| Strategic | 3 | 3 | 4 | 4 | 5 | 5 | 6 |
| Tactical | 3 | 3 | 3.25 | 4 | 4.75 | 6 | 6 |

Means and Std Deviations

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| Strategic | 19 | 4.21053 | 0.854982 | 0.19615 | 3.7984 | 4.6226 |
| Tactical | 8 | 4.12500 | 0.991031 | 0.35038 | 3.2965 | 4.9535 |


| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| Strategic | 19 | 0.8549820 | 0.6869806 | 0.6315789 |
| Tactical | 8 | 0.9910312 | 0.6875000 | 0.6250000 |

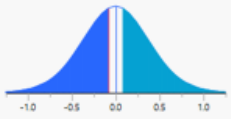
| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 0.2963 | 1 | 25 | 0.5910 |
| Brown-Forsythe | 0.0006 | 1 | 25 | 0.9808 |
| Levene | 0.0000 | 1 | 25 | 0.9982 |
| Bartlett | 0.2174 | 1 | . | 0.6410 |
| F Test 2-sided | 1.3436 | 7 | 18 | 0.5745 |

t Test

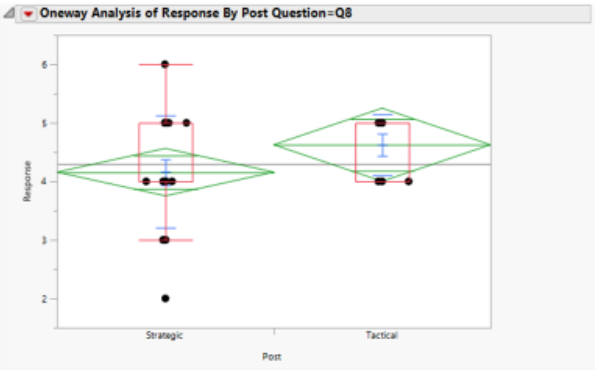
Tactical-Strategic

Assuming equal variances

| | | | |
|---|---|---|---|
| Difference | -0.08553 | t Ratio | -0.22669 |
| Std Err Dif | 0.37728 | DF | 25 |
| Upper CL Dif | 0.69149 | Prob > \|t\| | 0.8225 |
| Lower CL Dif | -0.86255 | Prob > t | 0.5887 |
| Confidence | 0.95 | Prob < t | 0.4113 |



Q8 - I rush through activities without being really attentive to them.

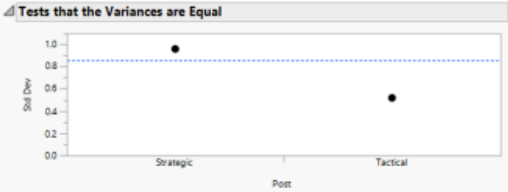



Quantiles

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| Strategic | 2 | 3 | 4 | 4 | 5 | 5 | 6 |
| Tactical | 4 | 4 | 4 | 5 | 5 | 5 | 5 |

Means and Std Deviations

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| Strategic | 19 | 4.15789 | 0.958190 | 0.21982 | 3.6961 | 4.6197 |
| Tactical | 8 | 4.62500 | 0.517549 | 0.18298 | 4.1923 | 5.0577 |




| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| Strategic | 19 | 0.9581903 | 0.7257618 | 0.6842105 |
| Tactical | 8 | 0.5175492 | 0.4687500 | 0.3750000 |

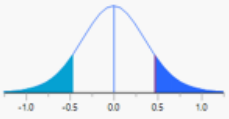
| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 1.8402 | 1 | 25 | 0.1870 |
| Brown-Forsythe | 1.3483 | 1 | 25 | 0.2565 |
| Levene | 1.4010 | 1 | 25 | 0.2477 |
| Bartlett | 2.9419 | 1 | . | 0.0863 |
| F Test 2-sided | 3.4277 | 18 | 7 | 0.1029 |

