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# Leading mindfully in dynamic times: Can a mindfulness-based leadership training and coaching program increase leadership effectiveness?

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# LEADING MINDFULLY IN DYNAMIC TIMES: CAN A MINDFULNESS-BASED LEADERSHIP TRAINING AND COACHING PROGRAM INCREASE LEADERSHIP EFFECTIVENESS?

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**Leading Mindfully in Dynamic Times:**
**Can a Mindfulness-based Leadership Training and Coaching Program Increase Leadership Effectiveness?**

by

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**Leading Mindfully in Dynamic Times:**

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## ABSTRACT

This research examined the influence of a Mindfulness-based Leadership Training and Coaching Program (MBP), in garnering three aspects of leadership effectiveness; extra employee effort, productive performance and followers' satisfaction with leadership.

We hypothesized that mindfulness-based leadership training and coaching program can influence leaders' frequency in adopting authentic, transformational and transactional leadership behaviors to enhance leadership effectiveness.

We tested these predictions separately on two control and intervention groups. Results suggested that the combined training and coaching mindfulness-based intervention program had predictive effects between the practice of mindful attunement of leaders' behaviors and enhancement in leadership effectiveness, even in a short span of time. This research study uncovered empirical evidence with practical implications for researchers and practitioners in the realm of leadership. Findings supported the notion that MBP training and coaching intervention could potentially lead to return on investment in leadership development initiatives.

Keywords: Leadership, Mindfulness, Self-Awareness, Self-Regulation, Behavior, People Analytics, Return on Investment, Training and Coaching.

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## DEDICATION

**To my Parents, Tiffany and Joel**

# CHAPTER ONE: INTRODUCTION

## 1.1 Effective Leadership in Dynamic Times

A dynamic 21st Century global economy will be challenging, competitive and complex. Business success amidst the onslaught of destabilizing forces, calls for leadership behaviors that are adaptive. Leaders are expected to navigate through uncertainty with resilience, manage interrelations in complex organization landscapes with sufficient collegiality to work collaboratively towards delivering ambitious goals. The present dissertation explored the possibility that mindfulness training enables leaders to perform more effectively in such an environment. It has been argued that a mindful leader manages disorder and responds to a range of challenging experiences with flexibility, reduced anxiety and enhanced vitality (Shapiro, 2006; Kabat-Zinn, 1990). However, little research has addressed the effect of mindfulness training for leaders. This research conceptualized a mindfulness-based leadership development pedagogy that integrates the practice of mindfulness as a means of transforming behaviors to improve leadership effectiveness. We explored empirical insights to address the research question on whether investment in mindfulness-based training and coaching leadership program can improve leaders' effectiveness in motivating employees' performance in a dynamic environment.

## 1.2 Relevance of Mindfulness on Leadership

Existing literature supports the existence of a relationship between practice of mindfulness and leadership effectiveness (Scouller, 2011; Carroll, 2007; Boyatzis et al.,2005). Mindfulness has been perceived to contribute towards versatility by honing leaders' cognitive alertness, sensory intelligence, collaborative skills and receptiveness to creative ideas (Bodner

& Langer, 2001; Lombard, 2007; Reb et al., 2014; Karssiens et al., 2014). In addition, practice of mindfulness has been linked to increase in employee work engagement (Leroy et al., 2013) and improved work performance (Dane et al., 2014; Glomb et al., 2011).

The potential positive impact that mindfulness brings to leader's effectiveness could perhaps explain for the recent surge in mindfulness-based programs (MBP) seen in formidable companies such as Apple, eBay, LinkedIn, Twitter, Goldman Sachs, Google, Facebook, Intel, Aetna and General Mills. However, there is a gap in the literature that examines the process by which these MBPs impact leadership effectiveness and employee performance (Good et al., 2016; Dane & Brummel, 2014; Reb et al., 2014). With the growing interest in mindfulness-based leadership training activities, it is essential to identify whether there is empirical evidence that supports the predicted correlations between the practice of mindfulness and leadership effectiveness. However, few research studies have examined the influence that mindfulness has on leadership behaviors to improve the leader's performance outcomes.

This research study aims to bridge this gap by empirically examining for an accountable way to determine the effectiveness of MBP as an intervention mechanism in bridging the gap between theory and practice of leadership development within the context of the workplace. An evaluation was conducted to assess whether there was a transference of knowledge and techniques relating to the application of mindfulness techniques, that impacted leadership effectiveness. With empirical findings verified from observations and statistical measurements, we aim to evaluate whether it is worthwhile for companies to invest time, budget, resource and effort in coaching their leaders through a MBP.

## 1.3 Aims of Research Study

The theoretical framework tested is discussed in detail below.

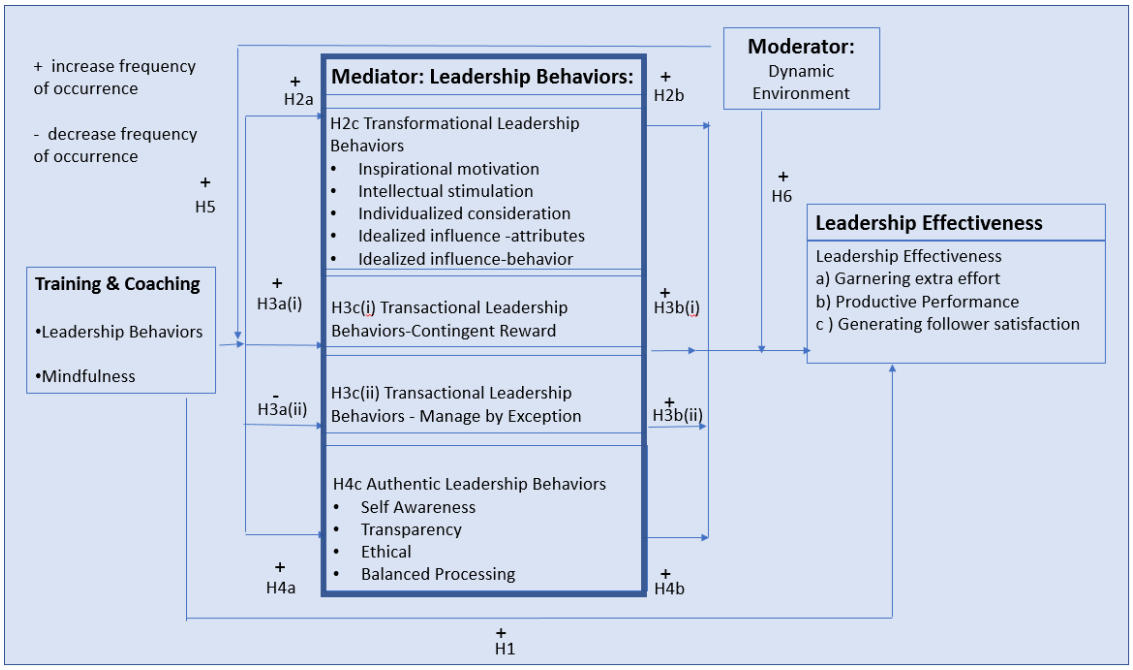



Figure 1: Framework on the Effects that Mindfulness Based Leadership Training and Coaching Intervention have on Leadership Effectiveness and Employee Satisfaction in a Dynamic Environment.

We aim to advance the understanding of the role of mindfulness in leadership development in three ways. First, we conducted an assessment to evaluate whether a complementary relationship existed between mindfulness-based training and leadership effectiveness. Second, an assessment was conducted to derive statistical findings on whether mindfulness-based leadership training and coaching increased frequency in the adoption of transformational, transactional or authentic leadership behaviors, that enhances leadership effectiveness. Third, the data was evaluated to determine whether the state of volatility in the environment strengthened or weakened the relationship between MBP intervention with leadership effectiveness. In the context of this research study, turbulence referred to market, technology and competitive forces (Jaworski and Kohli, 1993).

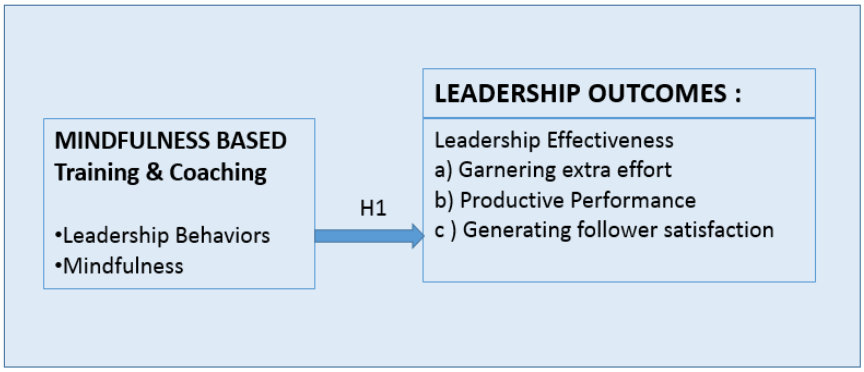



Figure 2: Causality of Training and Coaching as an Intervention Tool on Leadership Effectiveness

Our research postulates that mindfulness-based leadership training coupled with coaching facilitates leaders to enact behaviors that motivate followers. According to Porter & Lawler (1968), the outcome of motivation can be seen in the employee's spontaneous diligent behavior while conducting an activity because the individual found the activity to be interesting and fulfilling towards personal goals. Gagne & Deci (2005) added that the extra effort derives from satisfaction with leadership. However, they reminded that motivation is not natural and requires leaders to nurture employees towards building work competencies.

Hence, the theoretical framework of this research tested was designed to test whether the mindfulness-based leadership training and coaching program could enhance leaders' effectiveness in deriving followers' satisfaction with their leadership and motivate followers to put in extra effort to be productive, even in a dynamic environment.

Firstly, pre-and post-training findings were examined to identify if there was a complementary relationship between mindfulness with improved work performance and employee satisfaction with the leader. This empirical study investigated the perspectives at two-levels of the organization: the individual's performance as a leader, and coworkers' perceptions of what drives their effort, productivity and satisfaction with the leader.

Furthermore, the study sought to evaluate if an increase in Mindfulness measured with MAAS score could enhance leadership effectiveness, as measured by the Multi Factor

Leadership Questionnaire (MLQ) and Authentic Leadership Questionnaire (ALQ).

These predictions were tested in a field quasi-experiment under two conditions. The intervention group was trained in an intensive two days of training focusing on leadership and mindfulness; while a control group was separately trained on presentation skills for two days. Three one-hour coaching sessions were held over three months for both groups, these were conducted promptly upon completion of the training to facilitate the practice of learnings to the context of the leader's role at work.

Day (2000) highlighted that the use of intervention tools such as leadership development program and 360-degree feedbacks could help to shape leaders' behaviors and be the building blocks of leadership development. This research study explored the effectiveness of implementing a mindfulness-based leadership training using 360 leadership evaluation and coaching as intervention mechanisms in enabling leadership effectiveness. Using data collected from the completed 360-degree pre-and post-training questionnaires, we evaluated whether the MBP conducted had any causal impact on the leaders' malleable adoption of leadership behaviors in motivating the employees' performance outcome.

To ensure that this study stood up to the test of validity, an extensive search was conducted ostensibly for a reliable, consistent, well-researched and comprehensive leadership psychometric measurement (Theeboom et al., 2014; MacKie, 2007). Bass and Avolio's, (1990) full range leadership and Avolio et al.'s (2005) authentic leadership questionnaires were chosen for this research as they have been empirically tested, are reliable and they provided valid measures of leadership behaviors that can be gathered from a range of raters over time. In addition, the use of 360-degree feedback leadership assessment allowed for the assessment of leadership effectiveness beyond self-rating measures. The assessment brought specificity and validity to the test of MBP's impact on leadership effectiveness at the

workplace. These questionnaires comprised thirteen leadership behaviors and three resulting leadership outcomes elements; which offered this research a robust scientific measurement instrument to evaluate leaders' behaviors and leadership effectiveness.

**a) Mediating Effects:**

In addition, pre- and post-evaluations were conducted to analyze possible mediating effects illustrated in Figure 3 below.

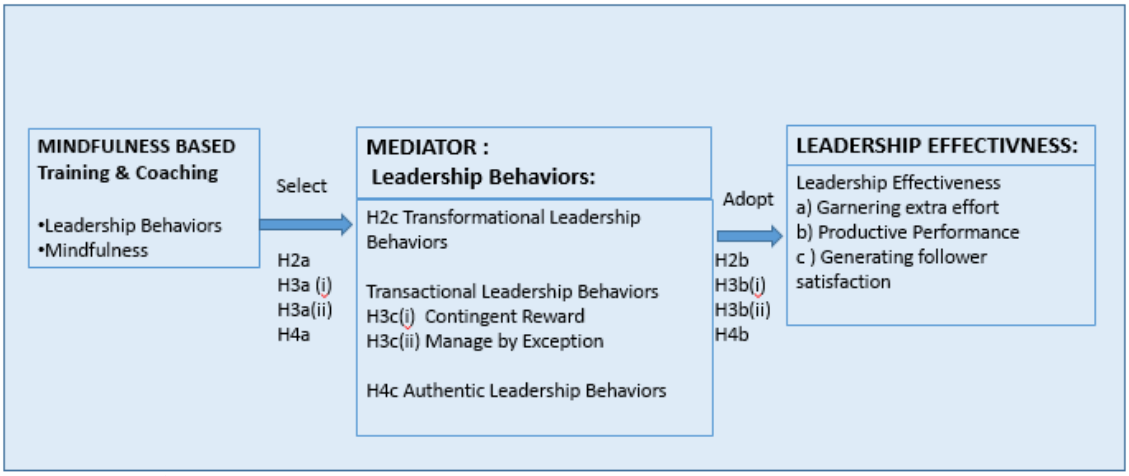


Figure 3: The Role of Leadership Behaviors as Mediator

Lowe et al. (1996) associated the strength of the relationship between leader and followers' performance with the supervisor's choice of leader behaviors adopted, to be the critical factor that fortifies the relationship that influences followers' performance. Reb et al. (2014) extended this understanding with the explanation that the quality of relationship between leader and employees determines the effectiveness of leadership. In addition, Reb et al. (2014) highlighted that the state of Mindfulness is an important driver towards enhancing the quality of the leader-employee relationship. By enabling the leader to be fully in the moment when interacting with the followers, it could result in employees putting in extra effort to be productive because he feels appreciated and respected.

This study posits that the combination of the practice of mindfulness and the adoption of relationship building leadership behaviors learned during training could consequently lead to improved leader effectiveness. This scientific empirical field study operationalized and tested the relationship between the following three variables:

- The leader's state of mindfulness measured with the MAAS questionnaire.
- The profile of leadership behaviors selected **(mediator)** by the leader to adopt when relating to employees; as measured with MLQ for Transformational and Transactional leadership behaviors and measured with ALQ for authentic leadership behaviors.
- The employees' rating of the leadership effectiveness, after witnessing the leader's choice of behaviors mindfully adopted. Leadership effectiveness are measured in MLQ by employees' ratings to the extent the leader can drive extra effort and productivity and satisfaction with the leader.

**b) Moderating Effects.**

This research posited further that the relationship between these three variables mentioned can be strong or weak depending on the environment volatility conditions.