t Test

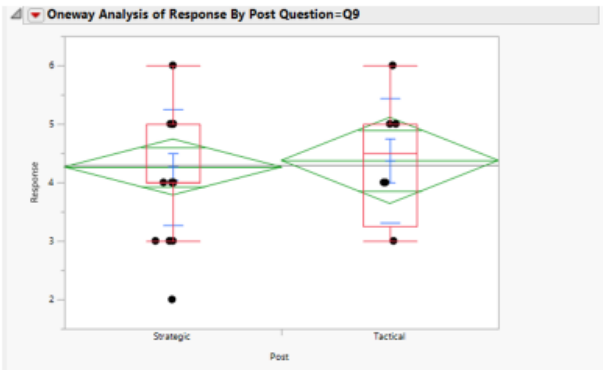
Tactical-Strategic

Assuming equal variances

| | | | |
|---|---|---|---|
| Difference | 0.4671 | t Ratio | 1.291815 |
| Std Err Dif | 0.3616 | DF | 25 |
| Upper CL Dif | 1.2118 | Prob > \|t\| | 0.2082 |
| Lower CL Dif | -0.2776 | Prob > t | 0.1041 |
| Confidence | 0.95 | Prob < t | 0.8959 |



Q9 - I get so focused on the goal I want to achieve that I lose touch with what I'm doing right now to get there.

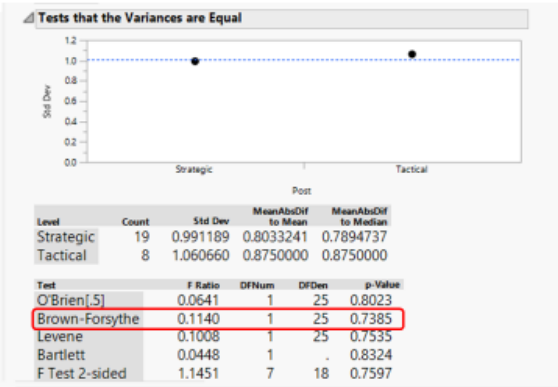



Quantiles

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| Strategic | 2 | 3 | 4 | 4 | 5 | 5 | 6 |
| Tactical | 3 | 3 | 3.25 | 4.5 | 5 | 6 | 6 |

Means and Std Deviations

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| Strategic | 19 | 4.26316 | 0.99119 | 0.22739 | 3.7854 | 4.7409 |
| Tactical | 8 | 4.37500 | 1.06066 | 0.37500 | 3.4883 | 5.2617 |




| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| Strategic | 19 | 0.991189 | 0.8033241 | 0.7894737 |
| Tactical | 8 | 1.060660 | 0.8750000 | 0.8750000 |

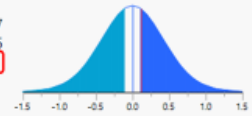
| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 0.0641 | 1 | 25 | 0.8023 |
| Brown-Forsythe | 0.1140 | 1 | 25 | 0.7385 |
| Levene | 0.1008 | 1 | 25 | 0.7535 |
| Bartlett | 0.0448 | 1 | . | 0.8324 |
| F Test 2-sided | 1.1451 | 7 | 18 | 0.7597 |

t Test

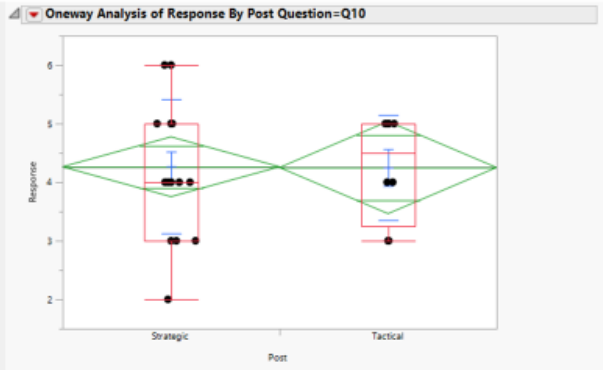
Tactical-Strategic

Assuming equal variances

| | | | |
|---|---|---|---|
| Difference | 0.11184 | t Ratio | 0.262447 |
| Std Err Dif | 0.42615 | DF | 25 |
| Upper CL Dif | 0.98952 | Prob > \|t\| | 0.7951 |
| Lower CL Dif | -0.76583 | Prob > t | 0.3976 |
| Confidence | 0.95 | Prob < t | 0.6024 |



Q10 - I do jobs or tasks automatically, without being aware of what I'm doing.