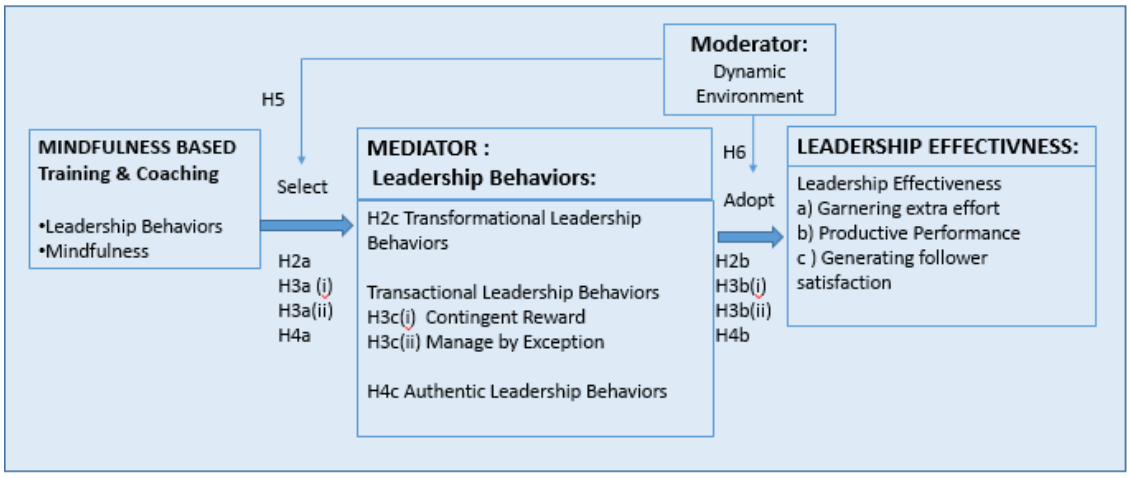


Figure 4: The Role of the Dynamic Environment as a Moderator

Weick et al. (2006) described mindfulness as being sensitive to others' perceptions and to be flexible in adopting behaviors to respond to diverse changing situations. This suggests that there is a positive relationship between the degree of volatility in the business environment with regards to both the degree of mindfulness exercised and resilience required in change management.

Chapter 1 of this document introduces the purpose statement, the relevance of the research question and the aims of this research study. Chapter 2 provides a literature review that explores the relationship between mindfulness in leaders' behaviors and leadership effectiveness. Chapter 3 details the research methods used. Chapter 4 reports on the statistical results, analysis and discussion. Finally, Chapter 5 identifies research limitations, discusses contributions derived from literature reviews and provides recommendations for future research.

# CHAPTER 2: LITERATURE REVIEW AND HYPOTHESES

Chapter 2 reviews the concept and impact of mindfulness on leadership behaviors associated with transformational, transactional and authentic leadership theories. Next, we examine research findings pertaining to the way mindfulness supports leadership effectiveness, even in a dynamic environment.

## 2.1 Conceptualizing Impact of Mindfulness Practice on Leadership Effectiveness

### 2.1.1 Concept of Mindfulness

The concept of mindfulness used in this study derives from several publications and summarized below.

| SOURCE | MINDFULNESS | SOURCE | MINDLESSNESS |
|---|---|---|---|
| Langer (1989) | Open and creative attention to one's environment; receptive to new information and aware of more than one perspective. | Trungpa (1973) | Mindlessness grows out of routines. Focusing single-mindedly on the outcome rather than the process. |
| Lombard (2007) | Associate mindfulness with sensory, cognitive and emotional intelligence.<br>Looks at each situation with a new outlook, inviting creativity and thought stimulation. | Charles et al, (1989) | Mindlessness to be functioning with automaticity and inflexibly. |
| Reb et al, (2014) | Better manage people, evoke collaborative behaviors, leading to the ability to facilitate efficient task performance and enhance staff satisfaction with leadership. | Weick et al, (1999) | Exercise fewer cognitive processes, ruminating about the past, worrying about the future and fixated on single perspective. |
| Hoy (2003) | Mindfulness continuously scrutinize and refine expectations based on identification of novel aspects , foresights and new experiences. | Brown & Ryan, (2003) | Not paying attention to, nor having awareness of, the activities one is engaged in or of the internal states and processes (e.g., emotions) one is experiencing. |

Figure 5: Definitions of Mindfulness and Mindlessness.

Embodying mindfulness in leadership development involves aligning presence with a sense of purpose that is anchored in values and beliefs. Leaders activate awareness in real time on their choice of behaviors and transform their behaviors in an authentic way to better align with interpersonal needs and intentions. This practice of mindfulness involves initiating a mental process of self-awareness to the present moment (Cairns-Lee, 2015) by applying consciousness to insights with an open mind. Current literature on mindfulness highlights that

mindful practice brings psychological direction of self-awareness to present state during decision making, problem solving and task performance; which could result in productive work outcomes (Reb et al., 2015, Bazerman & Watkins, 2008; Weick Sutcliffe, 2006). Leaders who are mindful allow room for the opening of the mind and heart to new perspectives, derive insights with balanced cognitive processing, encourage meaningful interrelationship exchanges and promotes well-being for oneself and colleagues, while staying connected to the environment . Being open minded helps the leader to digest information with an objective mind, to be intuitive and to develop behavioural agility in dynamic situations to optimize opportunities and face up to challenges (Adler, 2011; Karssiens et al., 2014).

### 2.1.2 Transformational Leadership

According to Bass & Avolio (1990), the behaviors of Transformational leaders comprise 5 dimensions: build trust, act with integrity, encourage others, encourage innovative thinking, coach and develop people.

i) Build Trust: Leaders build trust by stimulating ability and satisfaction within their team by prioritizing the needs of the group over individual interests.

ii) Act with integrity: Leaders reflect integrity and abide by work ethics and morals.

iii) Encourage Others: Leaders promote both individual and team work by establishing an environment of enthusiasm and optimistic foresight of an improved future for the individual as well as the organization.

iv) Encourage Innovative Thinking: Leaders inspire towards innovative thinking by being receptive to creative inputs offered by the individual and by encouraging team members to brainstorm for breakthrough ideas.

v) Coach and Develop People: Leaders mentor followers by taking into consideration

individual needs toward attainment of their goals and growth in the company.

Research studies have shown significant correlations between dimensions of transformational leadership behaviors with work performance outcomes (Hater & Bass, 1988; Koh et al., 1995). These findings suggest that leaders adopting transformational behaviors can instill confidence in followers to perform beyond expectations, intellectually stimulate innovative perspectives, and encourage followers to take on challenges as a team towards shared aspirations (Bass, 1990; Yuki et al., 2002; Van Knippenberg, De Cremer & Hogg, 2004). A transformational change-oriented leadership style brings cognizance to co-workers of what is important and help them to change how they see themselves, the prospects and challenges in the environment.

### 2.1.3 Transactional leadership

Howell & Avolio, (1993) described the dimensions of transactional leadership as contingent reward, active and passive management by exception.

- Contingent Rewards. Leaders elucidate expectations and rewards followers to show appreciation when targets are met. This leads to maximizing an employees' efforts and their reaching higher levels of performance. A transactional leader exerts influence through goal setting, clear deliverables and by the exchange of rewards contingent on achieving specific performance goals (Kuhnert & Lewis, 1987). Effective transactional leaders are quick to recognize and reward performers promptly (Aarons, 2006). However, followers of transactional leadership are not necessarily encouraged to be innovative or resilient; as they are extrinsically motivated with rewards based on predetermined performance criteria.
- Management By Exception

- Active Management by exception behavior. Leaders practicing active management by exception would set clear performance criteria and standards that would be used to monitor deviations. A leader would closely monitor the performance of followers anticipating potential issues and promptly take preventive steps or corrective measures at the earliest opportunity.
- Passive Management by exception Behavior. Leaders adopting passive management by exception would wait until the completion of the assignment, before evaluating the followers' performance. Determination of issues tend to be post-mortem and amends are made after mistakes have occurred (Afsar, 2017).
- This study does not predict a high adoption of active or passive management by exception behaviors by effective leaders. Leaders who manage by exception can choose to be active or passive in their transactions with their followers (Hater & Bass, 1988). The difference is primarily based on the timing of the leader's intervention.

According to Bass & Avolio, (1990) and Lowe et al., (1996), the use of contingent reward is the most effective of the transactional leadership dimensions. They explained that contingent reward is effective because clear expectations set would likely motivate employees. Bass & Avolio (1990) explained that both passive and active management were found to be ineffective leadership behaviors, as followers found it dissatisfying.

Bass & Avolio (1990) emphasized that although transactional and transformational leadership styles are different, they are not mutually exclusive. While transactional leadership emphasizes the use of exchange process of rewards and punishment in return for compliance; transformational leadership groom employees into leaders. Hence, Howell et al. (1993) and Reuvers et al. (2008) concluded that both transformational and transactional leadership styles could be combined and adapted to the situation to attain desired outcomes.

### 2.1.4 Authentic Leadership

Luthans & Avolio, (2005) defined authentic leadership as a process of drawing positive psychological capacities to be self-aware and self-regulated to enhance self-leadership development. Burns (1978) and Kernis (2003) added that self-awareness and being true to one's core values demonstrate being guided by moral ethics, instead of being influenced by external factors such as organization politics or market environment (Walumbwa et al., 2011). Instead, a dynamic environment calls for authentic leadership to establish confidence, direction, hope and resilience, by genuinely relating to employees and stakeholders with self-awareness.

Avolio and Gardner (2005) explain that authentic leadership style involves being transparent with intentions that are consciously aligned with personal values and actions taken to sustain business performance. Walumbwa et al. (2008) contributed to this body of research with the identification and empirical validation of four dimensions in authentic leadership; namely self-awareness, transparency, ethics and balanced processing.

According to Bass & Avolio (1990), Dirks & Ferrin (2002) and Ryan & Deci (2000), the consequence of adopting authentic leadership behaviors is a heightened level of followers' self-development and work efficacy, arising from increased levels of trust, engagement and satisfaction in the leader. Cooper et al., (2005) suggested cultivating leadership behaviors via management training programs together with individual coaching. However, there are few research studies that associate mindfulness-based leadership training and coaching programs with the development of leadership behaviors held in actual organization settings and with results measured over a period of time. This study aims to assess the impact that MBP has in development of mindfulness.

### 2.1.5 Dynamic Environment

In a dynamic uncertain environment with threats and opportunities being hurled at random, leaders must undergo a metamorphosis of behaviors to stay agile, innovative and relevant. This is in direct contrast to a stable environment where more emphasis is placed on self-interest (Beugre et al., 2006) and bureaucratic order which does not promote adaptability.

In the conduct of this research, the three dynamic environmental conditions proposed by Jaworski and Kohli (1993), namely market, technology and competition turbulence were applied when assessing the linkage between leadership behaviors and leadership outcomes. Market turbulence refers to the rate of change in the customers' preferences; technology turbulence refers to the rate of rapid technological changes; and competition turbulence occurs when customers have comparable alternative options that can satisfy their needs.

Leaders operating in more turbulent environments are likely to have to calibrate their leadership behaviors to be more versatile in response to new problems, demands and changes taking place. The innate human need searches for a practice that helps orientate responses to the challenging environment in a new way (Crane, 2017). In contrast, stable environment requires less modification of leadership behaviors, requires more of regular monitoring and day to day maintenance instead (Bass, 1990). Hence, this study predicts that the environment could have a moderating effect on the link between the mindfulness-based training and leadership outcomes. Mindfulness-based training is likely to be more strongly related to work performance and employee satisfaction with a leader in turbulent rather than stable times.

### 2.1.6 Leadership Effectiveness

According to Burns (1978), leaders should motivate followers to satisfy self-actualization needs rather than just basic needs (Maslow, 1954). Bass & Avolio (1990) agreed with Burns and added that a followers' extra effort demonstrates how much the leader motivated employees to perform beyond satisfying basic needs with contractual obligations. Bass (1998) explained that leaders could motivate work performance by being trained in areas of motivational behaviors, objective thinking, problem solving, vision articulation and employee empowerment.

According to Dane (2011), mindfulness hones managers' awareness of their behaviors when interacting, influencing and inspiring employees. In addition, better management of relationships, could help influence leadership outcomes measured in three dimensions advocated by Bass and Avolio (1990), such as higher levels of productive performance, generating extra effort from followers and employee satisfaction with leadership.

## 2.2 Mindfulness-Based Leadership Training and Coaching Program (MBP)

Research studies suggested that leadership trainings can enhance leader's engagement, empathy and compassion in a way that would nurture leadership and quality of relationships between the leader and the followers (Barling et al., 1996; Neck & Manz, 1996; Skarlicki & Latham, 1997). These intrapersonal competencies were associated with the mindful practice of self-awareness and self-regulation (McCauley, 2000; Neck & Manz, 1996; Stewart et al., 1996). Shapiro and Carlson (2006) added that mindfulness is a skill that each of us inherently possess and can be cultivated through training. Cooper et al. (2005) suggested cultivating leadership behaviors via management training programs together with individual coaching. However, there are scarce field research studies conducted that examine the influence of

mindfulness-based leadership training and coaching program on the development of leadership behaviors in actual organization settings.

According to McCauley et al. (1994) and Ohlott (2004), leadership development evolves with experiential learning after receiving formal training. This study adopted Ellis and Davidi's (2005) view that learning involves providing participants with support and feedback in a psychologically safe environment, to systematically analyse their behaviors with structured reflection; facilitated via coaching (Edmondson, 1999). In addition, Algera et al. (2011) advocated that leadership behaviors cannot be imitated or reproduced; instead, time is required to reflect explore, experiment and internalize attitudes and behaviors. Lowe et al. (1996) suggested that coaching given by the leader could guide and heighten co-workers and followers' awareness about their choice of responses to people, issues and work. Thus, encouraging collaboration, resilience and resourcefulness towards finding opportunities and effective alternative solutions to challenges encountered. This research study provided three one-hour coaching sessions that served as a platform for leaders to reflect and reframe old habitual ways of thinking and reacting. According to Cooper et al. (2005), coaching promotes positive leadership behavioral changes by facilitating the integration of learning with mindful experimentation, to gain personal insights.

In support of such training of mindfulness, other articles echoed benefits of coupling mindfulness training and coaching with leadership effectiveness. Lombard (2007) advocated that inculcating the capability of being in the present would activate the leader's sensory intelligence, instead of being swayed by expectations, habit or fears (Goldman Schuyler, 2010). According to Pescosolido (2002), supervisors who apply a mindful approach, would be more alert to their followers' emotional needs, and hence be able to model emotions to

accentuate the meaning and communicate the intent of the organization's vision and goal clearly to drive followers' efforts.

Literature often associates mindfulness with enhanced resilience and interpersonal skills; this explains the prominent rise of mindful practices in established companies such as Google, Facebook, Intel, and General Mills Schaufenbuel (2015). These companies advocated, embraced and adopted the concept of mindfulness to improve workforce wellbeing and work performance. The literature on the practice of mindfulness listed resulting tangible benefits such as improved mental focus, sharpened intuition, heightened intrinsic motivation, alleviation of stress and diminished discomfort (Tan, 2012; West et al., 2014; Wolever et al., 2012).

These modern-day firms have woken to the need and potential of mindfulness training. For instance, Facebook and Google encouraged employees to attend events such as Wisdom 2.0 to learn about the latest mindfulness techniques to cope with stress. Moreover, Chade Meng Tan, an engineer from Google, runs a well-attended internal program "search inside yourself" which attempts to enlighten minds, encourage open mindedness and derive joy at the workplace. Another practitioner, Van Driel from Intel, started Awake@Intel to help employees develop creative thinking, decrease stress, and derive wellbeing. Goldman Sachs' promoted the use of headspace app for simple convenient mindfulness practices.

Research studies on mindfulness emphasized that the adoption of a mindful approach enhances the exercise of higher emotional intelligence and self-regulation when relating to each other emotionally (Reb et al., 2014). Shapiro et al. (2006) and Bishop et al. (2004) explained that the practice of mindfulness enables an individual to be engaged in the moment, staying curious and receptive for room to process positive and negative information about self and others without being biased. Wenk-sormaz (2005) suggested that being mindful is to

consciously align one's behaviour with own inner values and psychological needs satisfaction of others. Bishop et al. (2004) and Ryan and Deci (2004) added that satisfied psychological need would strengthen self-motivation and the individual's will to succeed.

Consistent with the researched literature, this study acknowledged the important role of mindfulness as a mechanism to sharpen leader's self-awareness with the calmness of the mind, regulation of emotions, and balancing of the cognitive processing system. This allows for space and shift towards witnessing as a third party of one's internal experiences with openness and curiosity rather than rigidity. Being open minded to followers' perspectives and cognizant of their needs may enable leaders to attune their behaviors to motivate employees effectively towards shared objectives.

The use of mindfulness-based leadership training as an intervention tool facilitated impartation of mindfulness techniques to evoke behaviors that contributed to the follower/leader relationship. This was derived from the exercise of compassion, fostering emotional regulation, and promoted better acceptance of others' perspectives and increased the attitude of collaborative rather than adversarial effort. (Baer, Smith & Allen, 2004; Brown & Ryan, 2003; Boyatzis et al., 2005 and Driskell et al., 1994). In addition, emotional regulation optimised well-being (Brown & Ryan, 2003, 2004a; Deci & Ryan, 1980), increased association with self-congruence (Brown & Ryan, 2003; Thrash & Elliot, 2002) and reduced defensive reactions when placed under threat (Brown, Ryan & Creswell, 2007).

The use of mainstream leadership development program with 360-degree feedbacks and coaching aimed to help shape leaders' behaviors and served as building blocks to leadership development. This research study explored the influence that mindfulness had on the mainstream leadership development program in increasing the frequency of leaders' adoption of leadership behaviors to augment leadership effectiveness.

To identify the core drivers for change and to facilitate measurement of behavioral leadership change across T0 and T2 for the respective intervention and control groups, a consistent reporting measurement instrument was required. To evaluate comparisons across the respective MBP vis a vis presentation program in this research study, a reliable, consistent, well-researched, and comprehensive leadership psychometric measurement was required to ensure consistency in measuring and reporting the outcomes, to ensure their validity (Grant et al., 2010; Theeboom et al., 2014; MacKie, 2007). This research adopted Bass and Avolio's, (1990) full range leadership model and Avolio et al.'s (2005) authentic leadership questionnaires, as they have been empirically tested, are reliable and they provide valid measures of leadership behaviors that can be gathered from a range of raters over time. As mindfulness is measurable with the MAAS questionnaire, mindfulness would be used as a manipulation check to predict leaders' efficacy in both control and intervention groups. The use of 360-degree feedback leadership assessment allowed for the assessment of leadership effectiveness beyond self-rating measures; thus, bringing specificity and validity to the test of MBP's impact on leadership effectiveness at the workplace. These questionnaires comprised thirteen leadership behaviors and three resulting leadership outcomes elements listed below and offered this research a robust scientific measurement instrument that measured leaders' behaviors and leadership effectiveness.

Taking into consideration all the above-mentioned benefits pertaining to mindfulness-based training mentioned by numerous literatures studied and heeding to Bass's (1990) suggestion that leadership behaviors can be learnt, this study hypothesized that leaders' effectiveness is higher under the mindfulness-based leadership training and coaching condition than in the control group.

**H1: Mindfulness-Based Leadership Training and Coaching increases leadership effectiveness on the dimensions of employee productivity at work, employee efforts, and employee satisfaction with the leader.**

## 2.3 Evaluation of Leadership Behaviors

Research studies by Judge & Piccolo, (2004) and Reb (2014) identified leaders' behaviors as important predictors of leadership effectiveness and workplace performance. This current research study explored whether the adoption of a rigorous pedagogical approach that applied mindfulness-based leadership training and coaching in organizations can initiate mindful awareness to leadership behaviors and attune them to motivate work performance. This research study referred to leadership behaviors defined in Bass & Avolio's (1990) comprehensive full range of transformational, transactional and authentic leadership behaviors. In addition, Avolio et al.'s (1993; 2005) introduction of the Multifactor leadership questionnaire (MLQ) and Authentic leadership questionnaire (ALQ) were chosen as the instruments to measure the leaders' behavioral changes influenced by the practice of mindfulness before and after MBP.

I will briefly explain the reasons for not selecting other leadership theories. Trait theories sought to identify leaders' personality pre-existing traits such as height, physical characteristics and cognitive abilities. This theoretical framework was not suitable for this research study that required empirical measurement of the change in leadership behaviors resulting from the influence of practicing mindfulness.

Contingency theories did advocate the adoption of flexible leadership traits and behaviors in relation to the situation. However, contingency theories lacked the

development-oriented framework and measurement required to track the influence mindfulness has on the changes in leaders' behaviors.

Patterson, (2003) defined servant leadership as leaders who serve with moral excellence, placed emphasis on followers' well-being and regarded organizational concerns as peripheral. She identified the seven characteristics of servant leaders as love, humility, altruistic, visionary, trusting, serving and empowering. This theory was not considered suitable as there was scarce empirical evidence and lack of well-researched instrument available to measure these concepts with.

After thorough literature review, the Bass and Avolio (1990) full range of transformational, transactional and Avolio et al. (2008) authentic leadership behaviors were selected for this research study as there was empirical evidence resulting from rigorous meta-analysis and field studies, showing strong support for the validity of these leadership behaviors across many situations (Judge & Piccolo, 2004; Dvir 2002).

Lowe et al. (1996) highlighted that leaders exerted their influence on employees through the effective use of leadership behaviors. We extended this theory by evaluating the role of MBP in enhancing leaders' awareness of their behaviors when engaging with employees to motivate followers' to exert extra effort and produce better performance. Research studies (Brown & Ryan, 2003) emphasized the importance of self-regulation, emotional intelligence and empathy in relating to others. Colquitt et al. (2001) explained that by associating mindfulness with leadership behaviors, the quality of interpersonal relationships between the supervisor and followers would improve in engagement and empathy; resulting in diligent job commitment and employee satisfaction with leadership.

Transformational, transactional (Bass, 1985) and authentic leadership (Avolio et al., 2005) behaviors were adopted in this research study. Transformational - transactional leadership theory dominated most of the current research literature on leadership. Bass, (1990) theory of transformational leadership was premised on Burn's (1978) dual complementary classifications of transformation and transactional leadership. Bass extended Burns theory by breaking transactional leadership down further into two elements: contingent rewards and management by exception either passive or active (Hater & Bass, 1988).


Figure 6: Summary of the Range of Leaders' Behaviors

It is premised on Bass & Avolio's (1990) Multifactor Leadership Questionnaire (MLQ) form 5X and Avolio, Gardner and Walumbwa's (2008) Authentic Leadership Questionnaire version 1.

In addition, Burns (1978) and Avolio & Gardner, (2005) highlighted that self-awareness and being true to one's core values are fundamental characteristics of an authentic leader and that authentic leadership is the fundamental root construct for transformational leadership. These leadership behaviours will now be elaborated in the following sections.

## 2.4 Mindfulness in Transformational Leadership Behaviors

Numerous research literature has empirically evidenced that transformational leadership was positively related to leadership effectiveness (Judge and Piccolo, 2004; Lowe et al., 1996). However very few research studies associate the **application of mindfulness** in the process of adopting leadership behaviors. Our research study hypothesized the following:

**H2a: Mindfulness Based Training and Coaching Program increases transformational leadership behaviors of idealized influence, intellectual stimulation, inspirational motivation, individualized consideration, and idealized influence-behaviors.**

Leadership behaviors are informative determinants of their effectiveness as transformational leaders (Judge and Piccolo, 2004) and can be learned (Anderson, 1997). This research study posited that the MBP increases leader's adoption of transformational leadership behaviors mindfully, to derive leadership effectiveness and employee satisfaction. Such that:

**H2b: Transformational leadership behaviors are positively related to leadership effectiveness.**

**H2c: Transformational leadership behaviors mediate the positive effect of Mindfulness Based Training and Coaching Program on leadership effectiveness.**

The following paragraphs illustrate references to a review of the research conducted on the role of mindfulness and examine the potential effects that practice of mindfulness could have in enhancing the five elements of transformational leadership behaviors which leads to effective leadership outcomes.

### 2.4.1 Idealized Influence through Integrity Attributes

Burns (1978) and Bass et al. (1999) explained that the individual leader's moral development is necessary before the leader can establish collective moral value congruence in the team. Schuyler (2010) defined leadership integrity as the ability to firmly withstand external pressure; and linked integrity to the practice of self-awareness that prompts actions with integrity when put under pressure.

A transformational leader instils purpose and inspires collective action, by complementing the use of vision with values to formulate a goal; as values give meaning to the vision. On 28 August 1963, Martin Luther King Jr., a renowned civil rights activist moved millions of people with his "I have a dream" speech (Mount, 2010). His speech illustrated how he tied values of anti-segregation with the vision of achieving freedom for everyone.

Coupled with "transformative leadership learning", leaders can be coached to be self-examining of their own beliefs, thoughts and ethics to drive and lead followers' behavior effectively.

Carton et al. (2014) explained the importance of not just understanding the ultimate goal, but that it is of pivotal importance the collective group of employees have the same understanding of the ultimate goal to attain a shared sense of purpose. Achieving this shared vision facilitates better coordination between interdependent organizational functions as they work together to fulfil customer requirements (Cyert & March, 1963).

### 2.4.2 Intellectual Stimulation

Interaction of conscious and unconscious processes brings insights into issues and creates novel ideas (Schooler et al., 1993), by training the mind to foster exploration and discovery in job related tasks. Bass et al. (1990) explained that transformational leaders who could stimulate intellectually, would encourage followers to view problems as a mystery to be resolved with rational innovative solutions. This process of learning can either be mindful or routine (Levinthal and Rerup, 2006).

This MBP leadership training is intended to hone mindful processing through dialogic practices and analogical reasoning via case studies. Learning was derived vicariously through experience and development of cognitive ability to increase mindfulness.

To prevent the mind from wandering off from work related tasks, leaders played a role in regulating and engaging employees to keep job tasks stimulating and by facilitating followers to identify with the entity's goals to deliver effective performance outcomes (Elsbach & Hargadon, 2006; Schooler et al., 2011).

### 2.4.3 Inspirational Motivation

Tomasello et al., (2005) emphasized the importance of a leader's core function to motivate group members by identifying with their mental and well-being. By developing their level of knowledge and understanding followers' feelings during coaching sessions, the leader is better able to bridge performance gaps.

Burns (1978) explained that transformational leaders could motivate followers by focusing on their self-actualization needs rather than their basic needs (Maslow, 1954). The focus is to motivate followers to think independently, develop novel ideas, question the norm, self-manage, self-regulate and be self-driven. This study is in agreement with Burns (1978); that the leader is responsible for motivating performance, by providing guidance and coaching to followers. Mindfulness-based coaching could potentially augment work performance, as the leader was fully focused on the present-moment phenomena (Dane, 2011) of being in the moment with the coachee, to make followers feel appreciated, involved and motivated to achieve personal development and pursue self-actualisation.

### 2.4.4 Individual Consideration

According to Ashkanasy (2002), individuals practicing mindfulness exercise a high level of emotional intelligence that heighten self-awareness of their own emotions and those around them. By engaging employees through a show of respect and empathising with their

individual needs, emotions and perspectives, leaders may enhance their capacity to provide employees with a high degree of individualised consideration. Mindful leaders exercise awareness to listen and connect with the individual (Eisenberg et al., 1996); this form of interaction facilitates the leader to have a greater tolerance for uncertainty, better negotiate for results and facilitate better coordination of both individual and group behaviors.

### 2.4.5 Building Trusting Relationships

Transformational leaders build trusting relationships. (Dirks & Ferrin, 2002). Trust involves taking risks and being vulnerable to another, by having confidence that the other will not act in detrimental ways against the trusting person (Hoy et al., 2003). By articulating the reasons for their thoughts, actions and plans towards achieving shared goals, leaders build trusting relationships with employees. Trust is the foundation upon which leaders can stimulate followers' thoughts, encourage problem-solving, and engage them to amend their behaviors to meet expectations (De Dreu et al., 2006).

According to Hoy (2003) and Langer et al. (1989), mindfulness involves refinement of assumptions based on new experiences, appreciation of new information and identification of novel ideas to improve foresight and functioning. To foster mindfulness in the team, leaders need to create a trusting environment where followers feel safe to experiment, be playful with creative ideas and be resourceful in search of innovative solutions.

## 2.5 Mindfulness in Transactional Leadership Behaviors

According to Sethi (2009), practice of mindfulness could enhance the interrelations between behaviors, cognition, sensory and emotional intelligence. Constant adjustments to behaviors and actions are inevitable in a dynamic environment. Bass & Avolio (1990) added

that the best leaders manifest and adjust between transformational and transactional leadership behaviors. They explained further that transformational leadership builds on transactional leadership to bring augmented results in followers' performance. Howell and Avolio (1993) agreed that transformational leadership complements transactional leadership; and leaders often supplement transactional leadership with transformational leadership.

While transformational leaders offer purpose that transcends short term goals by focusing on higher level intrinsic self-actualization needs; transactional leaders offer contingent rewards in exchange for efforts Conger & Kanungo, (1998). Often, transactional motivation is extrinsic in monetary terms, offering promotion or perks for achieving set objectives and exhibiting desired behaviors; while punishing for mistakes or deviation committed (Howell & Avolio 1993). It is thus hypothesised that:

H3a(i): Mindfulness Based Training and Coaching Program increases transactional leadership contingent rewards behaviors.

H3a(ii): Mindfulness Based Training and Coaching Program decreases transactional leadership management by exception behaviors.

Numerous research studies have explained that transactional leadership behaviors use contingent rewards to motivate followers. Podsakoff et al., (2006) noted that transactional motivation tends towards employee's self-interest, rather than achieving teamwork or team goals.

In line with Wikipedia's explanation in the popular adage "if it ain't broke don't fix it", transactional leaders who adopt a pragmatic "manage by exception" approach, prefer to work with the existing environment to solve problems in a practical manner, after realistically considering constraints and opportunities. Transactional leaders manage followers by

exception either actively or passively; the difference is primarily on the timing of leader's intervention (Hater & Bass, 1988).

Bass & Steidlemeier (1999) highlighted that transformational leadership does not substitute transactional leadership; and Bass et al. (1990) suggested that transactional leadership is the basis for transformational leadership; without which, there would be no transformational effects. Thus, the current study hypothesized that the leaders' mindful adoption of transactional Leadership contingent reward behaviors mediates the effect that mindfulness-based training and coaching program has on work performance. Such that:

H3b(i) Transactional contingent reward leadership behaviors are positively related to leadership effectiveness.

H3c(i) Transactional contingent reward behaviors mediate the positive effect of Mindfulness Based Training and Coaching Program on leadership effectiveness.

Efficacious leaders adjust their behaviors and actions to the environment in real time through mindful calibration of their leadership behaviors. According to Bass & Yammarino (1991), management by exception often generate negative impact especially if the leader passively waits for problems instead of anticipating and resolving problems at the outset. Hence leader may choose to increase adoption of transactional leadership contingent reward behaviors and reduce engagement of management by exception behaviors to increase leadership effectiveness. We posit that:

H3b(ii) Transactional manage by exception leadership behaviors are negatively related to leadership effectiveness.

H3c(ii) Transactional manage by exception behaviors mediate the positive effect of Mindfulness Based Training and Coaching Program on leadership effectiveness.