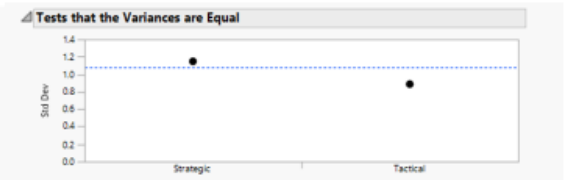



Quantiles

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| Strategic | 2 | 3 | 3 | 4 | 5 | 6 | 6 |
| Tactical | 3 | 3 | 3.25 | 4.5 | 5 | 5 | 5 |

Means and Std Deviations

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| Strategic | 19 | 4.26316 | 1.14708 | 0.26316 | 3.7103 | 4.8160 |
| Tactical | 8 | 4.25000 | 0.88641 | 0.31339 | 3.5089 | 4.9911 |




| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| Strategic | 19 | 1.147079 | 0.9362881 | 0.8947368 |
| Tactical | 8 | 0.886405 | 0.7500000 | 0.7500000 |

| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 0.8637 | 1 | 25 | 0.3616 |
| Brown-Forsythe | 0.2612 | 1 | 25 | 0.6138 |
| Levene | 0.6084 | 1 | 25 | 0.4427 |
| Bartlett | 0.5861 | 1 | . | 0.4439 |
| F Test 2-sided | 1.6746 | 18 | 7 | 0.4994 |

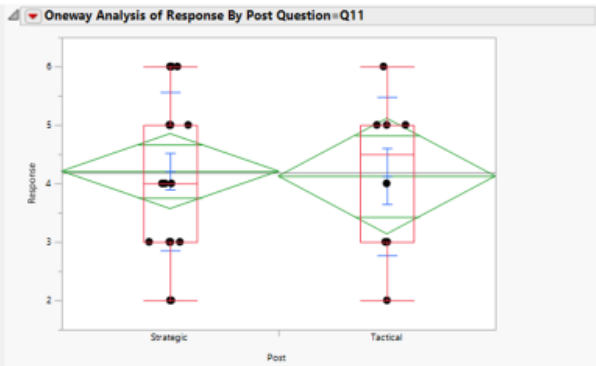
t Test

Tactical-Strategic

Assuming equal variances

| | | | |
|---|---|---|---|
| Difference | -0.01316 | t Ratio | -0.02889 |
| Std Err Dif | 0.45537 | DF | 25 |
| Upper CL Dif | 0.92469 | Prob > \|t\| | 0.9772 |
| Lower CL Dif | -0.95101 | Prob > t | 0.5114 |
| Confidence | 0.95 | Prob < t | 0.4886 |

Q11 - I find myself listening to someone with one ear, doing something else at the same time.

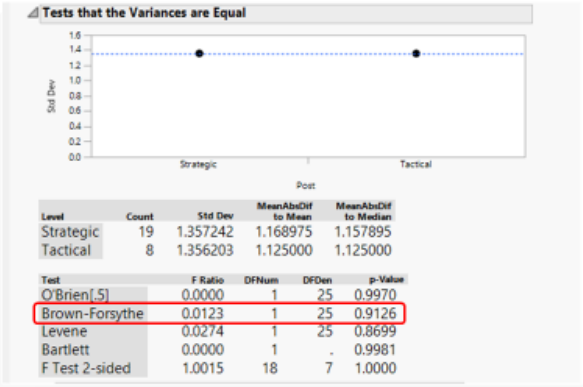



Quantiles

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| Strategic | 2 | 2 | 3 | 4 | 5 | 6 | 6 |
| Tactical | 2 | 2 | 3 | 4.5 | 5 | 6 | 6 |

Means and Std Deviations

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| Strategic | 19 | 4.21053 | 1.35724 | 0.31137 | 3.5564 | 4.8647 |
| Tactical | 8 | 4.12500 | 1.35620 | 0.47949 | 2.9912 | 5.2588 |




| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| Strategic | 19 | 1.357242 | 1.168975 | 1.157895 |
| Tactical | 8 | 1.356203 | 1.125000 | 1.125000 |