## 2.6 Mindfulness in Authentic Leadership Behaviors

Leaders are pressured to deliver results at all costs, which led to the rapid rise in corporate crimes and scandals such as Enron, Tyco, Madoff Ponzi schemes and Barclay bank Libor manipulations to name a few. Stakeholders such as investors, authorities, customers and employees have low tolerance thresholds for deviation between leaders espoused principles and their actual conduct (Walumbwa et al., 2008, Baron and Parent, 2015). Heidegger (1962) advocated the concept of balancing individual will and collective expectations. The pricy repercussions of such misbehaviors by leaders emphasized the importance of internalization of authentic attitudes and leadership behaviors to exercise cognitive self-awareness and self-regulation in achieving sustainable business performance.

According to Avolio and Gardner (2005), an authentic leader well anchored in ethics, beliefs and values would be less inclined to fall prey to greed and white collared crimes. Walumbwa et al., (2008) explained that authenticity involves a process of exercising objectivity when deliberating information or matters of ethics with balanced processing and transparency. Balanced processing implies the ability to be non-judgmental, open to processing all information objectively and accepting leader's own as well others' strengths and weaknesses. Transparency requires preserving a relationship with coworkers with a demonstration of leader's values, ethics, identities and beliefs, that is based on trust and sharing of information (Avolio & Gardner, 2005).

Bass et al. (1999) and Brown et al. (2006) added that authentic leaders instill confidence, hope, optimism and resilience in catastrophic event, by fostering self-awareness and identified the key components of self-awareness as values, identity, emotions and motives. Numerous research studies identified values as a personal virtue, moral wisdom, empathy, ethics, integrity and openness. Leader's self-identity relates to being a positive role model to followers; while

collective-identity relates to the way a leader identifies with their co-workers. Ladkin and Taylor (2010) explained that the leader's expression of emotions demonstrate authenticity. Austin & Vancouver (1996) defined authentic motives and goals as 'internal representations of desired states' and observed that authentic leaders are motivated by goals that involve others.

According to Shapiro et al. (2006), mindfulness is about being present in the moment and encourages self-regulation in putting a distance to allow witnessing of thoughts, emotions and body sensations with openness and curiosity. It provides for the opportunity to experience changing system of concepts, images, sensations and beliefs. Hence an authentic leader put in a moment of ethical choice, would be given the opportunity to exercise self-regulation and consciously choose to align their behaviors with inner values and needs, with consideration to others (Wenk-sormaz, 2005). Gardner et al. (2005) explained that ***self-regulation*** involves internalized regulation and reminded leaders to adopt self-regulation of their emotional perceptions of the situation. Internalized regulation refers to choosing of behaviors that are important to oneself and still be ethical.

Brown & Ryan (2004) explained that a self-regulated leader acts in a mindful way that 'seeks not self-esteem, but rather, right action, all things considered'. From the self-regulated leader's perspective, the opportunity arises for more intentional, proactive and purposeful action that is aligned with his or her authentic self. Although authentic leadership and mindfulness are closely related concepts, Lakey et al. (2008) highlighted that authenticity and mindfulness are two different constructs. Authenticity relates to awareness of personal aspects such as values, beliefs and emotions; whilst mindfulness refers to experiencing reality. Mindfulness refers to being in the present moment without judgement by exercising self-regulation (Fry & Kriger, 2009).

This study perceived a close association between authenticity and practice of mindfulness. As mindfulness generates an awareness of the present moment and exercise regulation to achieve openness to positive and negative aspects of oneself; it could prompt flexible responses to dynamic situations instead of habitual automatic responses (Bishop et al., 2004; Ryan & Deci, 2004).

The current study posited that the leader's experiences in self-awareness and self-regulation would be honed through the practice of mindfulness. This would enable the leader to be cognizant of which personality traits to regulate, adopt and adapt to better develop and influence others in the organization landscape (Goffee & Jones, 2006).

The practice of mindfulness provided opportunities to enhance self-awareness and self-regulation; thus, encouraging authentic leaders to be true to their self-concordant goals and core values; resulting in alignment with followers in an authentic way of being. This study evaluated whether authentic leaders practicing mindfulness could potentially take leadership to a different dimension beyond mere exhibition of behaviors. The coaching sessions promoted the practice of mindfulness by encouraging self-awareness of present experience, the practice of objective reflection and modulation in the moment of attitudes and behaviors that the leader wanted to change.

This research suggested that authentic leaders possess a synergistic pattern of behaviors such as internalized moral perspective, balanced processing, relational transparency and self-awareness. As these characteristics are closely associated to the concept of mindfulness, we positioned that:

H4a: Mindfulness Based Training and Coaching Program increases authentic leadership behaviors.

Kernis (2003) explained that authentic leaders exhibit high levels of self-clarity and self-certainty that create a trusting environment to cultivate positive psychological well-being, self-esteem, and positivity in followers, that would facilitate sustainable employee work performance. Authentic leaders demonstrate behaviors that are empathetic and genuine. They engage colleagues with openness in information sharing, process insights with a balanced view, and elicit views from others before making decisions. This results in leaving space for intellectual stimulation with followers in an inclusive way.

Campbell et al. (1996) added that the choice of defensive style in stressful situations causes significant emotional biases to perceptions of oneself and others. In contrast to a defensive mechanism, the practice of mindfulness enables a coping mechanism that involves exercising voluntary cognitive efforts to gather information, note for areas of contention and exercise balanced discretion in response to the information. Authentic leaders aspire to free themselves from the need to adopt ego defensive mechanisms that will distort understanding of information relating to both internal and external reality.

As self-awareness relates positively to self-esteem and leadership effectiveness, this study hypothesized that the mindfulness-based leadership training and coaching could encourage leaders to increase frequency of authentic leadership behaviors to enhance employees' work performance and satisfaction with their leadership. Such that:

H4b: Authentic leadership behaviours are positively related to leadership effectiveness.

H4c: Authentic leadership behaviors mediate the positive effect of Mindfulness Based Training and Coaching Program on leadership effectiveness.

## 2.7 Mindfulness in Dynamic Environment

The definition of a dynamic environment in this research was based on Jaworski and Kohli's (1993) three environment dynamic conditions which are market turbulence, competitive intensity and technological turbulence. This study contended that the volatility in external environment could put a strain on the entity which would:

a) increase the need for frequent adaptation of leadership behaviors and self-regulation in response to the situational requirements; and

b) increase the strength of reliance on the leader to motivate followers to produce performance outcome.

In a dynamic context, leaders are expected to navigate through turbulent environment by being psychologically agile and resourceful. Dane, 2011 and Scharmer, 2009 suggested that 21st century leaders should develop awareness of self, others and the environment; to make effective decisions under conditions of uncertainty where many factors are outside of control. By being present and adopting a beginner's mind, leaders can shift oneself from a state of being involved to a state of being a witness, to engage effectively with complexities and conflicts (Kabat-Zinn, 1982). Thus, facilitating the leader to cut through the clutter of distractions and to embrace a more realistic understanding of the situation. Schuyler (2010) explained that the shift of states adjusts leaders' thinking to recognize the uncertainty of the business world when making decisions. In a dynamic environment, actions taken, and performance outcomes are not necessarily correlated. Leaders has an important role in the process of mindfully aligning actions and motivating employee behaviors toward achieving performance outcomes. We posited in our study that in a dynamic environment, leaders are more attuned of the need to improvise their leadership behaviors to motivate followers towards task performance. Hence the testable hypotheses are:

**H5: The greater the volatility of the market environment, the stronger the relationship is between mindfulness and improvisation of leadership behaviors adopted by the leader.**

Brown & Ryan (2003) advocate the practice of mindfulness, which involves both the external (what happens to us) and internal phenomena (what happens in us). They explained that practice of mindfulness enables a wide breadth of attention when handling uncertain volatile external environment. This practice could help leaders to attune and improvise their leadership behaviors to motivate followers towards task performance.

Weick & Sutcliffe (2006) suggested that mindfulness enables employees to perform reliably and Dane (2011) added that performance could sustain even in a high velocity environment, resulting from self-regulatory behaviors (Glomb et al., 2011). Mindfulness can also help leaders to adjust to the wide range of environmental stimuli and focus on managing followers to complete critical work tasks.

Pawar and Eastman (1997) highlighted the following three aspects that determine the leader's effectiveness in dynamic conditions:

i) followers' receptivity to changing requirements;

ii) the extent of correspondence between transformation required and the actual transformation leadership enacted; and

iii) leader's self-awareness and self-regulation capabilities demonstrated in the transformation process.

In times of uncertainty, mindfulness is the psychological resource that heightens leaders' awareness to exercise self-regulation and adoption of leadership behaviors that motivate followers to willingly contribute extra effort in dynamic times. The leaders' ability to calibrate their thinking and adapt their leadership behaviours through thoughtful consideration of their employees would enhance the chance of achieving performance

outcomes. This research study evaluated the effects of the external business environment on the impact that mindfulness has on leadership effectiveness and work performance.

This study posited that in a dynamic environment, leaders are more attuned to the need to improvise their leadership behaviors to motivate followers towards task performance. Hence the testable hypothesis is:

**H6: The greater the volatility in the market environment, the stronger the impact of mindful adoption of leadership behaviors has on leadership effectiveness.**

## 2.8 Impact of Mindfulness Based Training and Coaching Program on Leader's Behaviors and Leadership Effectiveness

Extensive literature review showed a few research studies that leadership competencies can be nurtured A study research in a military setting conducted by Dvir et al. (2002) illustrated how leadership behaviors and work performance were enhanced through training. The ability of a leader to garner employee performance beyond average expectations was referred to as the "augmentation hypothesis" by Waldman, Bass & Yammarino (1990). In addition, empirical evidence from experiments done in a bank with 1-day training and 360 questionnaire by Kelloway & Barling (1996) showed positive effects derived from leadership training interventions using a field quasi-experimental design.

According to Derue (2011) leadership behaviors can be observed post-mortem after the leadership behavior act is enacted; hence can be measured and be predictable of leader's efficacy. Derue's (2011) research supported this theory with empirical evidence showing that while total leader traits and behaviors could explain 58% of the variance in the leader's effectiveness. Leader's behavior is more predictive towards leader's efficacy than traits by explaining 74.5% of the total explained Leader's effectiveness variance $R^2$.

## 2.9 Conclusion

The literature review in Chapter 2 explored the concept of mindfulness, with the relationship between mindfulness and the development of transformational, transactional and authentic leadership theories. A discussion was made on current literature and explored references to the way mindfulness could be nurtured to potentially influence leadership behaviors that support leadership effectiveness, even in a dynamic environment. Despite the growing interest in mindfulness by individuals and organizations, there is a shortage of empirical research that examines the possibility of bridging the science-practice gap of nurturing leadership development via the provision of a mindfulness-based program involving training and coaching. This MBP intervention mechanism facilitated psychological support for the functioning of the human mind and body system to skillfully manage distress in challenging dynamic work environment.

The hypotheses in our research study extended theoretical literature studies with empirical field quasi-experiment in organization settings, that tested the hypotheses developed in this chapter. The objective was to explore the statistical findings to reveal the effects that mindfulness-based training with coaching had in changing leadership behaviors, to augment leadership effectiveness in real business settings.

Chapter 3 described the research design adopted, data collection methodology, demographics of the sample participant data collected, and the measures used to analyze findings.

# CHAPTER 3: EMPIRICAL RESEARCH METHODS

Chapter 3 discusses the research design and methodology used in depth for this field based quasi-experimental study. Details relating to the sample selection process, leader participants and other rater demographics, data collection instruments, questionnaires and processes were provided. Discussion is offered on the extent to which MBP intervention mechanism complied with the fidelity criteria listed by Onken et al.'s (2014) Six Stage model. In addition, the robustness of the elements of MBP curriculum were analyzed with reference to Crane et al.'s (2017) suggested framework of essential warp and flexible weft ingredients of Mindfulness-Based Programs. This chapter finished with an elaboration on the types and details of measurement instruments chosen to collect data for this research study.

## 3.1 Research Design

To ensure soundness and validity of the research design and in the implementation of the MBP intervention in this experiment, we adopted Stone-Romero's (2011) structured research design road map depicted in figure 7. We will address each point in turn below:

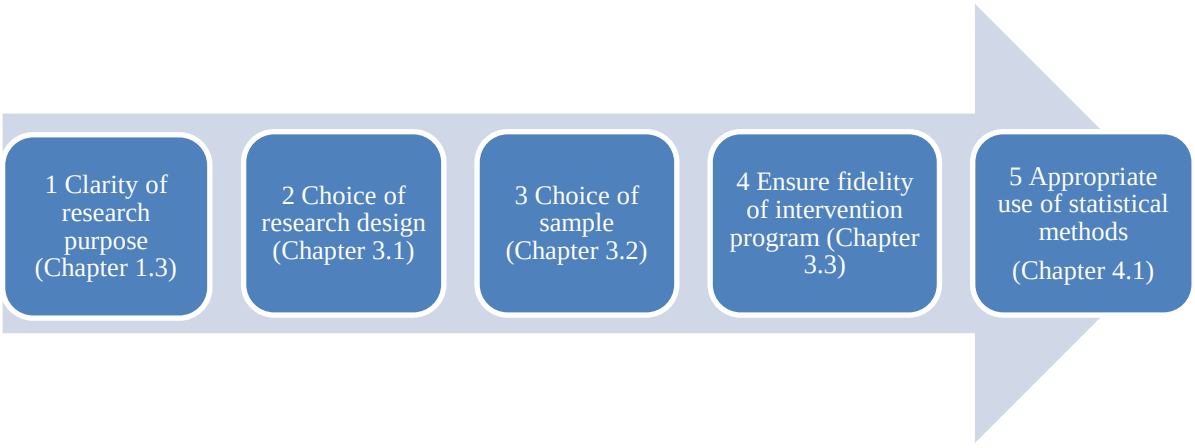



Figure 7: Stone-Romero (2011) Research Design Roadmap

3.1.1 Clarity of research purpose: The aim of the research as stated in Chapter 1 was to measure whether MBP had any impact in influencing leaders' behaviors toward leadership effectiveness.

3.1.2 Choice of research study design: This research conducted a field quasi-experiment research design that evaluated the causal influence of mindfulness-based training and coaching program had in honing leaders' behaviors and leadership effectiveness.

3.1.3 Choice of sample: Next section 3.2 elaborated the non-random selection process of 60 leaders from varied organizations who participated in either the intervention or control group. Insights to the demographics of leader participants in the two groups and profile of the other raters were provided. Intervention group was trained in a two-day mindfulness-based leadership program; while the control group was separately trained on presentation skills over two days. Three once a month hourly coaching session for participants in both groups started after training was completed.

3.1.4 Fidelity Test on intervention program. Section 3.3 addressed tests conducted to ensure fidelity of MBP training and coaching as an intervention mechanism. Details were provided on the factors considered, that ensured MBP adhered to Onken et al.'s (2014) Six Stage Fidelity Test model. In addition, the robustness of the MBP curriculum was tested by using Crane et al.'s (2017) suggested framework of essential warp and flexible weft ingredients of Mindfulness-Based Programs.

3.1.5 Appropriate use of statistical methods: Chapter 4 elaborated on the several parametric statistical approaches used to analyze quantitative data collected in parallel for both the intervention and control groups. Repeated Mixed Factorial ANOVA model Tabachnick

& Fidell (2007) was used to compare the rate of change in leadership behavior ratings between the two categorical intervention and control groups, pre-intervention and post intervention. In addition, Linear Regression analysis was conducted to test the predictive relationships of the state of mindfulness, leader' behavior ratings with leadership effectiveness.

## 3.2 Sample

As a professional corporate trainer at education institutions and a business solution provider, the trainer had the opportunity to train several classes of corporate leaders from a variety of large and small medium sized organizations (SMEs) in Singapore and Malaysia. Invites were extended to secure volunteer managerial leaders from varied organization backgrounds who were willing to participate in the study (Appendix K). Consent forms were subsequently sought from participating business entities and volunteer individuals from education institutions (Appendix L and M).

### 3.2.1 Demographics of Participants and Other Raters

Data was collected from a sample of 60 managers participants from different organizations and industries in Singapore and Malaysia, such as logistics, trading, engineering and professional services. 93 other raters were involved in the process of rating the respective 60 participating managers in their respective organizations.

The following figures 8 and 9 synopsized details of participants and other raters' industry and backgrounds. We ensured that other raters were kept anonymous as agreed at the start of the experiment when they signed the consent forms.

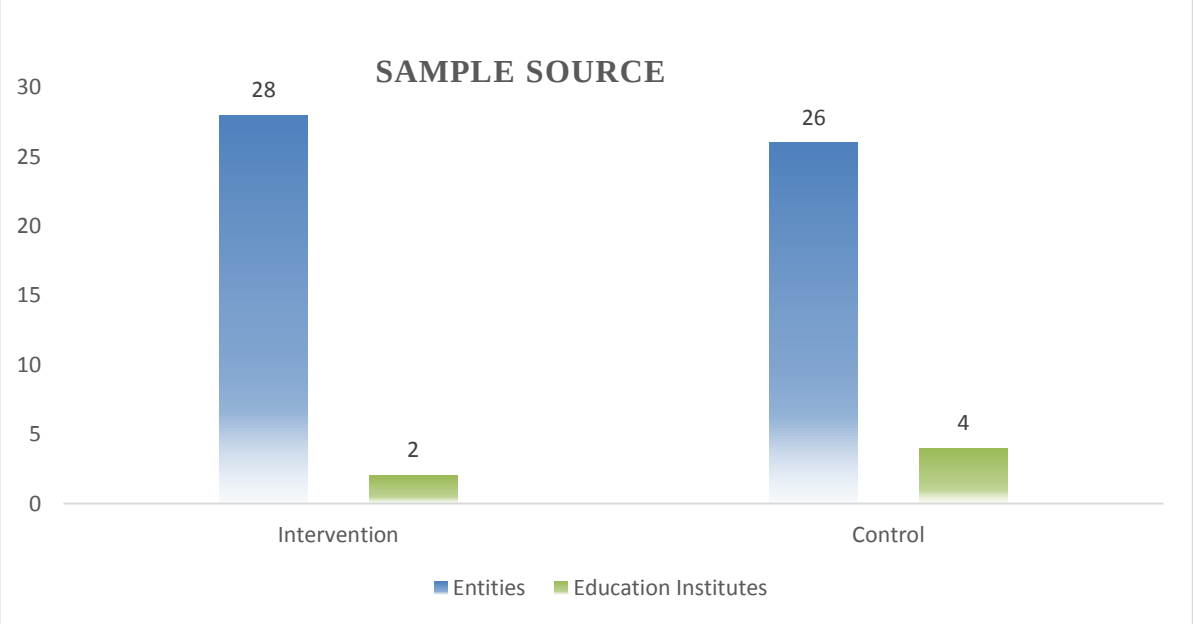
### 3.2.1.1 Industry


Figure 8: Distribution of Participants and Other Raters by Industry

### 3.2.1.2 Sample Participants and Other Rater Source

54 leaders came from participating entities. Leaders were non-randomly assigned by their General Managers; 28 leaders attended the leadership program while 26 leaders attended the presentation program (Figure 9). The purposeful selection of sample participants by the General Managers were based on participant's expressed interests and those who have been identified as having the adequate leadership experience and who were willing to invest time and effort to be trained, coached and measured to improve their leadership effectiveness. This is line with Patton's (2011) explanation that purposeful selection would likely contribute relevant research data. Remaining 6 participants were from education institutions; they had individually selected on their own to attend either of these two programs based on their own interests.

| | Training and 3 one-hour Coaching over 3 months | Training and 3 one-hour Coaching over 3 months |
|---|---|---|
| | **Mindfulness-based Leadership Course** | **Presentation Course** |
| Entities | Assigned by General Manager | Assigned by General Manager |
| Education Institutions | Voluntarily signed up | Voluntarily signed up |



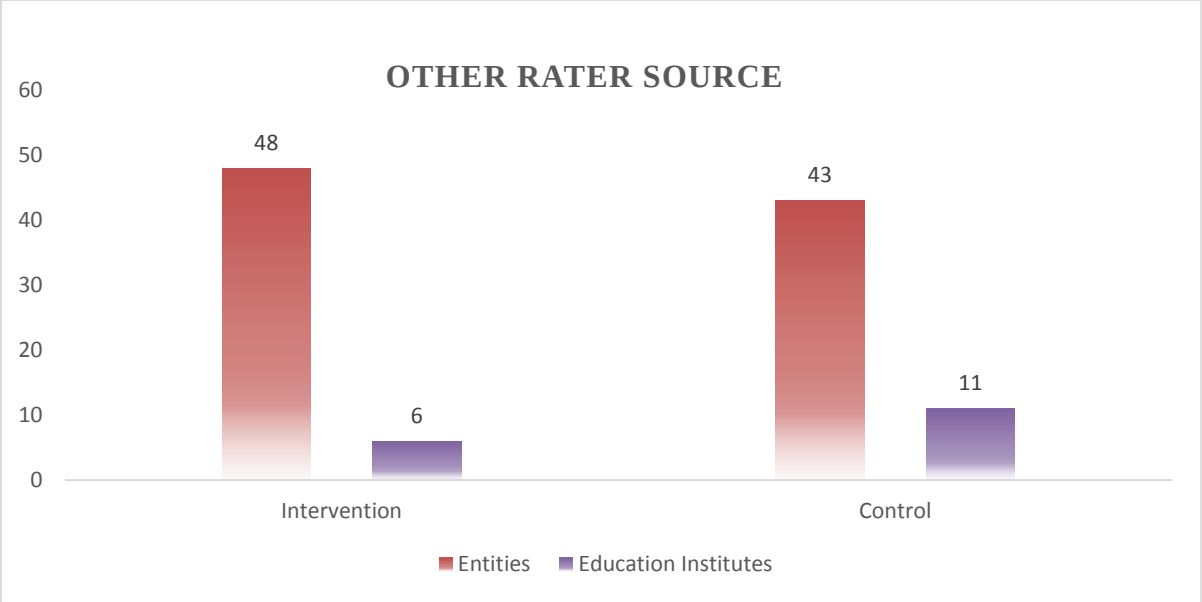
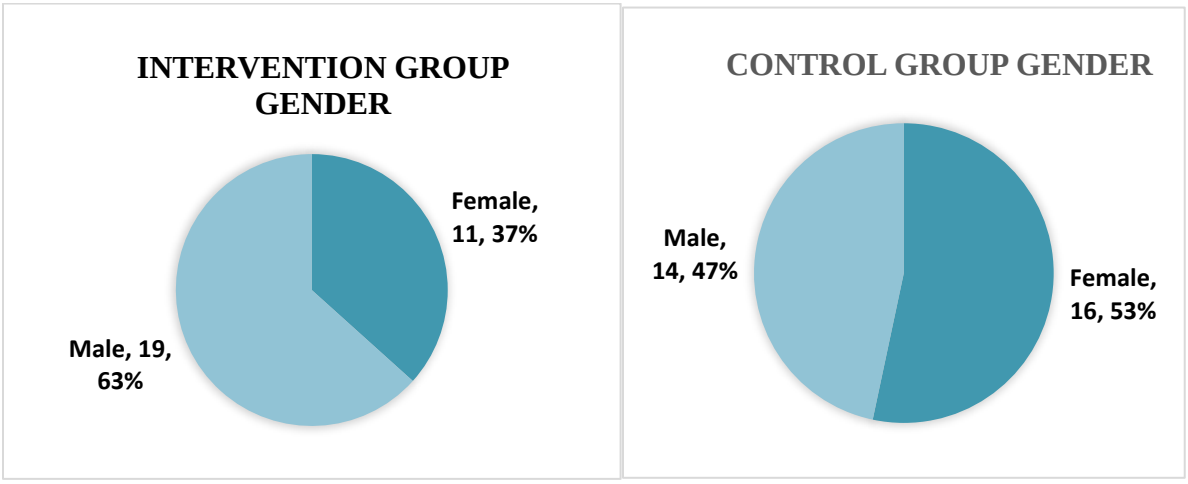



Figure 9: Sample Source of Participants and Other Raters

### 3.2.1.3 Gender

Our sample shown in Figure 10 comprise 30 leaders (63% men, 37% women) in the mindfulness-based leadership intervention group and 30 leaders (47% men, 53% women) in the control presentation skills group. Although 63 participants began with the study at Time 0, 3 participants left the intervention group due to employment attrition.



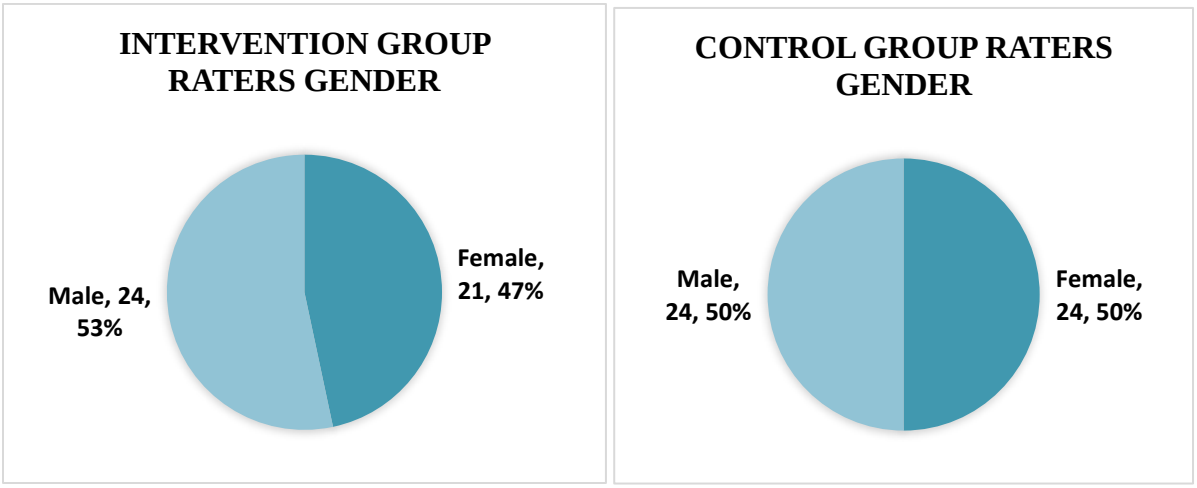
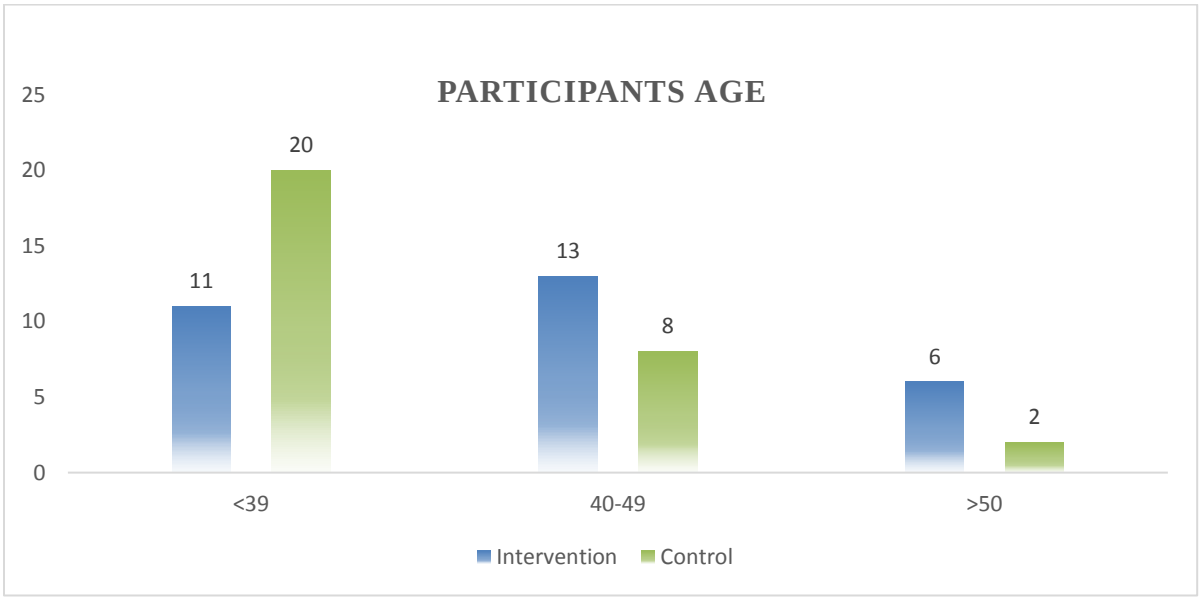



Figure 10: Composition of Participants' and Other Raters' Gender

### 3.2.1.4 Age

The composition of age in the intervention group showed 37% was less than 39 years, while 43% was aged between 40-49 with remaining 20% above 50 years of age, as presented in Figure 11. The composition of age in the control group was younger showing 67% was less than 39 years, while 27% was aged between 40-49 with remaining 6% above 50 years of age.