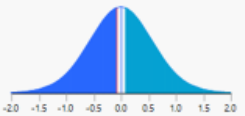
| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 0.0000 | 1 | 25 | 0.9970 |
| Brown-Forsythe | 0.0123 | 1 | 25 | 0.9126 |
| Levene | 0.0274 | 1 | 25 | 0.8699 |
| Bartlett | 0.0000 | 1 | . | 0.9981 |
| F Test 2-sided | 1.0015 | 18 | 7 | 1.0000 |

t Test

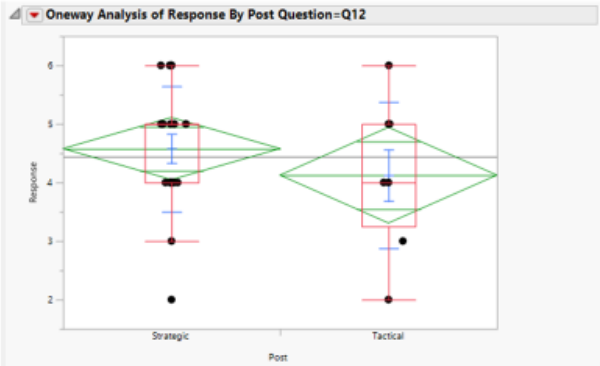
Tactical-Strategic

Assuming equal variances

| | | | |
|---|---|---|---|
| Difference | -0.0855 | t Ratio | -0.14955 |
| Std Err Dif | 0.5719 | DF | 25 |
| Upper CL Dif | 1.0923 | Prob > \|t\| | 0.8823 |
| Lower CL Dif | -1.2634 | Prob > t | 0.5588 |
| Confidence | 0.95 | Prob < t | 0.4412 |




Q12 - I drive places on 'automatic pilot' and then wonder why I went there.

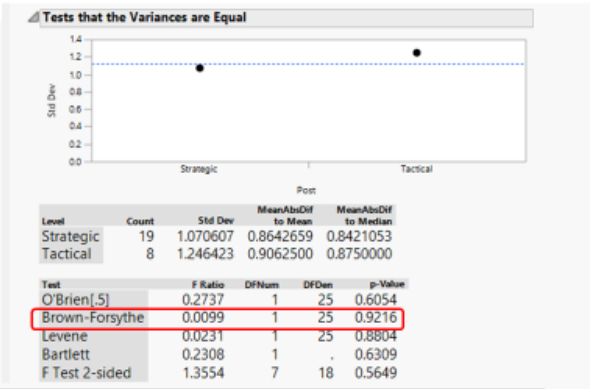



Quantiles

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| Strategic | 2 | 3 | 4 | 5 | 5 | 6 | 6 |
| Tactical | 2 | 2 | 3.25 | 4 | 5 | 6 | 6 |

Means and Std Deviations

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| Strategic | 19 | 4.57895 | 1.07061 | 0.24561 | 4.0629 | 5.0950 |
| Tactical | 8 | 4.12500 | 1.24642 | 0.44068 | 3.0830 | 5.1670 |




| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| Strategic | 19 | 1.070607 | 0.8642659 | 0.8421053 |
| Tactical | 8 | 1.246423 | 0.9062500 | 0.8750000 |

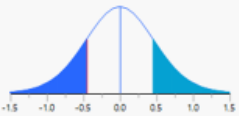
| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 0.2737 | 1 | 25 | 0.6054 |
| Brown-Forsythe | 0.0099 | 1 | 25 | 0.9216 |
| Levene | 0.0231 | 1 | 25 | 0.8804 |
| Bartlett | 0.2308 | 1 | . | 0.6309 |
| F Test 2-sided | 1.3554 | 7 | 18 | 0.5649 |