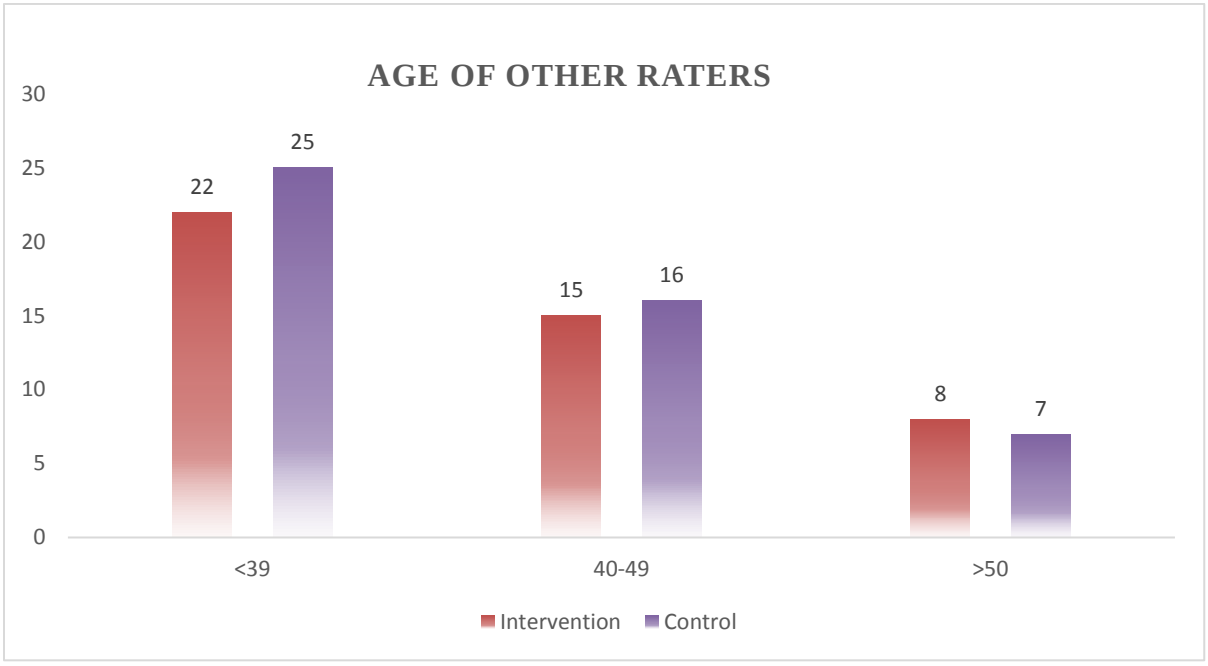



Figure 11: Composition of Participants' and Other Raters' Age

### 3.2.1.5 Nationality

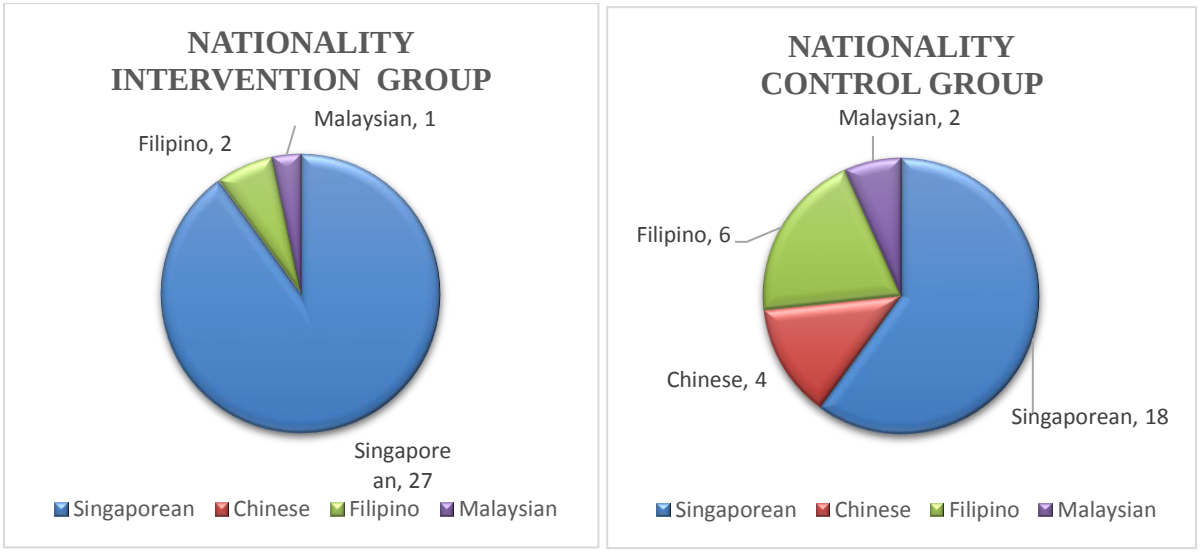



Figure 12: Composition of Participants' and Other Raters' Nationality

### 3.2.1.6 Tenure

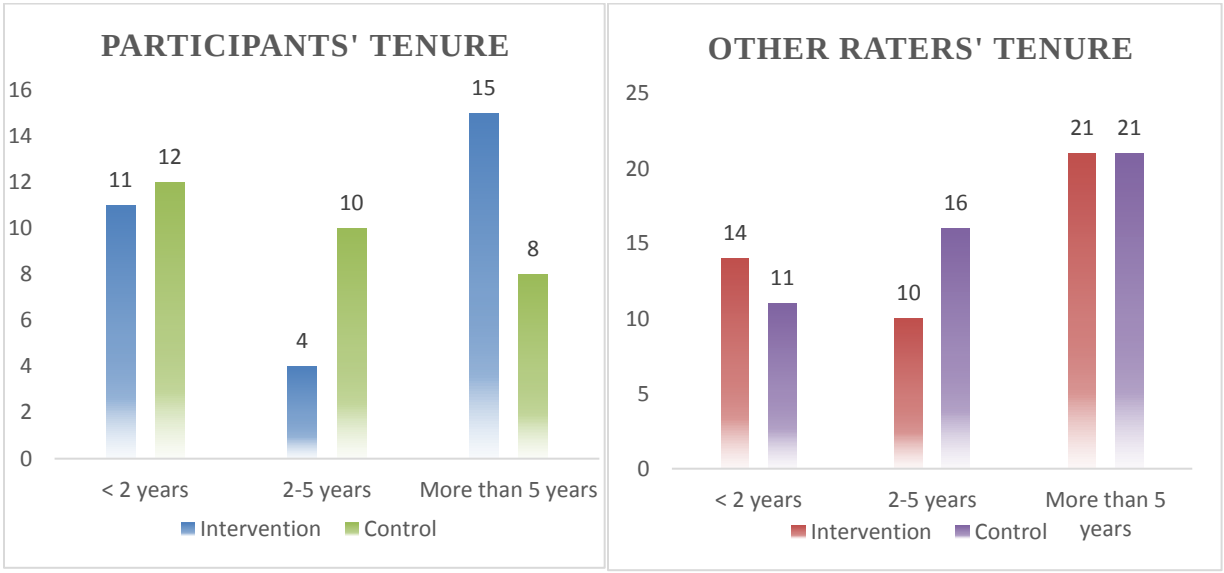



Figure 13: Composition of Participants' and Other Raters' tenure

### 3.2.1.7 Company Size

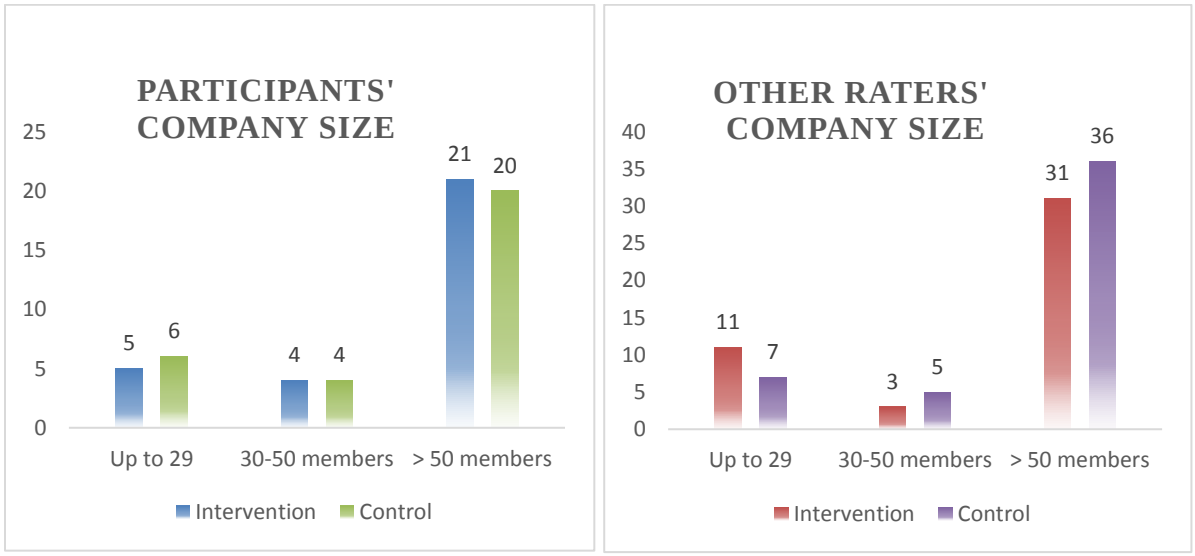



Figure 14: Composition of Participants' and Other Raters' Company Size

### 3.3 Field Quasi-Experimental Process

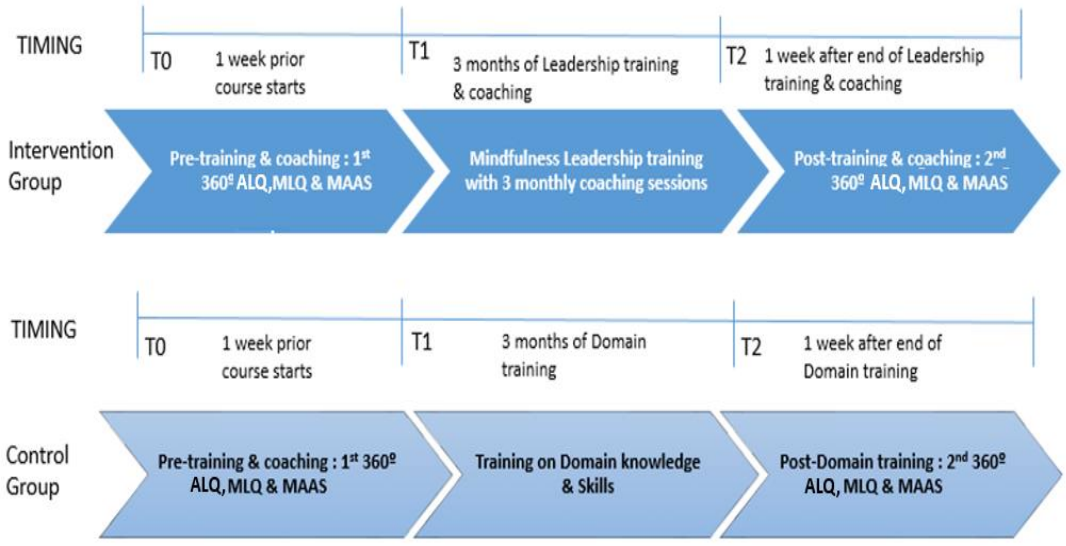



Figure 15: Research Design Framework

| DATA COLLECTION PROCESS | | | | |
|---|---|---|---|---|
| | 1 Week Before Training (1st 360 Ratings) | Training at T0 | 3 Months of Coaching | T2: 1 Week Post Training (Final 360 Ratings) |
| Leaders in Both Treatment and Control Groups | Self Rater: MAAS, MLQ, ALQ & Environment questionnaires | 2 Days course:<br>* Intervention - Mindfulness-based Leadership<br>* Control - Presentation | 3 one hour monthly individual coaching sessions provided to both group leaders over 3 months | Self Rater: MAAS, MLQ and ALQ questionnaires |
| Supervisor | Other Rater: MLQ and ALQ questionnaires | NA | NA | Other Rater: MLQ and ALQ questionnaires |
| Followers and Peers | Other Rater: MLQ and ALQ questionnaires | NA | NA | Other Rater: MLQ and ALQ questionnaires |

Figure 16: Data Collection Process

Figure 16 illustrates the data collection process involving both self-ratings and anonymous ratings by the supervisor and 1-2 peers and/or followers that were nominated by either the participating business entity's general manager or the individual leader volunteer who attended the course. These ratings took place at two separate times; first 360 rating was conducted one week prior T0 training and the second 360 rating was conducted at T2, one

week after completion of 3 one hourly coaching over three months. The gestation of three months allowed time for the respective development of mindfulness-based leadership behaviors in the treatment group and presentation skills in the control group. It took about 20 minutes each time for the completion of the ratings. Leader participants of the presentation course are requested to complete a short 5-minute survey on the effectiveness of the presentation course received.

A kick off meeting was conducted either via tele conversation, webinar or physical meeting with the raters that established consistent understanding of the description of questions listed and definition of scale used for rating.

In addition to the training, there was an up to an hour of individual follow up coaching sessions held once a month over the next three months between T1 and T2, post training. As suggested by London & Wohlers (1991), average ratings were more reliable and were better indicators of behaviors than ratings from any other single assessment. Hence ratings derived from every coworker/ follower was collected by the principal investigator and all ratings was subsequently aggregated and averaged at each time interval, with anonymity ensured.

### 3.4 MBP Training and Coaching Intervention

The training on mindfulness-based leadership for the intervention group only was focused on the impartation of mindful meditation techniques and the cultivation of a personal mindful practice; alongside the introduction to the full range of authentic, transactional and transformational leadership behaviors.

Leadership training was based on Avolio and Bass's (1990) full range of Multi Factor Transformational Leadership, Transactional leadership and Avolio, Gardner and Walumbwa's (2008) Authentic Leadership behaviors.

Training on mindfulness involved review of readings on Mindfulness literature, and practice of mindfulness in dealing with issues and challenges at workplace based on the work conducted by Kabat-Zinn (1990). Guided mindfulness techniques imparted were based on the learnings I derived from the 8-week Mindfulness-Based Stress Reduction course conducted by Professor Jochen Reb at Singapore Management University.

Topics covered during the course encompass:

- Basics of mindfulness meditation (Body scan and breathing meditation)
- Thinking and living daily with practice of mindfulness
- Kabat-Zinn's (1990) MBSR Techniques to regulate intense emotions
- Practices that cultivate positive states of mind, heighten self-awareness and self-regulation

Literature review explained that mindfulness practices help leaders to be fully present when relating with the followers; and by integrating followers' work activities with their self-interest, followers are motivated to emanate behaviors in ways that are consistent with their authentic values. To enable leaders to cultivate mindfulness at workplace, mindfulness techniques that were practiced at the MBP training included body scanning, breathing, meditation, intrapersonal capabilities and stress management techniques. However, research studies cautioned that the effectiveness of leadership and the transfer of knowledge to employees vary with the individual's state of mindfulness. Thus, to heighten leadership effectiveness, the MBP in this research study were tailored to individual needs during the coaching sessions. Thus, MBP coaching sessions were contextualized to engage each leader in sharing personal experiences encountered and encourage experimenting and adoption of mindfulness practices appropriate to each leader's work context.

### 3.5 Training Programs and Coaching Sessions Outline

Both courses were conducted with use of videos, readings, reflections and activities. The training and coaching intervention encouraged changes at the cognitive, attitudinal and behavioral levels. Coaching sessions facilitated as a safe space for experimentation where participants tested their new knowledge, and eventually integrated their learnings into new behaviors, before transferring them to the work place. De Vries & Korotov (2007) suggested that coaching techniques such as reframing, encouragement and clarification of thoughts were effective in contributing to the participant's development of solutions to personal and organizational issues.

Several studies highlighted that leadership training programs would create more impact if they include seminar and involve coaching over a period of time (Cooper et al., 2005; De Vries & Korotov, 2007). In this research study, three one-hour individual follow-up coaching sessions were held once a month over the next three months between T0 and T2 for both the intervention and control groups.

Coaching for intervention group involved going through the subordinate ratings and other raters' perceptions of the manager's leadership style. Gaps were identified, and coaching was conducted to foster mindful-based practices to convert learning objectives from experimentation into practice at work. Action plans were developed with individual leaders to implement leadership behavioral changes. Coaching sessions for control group focused on developing action plans to hone presentation and communication related skills. Coaching sessions for both groups involve working with real problems encountered at work place relating to the respective topics on mindfulness-based leadership and presentation skills. Targets were set jointly with managers on the behaviors required to be developed to enhance their effectiveness. Targets set were practical and could be easily adopted in their daily

operations.

Approach towards coaching adopted Ellis & Davidi's (2005) 3 steps approach. First, we encouraged participants to self-evaluate own behaviour to assess how it contributed to performance. Second, we evaluated the causal link between behaviour and outcome, and finally we sought feedback and reflection on behaviour changes made to improve performance. The trainer facilitated in a consultative and motivational capacity as an external coach and researcher. She encouraged a sense of self competence and promote a mindful culture of collaborative efforts between team members (Manz, 1996). In addition, a realization was instilled towards a shared sense of purpose and commitment to encourage initiative instead of free riding. Furthermore, alternative perspectives and potential strategies were explored to align work activities towards shared objectives (Edmondson, 1999).

Below is a synopsis of lesson plans and coaching sessions outlines for respective conditions. Further Details on training lesson plans for leadership MBP and presentation courses are placed in Appendix G and H respectively. Detailed coaching session outlines for leadership MBP and presentation are placed in Appendix I and J respectively.

# MBP GROUP LESSON PLAN

| Duration | Content/Activity | Suggested Methods | Resources |
|---|---|---|---|
| **Day 1 Morning Session** | | | |
| Morning Session 9am -12pm | • Introduction to the Full Range Model<br>• Derive personalized leadership profile via completing MLQ, ALQ, MAAS and Environment questionnaires | • Individual and Class discussions<br>• Facilitator Presentation<br>• Leadership Profiling | • Ppt. Slides<br>• Flipcharts<br>• Video/Audio<br>• Questionnaire |
| **Day 1 Afternoon Session** | | | |
| Afternoon Session 1pm -5pm | • Introduction to Mindfulness in Leadership<br>• Concept of and Practice of Mindfulness to enact Self-Awareness and Self-Regulation | • Facilitator lead Mindfulness Exercise in class<br>• Individual reflection & Class Discussion | • Literature Review<br>• Ppt. Slides<br>• Flipcharts |

| Duration | Content/Activity | Suggested Methods | Resources |
|---|---|---|---|
| **Day 2 Morning Session** | | | |
| Morning Session 9am -12pm | • Explore and Examine existence of Leadership Blockages<br>• Review of MLQ Feedback<br>• Relating Mindfulness to Leadership Behaviors | • Facilitator lead Mindfulness Exercise in class<br>• Individual reflection & Class Discussion | • Ppt. Slides<br>• Flipcharts |
| **Day 2 Afternoon Session** | | | |
| Afternoon Session 1pm -5pm | • Case Study to evaluate how leaders demonstrate use of respective Full Range of Leadership styles<br>• Personalize Mindfulness Practice to change leadership behaviors | • Facilitator presentation<br>• Class Discussion<br>• Individual Reflection<br>• Facilitated Discussion | • Case Study<br>• Literature Review<br>• Ppt. Slides<br>• Audio/Video |

| Duration | Content/Activity | Suggested Methods | Resources |
|---|---|---|---|
| | • Recap and putting in place Leadership Development Plan | | |
| **End of Class** | | | |

Figure 17: MBP Group Lesson Plan

# PRESENTATION GROUP LESSON PLAN

| Duration | Content/Activity | Suggested Methods | Resources |
|---|---|---|---|
| **Day 1 Morning Session** | | | |
| Morning Session 9am -12pm | • Introduction to Effective Presentation<br>• Confront fear of speaking<br>• Preparing 3-minute elevator speech | • Facilitator presentation<br>• Individual presentation<br>• Class discussions | • Ppt. Slides<br>• Flipcharts<br>• Video/Audio<br>• Questionnaire |
| **Day 1 Afternoon Session** | | | |
| Afternoon Session 1pm -5pm | • Responding to spontaneity and cold calls<br>• Effective Pitch Structure<br>• Positioning value proposition<br>• Art of Persuasion<br>• Recap of Today's Learnings | • Facilitator presentation<br>• Individual and group participation<br>• Class activity | • Literature Review<br>• Ppt. Slides<br>• Flipcharts |

| Duration | Content/Activity | Suggested Methods | Resources |
|---|---|---|---|
| **Day 2 Morning Session** | | | |
| Morning Session 9am -12pm | • Master the use of Kinesthetic, Tonality and language skills to influence<br>• Understanding Heuristic Influences on Presentation | • Facilitator presentation<br>• Class participation and discussion | • Ppt. Slides<br>• Flipcharts<br>• Video clip |
| **Day 2 Afternoon Session** | | | |
| Afternoon Session 1pm -5pm | • Introduction to Business and Visual Intelligence in presentation<br>• Practice on use of tools to present on a case study<br>• Recap and putting in place Leadership Development Plan | • Facilitator presentation<br>• Class Participation<br>• Individual Reflection<br>• Facilitated Discussion | • Case Study<br>• Literature Review<br>• Ppt. Slides<br>• Audio/Video |
| **End of Class** | | | |

Figure 18 Presentation Group Lesson Plan

## MBP LEADERSHIP COACHING OUTLINE

| Duration | Content/Activity | Suggested Methods | Resources |
|---|---|---|---|
| **LEADING MINDFULLY IN DYNAMIC TIMES - COACHING SESSION 1** | | | |
| First Coaching Session | • Sharing of participant's Aspirations and struggles as a leader in their respective Organization. | • Facilitated Discussion and Participant's Sharing | • Kabat-Zinn's (1990) MBSR techniques<br>• Training materials<br>• Audio/Videos |
| **LEADING MINDFULLY IN DYNAMIC TIMES - COACHING SESSION 2** | | | |
| Second Coaching Session | • Exploring participant's exposure and learning experiences to situations requiring the Activation of self-regulation with their behaviors.<br>• Discuss on how Agile the participant is in handling emotions, thoughts and responses to situations at workplace. | • Facilitated Discussion and Participant's sharing | • Kabat-Zinn's (1990) MBSR techniques<br>• Training materials<br>• Writing paper/ Board |

| Duration | Content/Activity | Suggested Methods | Resources |
|---|---|---|---|
| **LEADING MINDFULLY IN DYNAMIC TIMES - COACHING SESSION 3** | | | |
| Third Coaching Session Second Half Hour | • Identify Aspects of participant's leadership behaviors to mindfully develop further.<br>• Which mindfulness technique was found to be most useful in developing follower's work performance; and which behavior still needs mindful honing. | • Facilitated Discussion and Participant's sharing | • Kabat-Zinn's (1990) MBSR techniques<br>• Training materials<br>• Writing paper/ Board |

Figure 19 MBP Leadership Coaching Outline

## PRESENTATION COACHING OUTLINE

| Duration | Content/Activity | Suggested Methods | Resources |
|---|---|---|---|
| **PRESENTATION - COACHING SESSION 1** | | | |
| First Coaching Session | • Awareness of own Leadership Behaviors viz a viz others' perception of their own leadership behaviors.<br>• Sharing of participant's Aspirations as a leader in their respective Organization. | • Facilitated Discussion and Participant's Sharing | • Nancy Duarte's book (2010): present visual stories that transform audiences.<br>• Writing paper/ Board<br>• Audio/Videos |
| **PRESENTATION - COACHING SESSION 2** | | | |
| Second Coaching Session | • Exploring participant's exposure and learning experiences to situations requiring activation of presentation skills to lead followers better.<br>• Discuss on how agile the participant was in handling the | • Facilitated Discussion and Participant's sharing | • Nancy Duarte's book (2010): present visual stories that transform audiences.<br>• Writing paper/ Board |

| Duration | Content/Activity | Suggested Methods | Resources |
|---|---|---|---|
| | content, verbal and non-verbal cues during presentation to management or communication with followers at workplace. | | |
| **PRESENTATION - COACHING SESSION 3** | | | |
| Third Coaching Session | • Identify aspects of participant's leadership presentation skills that enhanced their leadership effectiveness.<br>• Identified presentation techniques to experiment further to improve leadership effectiveness in motivating followers. | • Facilitated Discussion and Participant's sharing | • Nancy Duarte's book (2010): present visual stories that transform audiences.<br>• Writing paper/ Board |

Figure 20 Presentation Coaching Outline

## 3.6 Fidelity Test on MBP Intervention Method

The underpinning importance of fidelity for the intervention method used was emphasized in the research design. Attention was placed on the need for clarity on the type of population the program is intended for and the relevance of the intervention mechanisms in the context of the business environment. In addition, the study focused on establishing a robust mindfulness-based program and providing quality supervision needed to render intervention effective when implemented in a real business organization setting.

An evaluation was conducted to examine the extent to which the mindfulness-based leadership intervention training and coaching program in this study complies with the fidelity criteria listed by National Institutes of Health (NIH) Six Stage model (Onken et al., 2014); as illustrated in Figure 21.

| | |
|---|---|
| **STAGE 0** | Illustrated the basis for generating the behavioral intervention.<br>Evaluated effectiveness of the intervention mechanisms adopted in this study. |
| **STAGE 1** | Ensured fidelity of intervention delivery.<br>Listed Measures and Methods used to derive scientific information on effects of intervention. |
| **STAGE 2** | Examined the mechanisms of behavior change. |
| **STAGE 3** | Tested intervention for efficacy in a real-world setting. |
| **STAGE 4** | Established External Validity for Research to be effective. |
| **STAGE 5** | Implemented and Disseminated. |

Figure 21: Six Stage model (Onken et al.. 2014).

### 3.6.1 Stage 0 –Basis for Generating Behavioral Intervention.

This research introduced the use of mindfulness-based leadership training and coaching program as the intervention mechanism to effect behavioral changes in business leaders at the workplace. The sample of more 60 business managers were placed into two intervention and control conditions. With the conduct of this quasi-experimental field study, the study

evaluated the existence of causal relationships between training intervention with leadership behaviors and performance outcomes in a dynamic environment.

As leaders were assigned to attend either the leadership course or the presentation course, there was a possibility that the leader was not allocated to the course he/she was interested in. The training had also changed their leadership or presentation knowledge, understanding, and possibly performance, and therefore involved manipulation of social/psychological variables. We addressed the risk of manipulation and demoralization by offering the other training that they have not attended earlier.

### 3.6.2 Stage 1 comprises two parts:

#### 3.6.2.1 Ensure Fidelity of Intervention Delivery.

MBP training program incorporated core essential features of MBP recommended by Crane (2017).

- A training curriculum that was well-researched, delivered with consistent quality and facilitated enhancement of leaders' effectiveness in the workplace.
- Pilot testing of leadership and presentation trainings conducted at education centers in Singapore and Malaysia before rolling the program out.
- An action learning coaching approach that identified real work-related issues, encouraged questions to derive insights, involved reflective listening and commitment to take actions to change behaviors.

Theoretical research concepts were converted into practical techniques and activities to facilitate learning of the respective presentation or mindfulness-based leadership course. Training mindfulness-based leadership training involved:

- Guided training sessions on mindfulness techniques and cultivation of a regular meditation practice Kabat-Zinn's (2011) updated Mindfulness-Based Stress Reduction program).
- Introduction to Bass and Avolio's (1990) full range of Multi Factor Leadership and Avolio et al.'s (2007) Authentic Leadership behaviors.
- Presentation training drew reference from Nancy Duarte's (2010) book, Resonate: present visual stories that transform audiences.
- Coaching involved the application of either presentation or mindfulness-based leadership techniques at work.

Researcher monitored the participants' diligent and reflective efforts to measure whether their efforts resulted in enhanced work productivity and better leader satisfaction from followers and colleagues. This was assessed with the second 360 evaluation at T2 after the completion of the intervention program.

#### 3.6.2.2 Methods to Derive Scientific Information on Effects

As Illustrated in Figures 15 and 16, scientific data was collected to facilitate analysis on the effectiveness of the training and coaching from both the leader's self-ratings and ratings by their supervisor/peers/followers at two separate times for their respective level of leadership behaviors demonstrated during training (T0) and post-training 3 months after (T2). These three months provided time for the respective development of mindfulness-based leadership behaviors in the treatment group and presentation skills in the control group.

In addition to the training, there was an hour of individual follow up coaching sessions held once a month over the next three months between T1 and T2. Targets were set jointly with managers on the improvements in the respective skills required to be developed to

enhance their effectiveness. Targets set were practical and easily adopted in their daily operations.

We ensured the validity of leadership behavior ratings, as this study did not just rely on a single-source data which could have resulted in common-sourced-common-method bias. Other raters were involved in rating the leader's behaviors; thus, reliability of the results was enhanced.

### 3.6.3 STAGE 2: Mechanism of Behavior Change.

Research experiment involved manipulation, tests and examination of the responses of respective components of the intervention mechanisms with the mediator and moderator variables. Evaluation was conducted on whether the intervention mechanism components (mindfulness-based leadership training and coaching) caused changes to:

- Managers' leadership behaviors.
- Followers and coworkers' effort and productivity.
- Followers and coworkers' satisfaction with leadership.

This research study measured the effectiveness of the MBP as an intervention mechanism and scientifically evaluated whether the mindfulness-based leadership training and coaching intervention mechanism retained the effects on the leaders' behaviors when leaders adapted their learnings to fit dynamic real-world conditions. This was done by comparing the ratings shown in questionnaire results of 360 leadership ratings pre-and three months' post-training and coaching. The study further examined whether the state of turbulence in the business environment moderated the strength of these effects.

### 3.6.4 STAGE 3: Test intervention for Efficacy in Real-World Setting

We established internal validity by ascertaining whether the intervention mechanisms were effectively implemented in a real business organization setting. Steps were taken to evaluate the effectiveness of training and coaching intervention mechanisms in a real business organization setting in the following ways:

- Reviewed 360-degree feedback results at T2 viz a viz T0, after leaders completed the mindfulness-based leadership and presentation skills training and coaching sessions.
- Ascertained the strength of correlations at T2 between the training and coaching mechanisms in respective conditions, with enhanced follower's satisfaction with leader, improvement in work productivity and increase in effort.
- Assessed whether the intervention mechanism was practical in a real-world setting. This study did not rely on a single-source data as other raters were involved in rating the leader's behaviors; hence internal validity and reliability of the results were enhanced. However, short delays were sometimes experienced while collecting 360 evaluations, due to practical work exigencies or staff travelling schedules.

### 3.6.5 STAGE 4: External Validity

This study ascertained the effectiveness of the training and coaching intervention program at the workplace, by gathering responses via observations and interviews. The following were noted:

- Student ratings on student feedback forms indicated that the courses conducted have met their expectations on the respective topics on leading mindfully and presentation skills.
- After the pilot runs of these 2 courses at the education institutions in Singapore and Malaysia; both institutions requested to continue these 2 courses throughout Year 2018.

- Other external organizations had subsequently signed up to run either of these two courses as part of their inhouse training.
- General Managers testified that the mindfulness-based leadership course helped their leaders cope better in a competitive, economically uncertain and technologically disruptive environment. Two companies have requested for coaching sessions to continue beyond program completion.
- Numerous colleagues witnessed the positive behavioral changes in participants who underwent training with coaching sessions.

### 3.6.6 STAGE 5: Implement and Disseminate.

This research encouraged organizations to adopt a scientific approach towards professional leadership development in a real business workplace setting. This would facilitate a balance between the art and science of mindful leadership management. This scientific pedagogical approach served as an accountable way to assess the impact that mindfulness-based leadership training and coaching had on the leader's and employees' performance. Having the ability to verify and scientifically analyze results of leadership development effort with work performance, could potentially motivate companies to invest time, budget, resource and effort to groom their leaders.

## 3.7 Fidelity Test on Essential Elements of Mindfulness-Based Program (MBP)

It is important that the essential elements of the MBP are kept consistently applied to uphold the quality of the program. Hence, this study ascertained the robustness of the mindfulness-based leadership training and coaching program, by analyzing the elements of our

mindfulness-based leadership intervention program with Crane et al.'s (2017) suggested framework of essential warp and flexible weft ingredients of Mindfulness-Based Programs.

| **FIDELITY TEST ON WARP CHARACTERITICS**<br><br>**Crane et al. (2017)**<br><br>Warp characteristics of this research's mindfulness-based leadership training and coaching intervention program. | **ESSENTIAL ELEMENTS OF THIS RESEARCH STUDY MBP**<br><br>3.7.1 MBP premised on theories and practices derived from a confluence of contemplative traditions, science, and disciplines of medicine, psychology and education.<br><br>3.7.2 Training with coaching facilitated the human experience to discover and address causes of distress to find ways to relieve.<br><br>3.7.3 Developed a new relationship with experience by being in the moment.<br><br>3.7.4 Developed attention, emotional, behavioral regulation and positive qualities.<br><br>3.7.5 Engaged in mindfulness meditation and inquiry-based learning process to gain insights.<br><br>3.7.6 Quality program facilitated by qualified trainer who engages in on going mindfulness practices. |
|---|---|

Figure 22: Framework of essential warp of MBP Crane et al. (2017)

### 3.7.1 Based on Theories and Practices

**Based on Theories and Practices Derived from a Confluence of Contemplative Traditions, Science, and Disciplines of Medicine, Psychology and Education.**

- *Contemplative.* This research encouraged a systematic repeated practice of mindfulness techniques that train the leader's mind to be aware, attentive and regulated.
- *Science*. Adopted scientific evidence to derive information on what mindfulness techniques work best to foster effective leadership behaviors.
- *Education.* Provided a structured mindfulness-based program to facilitate interactive, reflective and inquiry-based learning, that is based on empirically tested and informed theories.
- *Medicine.* Helped leaders to transform as a form of internal learning and healing.
- *Psychology*. Better handled distress and discomfort in a dynamic work environment setting.
- *Secular*. This MBP kept to a neutral norm that is made universally accessible to participants from any religion, culture or profession.