t Test

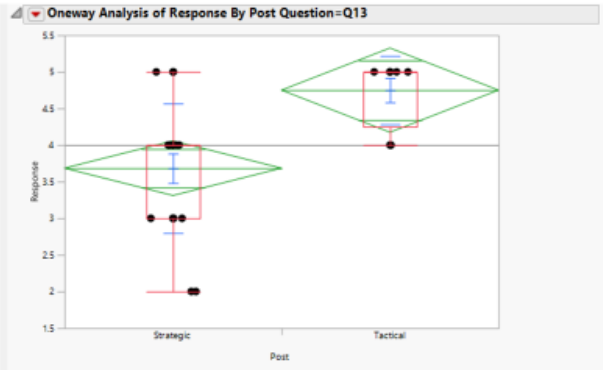
Tactical-Strategic

Assuming equal variances

| | | | |
|---|---|---|---|
| Difference | -0.4539 | t Ratio | -0.95943 |
| Std Err Dif | 0.4731 | DF | 25 |
| Upper CL Dif | 0.5205 | Prob > \|t\| | 0.3465 |
| Lower CL Dif | -1.4284 | Prob > t | 0.8267 |
| Confidence | 0.95 | Prob < t | 0.1733 |



## Q13 - I find myself preoccupied with the future or the past. I find myself doing things without paying attention.




**Quantiles**

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| Strategic | 2 | 2 | 3 | 4 | 4 | 5 | 5 |
| Tactical | 4 | 4 | 4.25 | 5 | 5 | 5 | 5 |

**Means and Std Deviations**

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| Strategic | 19 | 3.68421 | 0.885226 | 0.20308 | 3.2575 | 4.1109 |
| Tactical | 8 | 4.75000 | 0.462910 | 0.16366 | 4.3630 | 5.1370 |


| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| Strategic | 19 | 0.8852264 | 0.7146814 | 0.6315789 |
| Tactical | 8 | 0.4629100 | 0.3750000 | 0.2500000 |

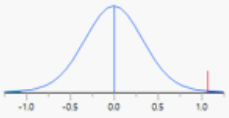
| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 2.3726 | 1 | 25 | 0.1360 |
| Brown-Forsythe | 2.0655 | 1 | 25 | 0.1631 |
| Levene | 3.4004 | 1 | 25 | 0.0771 |
| Bartlett | 3.2202 | 1 | . | 0.0727 |
| F Test 2-sided | 3.6569 | 18 | 7 | 0.0871 |

**t Test**

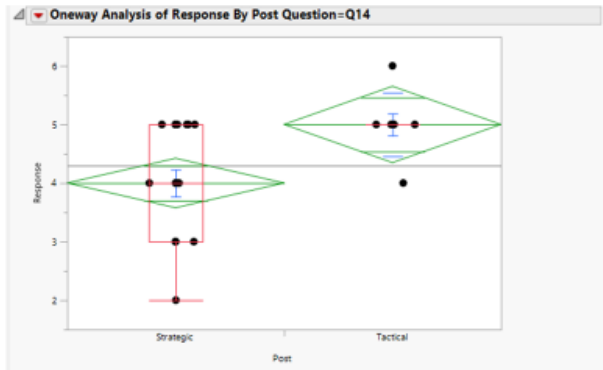
Tactical-Strategic

Assuming equal variances

| | | | |
|---|---|---|---|
| Difference | 1.06579 | t Ratio | 3.200706 |
| Std Err Dif | 0.33299 | DF | 25 |
| Upper CL Dif | 1.75159 | Prob > \|t\| | 0.0037* |
| Lower CL Dif | 0.37999 | Prob > t | 0.0019* |
| Confidence | 0.95 | Prob < t | 0.9981 |



## Q14 - I find myself doing things without paying attention.

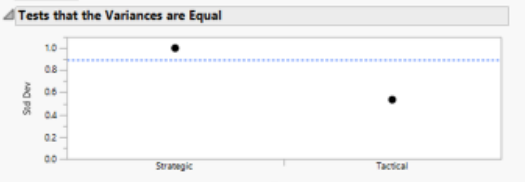



**Quantiles**

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| Strategic | 2 | 2 | 3 | 4 | 5 | 5 | 5 |
| Tactical | 4 | 4 | 5 | 5 | 5 | 6 | 6 |

**Means and Std Deviations**

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| Strategic | 19 | 4.00000 | 1.00000 | 0.22942 | 3.5180 | 4.4820 |
| Tactical | 8 | 5.00000 | 0.53452 | 0.18898 | 4.5531 | 5.4469 |




| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| Strategic | 19 | 1.000000 | 0.7368421 | 0.7368421 |
| Tactical | 8 | 0.534522 | 0.2500000 | 0.2500000 |

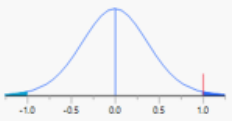
| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 2.2613 | 1 | 25 | 0.1452 |
| Brown-Forsythe | 3.6321 | 1 | 25 | 0.0682 |
| Levene | 3.6321 | 1 | 25 | 0.0682 |
| Bartlett | 3.0307 | 1 | . | 0.0817 |
| F Test 2-sided | 3.5000 | 18 | 7 | 0.0976 |

**t Test**

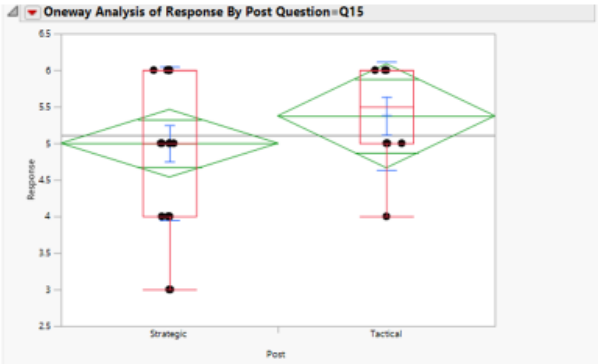
Tactical-Strategic

Assuming equal variances

| | | | |
|---|---|---|---|
| Difference | 1.00000 | t Ratio | 2.652741 |
| Std Err Dif | 0.37697 | DF | 25 |
| Upper CL Dif | 1.77638 | Prob > \|t\| | 0.0137* |
| Lower CL Dif | 0.22362 | Prob > t | 0.0068* |
| Confidence | 0.95 | Prob < t | 0.9932 |



# Q15 - I snack without being aware that I'm eating.

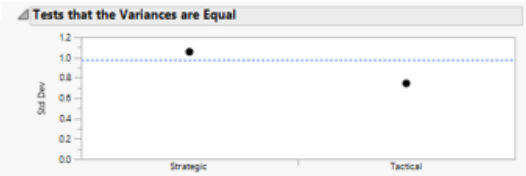



**Quantiles**

| Level | Minimum | 10% | 25% | Median | 75% | 90% | Maximum |
|---|---|---|---|---|---|---|---|
| Strategic | 3 | 3 | 4 | 5 | 6 | 6 | 6 |
| Tactical | 4 | 4 | 5 | 5.5 | 6 | 6 | 6 |

**Means and Std Deviations**

| Level | Number | Mean | Std Dev | Std Err Mean | Lower 95% | Upper 95% |
|---|---|---|---|---|---|---|
| Strategic | 19 | 5.00000 | 1.05409 | 0.24183 | 4.4919 | 5.5081 |
| Tactical | 8 | 5.37500 | 0.74402 | 0.26305 | 4.7530 | 5.9970 |




| Level | Count | Std Dev | MeanAbsDif to Mean | MeanAbsDif to Median |
|---|---|---|---|---|
| Strategic | 19 | 1.054093 | 0.8421053 | 0.8421053 |
| Tactical | 8 | 0.744024 | 0.6250000 | 0.6250000 |

| Test | F Ratio | DFNum | DFDen | p-Value |
|---|---|---|---|---|
| O'Brien[.5] | 1.4240 | 1 | 25 | 0.2439 |
| Brown-Forsythe | 0.8963 | 1 | 25 | 0.3528 |
| Levene | 0.9117 | 1 | 25 | 0.3488 |
| Bartlett | 1.0372 | 1 | . | 0.3085 |
| F Test 2-sided | 2.0072 | 18 | 7 | 0.3526 |

**t Test**

Tactical-Strategic

Assuming equal variances

| | | | |
|---|---|---|---|
| Difference | 0.3750 | t Ratio | 0.910478 |
| Std Err Dif | 0.4119 | DF | 25 |
| Upper CL Dif | 1.2233 | Prob > \|t\| | 0.3713 |
| Lower CL Dif | -0.4733 | Prob > t | 0.1856 |
| Confidence | 0.95 | Prob < t | 0.8144 |