### 3.7.2 Discussion on the Pros and Cons of Coupling Training and Coaching as a Joint Intervention Mechanism

This study coupled coaching with training as an intervention mechanism that provided extended psychological support through discussion during coaching sessions. The benefits of coupling coaching sessions with teaching were derived from:

- Impartation of theories and practices of mindful enactment of leadership behaviors.
- Guidance of participants towards a self-exploration experience.
- Enablement with techniques to identify causes of distress.

• Facilitation in a self-discovery journey to find personal pathways to overcome challenges faced.

Adoption of the coupled structured training and coaching approach enabled this study to bridge the gap between theory and practice of leadership development. This was done by guiding leaders through the transference of knowledge via leadership group training and individual coaching. To be consistent, both the treatment and control groups underwent two days of group training and three one-hour individual coaching sessions on the respective topics.

This experiment focused on evaluating the impact that a coupled mindfulness-based leadership training and coaching program had on the leaders' behaviors and work performance in the intervention group viz a viz the training and individual coaching for presentation skills.

As the effects of the various training and coaching mechanisms specific to the programs were not differentiated, it was not possible to determine which of these mechanisms was the most effective. The researcher is keen to decouple training from coaching as individual intervention mechanism in future research.

### 3.7.3 Developed New Relationship with Experience by Being in the Moment

The core aim of this MBP was to provide a mindfulness-based program that serves as:

i) A clinical tool to respond to distress and challenges.

ii) Mental training tool to hone leadership behaviors.

iii) Self-help tool by facilitating easy access to teachings and learnings.

With the use of Open ground's (2016) mindfulness techniques and Kabat-Zinn's (1990) Mindfulness Based Stress Reduction (MBSR) techniques, the facilitators trained intervention group participants to recognize and attempt to overcome habitual reactions by being attentive, aware and regulated; instead of responding automatically.

### 3.7.4 Developed Attention, Emotional and Behavioral Regulation

The teaching and coaching process served as self-liberation platform. Learning was facilitated through experiential learning of self-discovery, self-regulation and self-exploration (Crane, 2017). The mindfulness-based program aimed to provide a training curriculum that stayed relevant and was easy for leaders to apply in the workplace.

### 3.7.5 Engaged in Mindfulness Meditation and Inquiry-Based Learning Process to Gain Insights.

Intervention group participants were encouraged to develop a regular practice of mindfulness meditation and exercises to hone awareness and orientate the mind to stay curious and open to pleasant and unpleasant experiences. This study subscribed to Brown & Ryan's (2003) explanation that mindfulness is a psychological state of being attentive to the present moment attuned to the internal processes and states. It does not necessarily require meditation (Weick & Sutcliffe, 2006). Hence, this program advocated regular meditation, alongside the use of other practical mindfulness techniques based on Kabat-Zinn's (1990) teachings.

### 3.7.6 Qualified Mindfulness-Based Program Trainer

#### 3.7.6.1 MBP Trainer Possess Competencies for Effective Program Delivery

The quality of delivery of training and coaching was based on the trainer's knowledge, pedagogical experience and participants' learning curve. Mindfulness-based training was based on Kabat-Zinn's (1990) MBSR techniques. Having attended and being trained by Professor Jochen Reb, the researcher was familiarized with the curriculum coverage, pace and methodologies. The researcher applied two decades of corporate training experience with intuition and interpersonal relational skills when facilitating leaders during individual coaching sessions and in group trainings.

#### 3.7.6.2 Embodied Qualities and Attitudes of Mindfulness within Teaching Process

This program involved experiential learning by relating to real events and personal issues. Insights emerged from self-reflection and are cultivated from within.

#### 3.7.6.3 Engaged in Quality Teaching and Ongoing Good Practice

Trainer continues to garner teaching experience by continuous quest for deeper knowledge on mindfulness, leadership and teaching competence; and commits to a regular daily personal mindfulness practice.

#### 3.7.6.4 Be Part of a Learning Process with Student and Client.

Coaching sessions facilitated mutual commitment of time and effort for the trainer to support each participant in their self-discovery and psychological search for pathways to overcome their identified issues.

## 3.8 Fidelity Test on Curriculum

| FIDELITY TEST ON WEFT CHARACTERISTICS<br><br>**Crane et al. (2017)** | ESSENTIAL ELEMENTS OF MBP CURRICULUM |
|---|---|
| Weft characteristics of this research's mindfulness-based leadership training and coaching intervention program. | 3.8.1 Curriculum was tailored to be accessible and useful to population.<br><br>3.8.2 Variations on program structure, the length and delivery were tailored to the dynamic work environment.<br><br>3.8.3 Trainer has relevant knowledge, experience and professional training to deliver program to business managers. |

Figure 23: Framework of essential Weft characteristics of MBP Crane et al. (2017)

### 3.8.1 Curriculum was Tailored to be Accessible and Useful to Population

Effective transformational leadership programs involved both the impartation of good content and the inculcation of a drive towards putting learnings into practice (De Vries et al., 2007). The features of this leadership program were designed to encourage the daily use of mindful practices and techniques to enact effective leadership behaviors in the business organization setting to address real issues experienced at the work place. The mindfulness meditative process of body scan, deep breathing movement and sitting exercises were introduced during training. This program encouraged regular practice of ten minutes body and psychological scan.

To ascertain whether the training programs were found useful, the trainer requested for feedbacks during the pilot studies from participants on their receptivity to the intervention program. Participants commented that:

- mindfulness-techniques alongside meditative exercises improved their awareness, adaptation and self-regulation over time.
- Results from 360 evaluations put clarity to which specific behaviors require remedial attention.
- One to one coaching session facilitated the individual participants to learn via self-exploration and introspection.

### 3.8.2 Tailor Program Structure, Length and Delivery to Work Environment

While the delivery may have differed slightly in terms of timing and length to fit the executives busy schedule and business organization context; this study ensured the pedagogical framework was consistently applied to each training and coaching session for all participants.

### 3.8.3 Trainer has Relevant Knowledge, Experience and Professional Training to Deliver Program to Business Managers

The trainer has been trained by Professor Jochen Reb in the 8-week Kabat-Zinn's (1990) MBSR course. She has been providing corporate trainings to multi-racial, multi-cultural managers and professionals over the last two decades to education institutions, Multi-National Companies, Government Linked Companies and Small and Medium Enterprises in Malaysia and Singapore.

## 3.9 Test of Integrity of the Mindfulness-Based Program (MBP)

In the process of assessing the integrity of the MBP in a business organization context, this study evaluated whether the program adhered to the three perspectives advocated by Crane (2017). Namely clear intention, balanced approach and staying neutral.

### 3.9.1 Clear intention

MBP clearly intended to facilitate results in the reorientation of participants' responses and approaches to life experiences. This MBP program facilitated individuals with a personal experiential learning process using mindfulness techniques to make skillful choice of responses to their life (Cook, 2016).

### 3.9.2 Balanced Approach

Balanced consideration was given to ethics, culture, concern to remain secular and mainstream. Due respect was given to each individual's values, beliefs and relationships.

### 3.9.3 Staying neutral

We stayed neutral by introducing mindfulness-based practices into the secular mainstream business organization context. This mindfulness-based program involved trainer coaching managers in a neutral manner, via working with the participants at their own learning pace with the practice of meditation and experimentation of different mindfulness techniques.

## 3.10 Measurement Instruments

### 3.10.1 Measurement of Mindfulness: Brown and Ryan's (2003)

Mindful Attention Awareness Scale 15 item questionnaire (MAAS) using a six-point likert scale (1-6) (Appendix A). These were some of the questions asked using this likert scale.

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| Almost Always | Very Frequently | Somewhat Frequently | Somewhat Infrequently | Very Infrequently | Almost Never |

1. I could be experiencing some emotion and not be conscious of it until sometime later.
2. I break or spill things because of carelessness, not paying attention, or thinking of something else.
3. I find it difficult to stay focused on what's happening in the present.

### 3.10.2 Measurement of Dynamic Environment: Jaworski and Kohli's (1993)

17 items questionnaire using four-point likert scale (0-4) to characterize the turbulent environment into three aspects; namely the extent of market turbulence, competitive intensity, and technological turbulence (Appendix B).

These were some of the questions asked using a 5 point scoring format would be employed for the items listed below.

1 Strongly disagree 2 Disagree 3 Neutral 4 Agree 5 Strongly agree

*Market Turbulence*

1. In our kind of business, customers' product preferences change quite a bit over time.

2. Our customers tend to look for new products all the time.

*Competitive Intensity*

1. Is the competition in our industry is cutthroat?

2. Are there many "promotion wars" in our industry.

*Technological Turbulence*

1. The technology in our industry is changing rapidly.

2. Technological changes provide big opportunities in our industry.

### 3.10.3 Training and Coaching Sessions Outlines

The Individual coaching was conducted by interacting and supporting respective leaders once every month for an hour per session, over 3 months after the two-days training (Please refer to Appendix G and H). The coaching sessions (Please refer to Appendix I and J) facilitated time to reflect on how skills imparted during training were practiced in the process of honing either their leadership or presentation skills in the work context.

**3.10.4 Debrief Form** was given to the participants. (Please refer to Appendix N).

### 3.10.5 Measurement of Leader's Behaviors and Leadership Effectiveness:

#### 3.10.5.1 Multifactor Leadership Questionnaire (MLQ) Bass & Avolio's (1990)

Measurement of Leader's Behaviors and Leadership Effectiveness were operationalized and measured with form 5X using a five-point likert scale (1-5) (Appendix C self-rating and other rating in Appendix D) using the following rating scale:

| Not at all | Once in a while | Sometimes | Fairly often | Frequently, if not always |
|---|---|---|---|---|
| 0 | 1 | 2 | 3 | 4 |

1. I provide others with assistance in exchange for their efforts
2. I re-examine critical assumptions to question whether they are appropriate
3. I fail to interfere until problems become serious

**3.10.5.2 Measurement of Authentic Leadership with Avolio, Gartner and Walumbwa's (2007) (ALQ) 16 item Questionnaire** using a five-point likert scale (0-4) (Appendix E).

| Not at all | Once in a while | Sometimes | Fairly often | Frequently, if not always |
|---|---|---|---|---|
| 0 | 1 | 2 | 3 | 4 |

1. As a leader, I say exactly what I mean.
2. As a leader, I admit mistakes when they are made.
3. As a leader, I encourage everyone to speak their mind.

**3.10.5.3 Method of Collecting Data**

Performance data includes categorical as well as predictive relationship between the type of training and coaching program, leadership behavioral ratings and leadership effectiveness in a dynamic environment. Participation in the training and coaching process was dummy-coded according to whether the individual was part of the intervention group (1) or the control group (2). The evaluation is conducted at two levels of analysis; the leader self-level of analysis and average of the combined ratings derived from different levels of other raters (namely supervisor, followers and peers); before measuring against self-rating.

Measurement and collection of data on leadership behaviors and leadership effectiveness were made pre and post training using MLQ Multi Factor Leadership and ALQ Authentic Leadership Questionnaires. Both questionnaires comprised 61 items that measured how frequently leaders engaged in 5 transformational, 4 transactional behaviors, 4 authentic behaviors and 3 measure of leadership outcomes. Transformational leadership behavior subscales (i.e. build trust, acts with integrity, encourages others, encourages innovative thinking and coaching) were measured by all raters were aggregated into one combined overall transformational leadership index of change. Transactional leadership Contingent rewards subscale remained intact, whilst remaining other three transactional subscales (i.e. active and passive management by exception and Laissez Faire transactional leadership styles) were aggregated into an overall "Transactional leadership manage by exception subscale". Four authentic subscales (i.e. self-awareness, transparency, ethical and balanced processing) were also combined into an overall authentic leadership index of change. The three outcomes of leadership (namely motivating extra effort; leading group effectively to be productive and garnering satisfaction for their leadership style) remained intact respectively.

| Leadership Styles | MLQ LEADERSHIP VARIABLES | Question Number | Questions |
|---|---|---|---|
| Transformational | Build Trust | 10 | I instill pride in others for being associated with me |
| Transformational | Build Trust | 18 | I go beyond self-interest for the good of the group |
| Transformational | Build Trust | 21 | I act in ways that build others' respect for me |
| Transformational | Build Trust | 25 | I display a sense of power and confidence |
| Transformational | Acts with Integrity | 6 | I talk about my most important values and beliefs |
| Transformational | Acts with Integrity | 14 | I specify the importance of having a strong sense of purpose |
| Transformational | Acts with Integrity | 23 | I consider the moral and ethical consequences of decisions |
| Transformational | Acts with Integrity | 34 | I emphasize the importance of having a collective sense of mission |
| Transformational | Encourages others | 9 | I talk optimistically about the future |
| Transformational | Encourages others | 13 | I talk enthusiastically about what needs to be accomplished |
| Transformational | Encourages others | 26 | I articulate a compelling vision of the future |
| Transformational | Encourages others | 36 | I express confidence that goals will be achieved |
| Transformational | Encourages Innovative Thinking | 2 | I re-examine critical assumptions to question whether they are appropriate |
| Transformational | Encourages Innovative Thinking | 8 | I seek differing perspectives when solving problems |
| Transformational | Encourages Innovative Thinking | 30 | I get others to look at problems from many different angles |
| Transformational | Encourages Innovative Thinking | 32 | I suggest new ways of looking at how to complete assignments |
| Transformational | Coaches and Develops People | 15 | I spend time teaching and coaching |
| Transformational | Coaches and Develops People | 19 | I treat others as individuals rather than just as a member of a group |
| Transformational | Coaches and Develops People | 29 | I consider an individual as having different needs, abilities, and aspirations from others |
| Transformational | Coaches and Develops People | 31 | I help others to develop their strengths |

Figure 24 MLQ Multi Factor Leadership showing questions related to the respective five Transformational leadership subscales.

| Leadership Styles | MLQ LEADERSHIP VARIABLES | Question Number | Questions |
|---|---|---|---|
| Transactional Contingent Reward | Contingent Reward | 1 | I provide others with assistance in exchange for their efforts |
| Transactional Contingent Reward | Contingent Reward | 11 | I discuss in specific terms who is responsible for achieving performance targets |
| Transactional Contingent Reward | Contingent Reward | 16 | I make clear what one can expect to receive when performance goals are achieved |
| Transactional Contingent Reward | Contingent Reward | 35 | I express satisfaction when others meet expectations |
| Transactional Manage by Exception | Monitors Deviations & Mistakes | 4 | I focus attention on irregularities, mistakes, exceptions, and deviations from standards |
| Transactional Manage by Exception | Monitors Deviations & Mistakes | 22 | I concentrate my full attention on dealing with mistakes, complaints, and failures |
| Transactional Manage by Exception | Monitors Deviations & Mistakes | 24 | I keep track of all mistakes |
| Transactional Manage by Exception | Monitors Deviations & Mistakes | 27 | I direct my attention toward failures to meet standards |
| Transactional Manage by Exception | Fight Fires | 3 | I fail to interfere until problems become serious |
| Transactional Manage by Exception | Fight Fires | 12 | I wait for things to go wrong before taking action |
| Transactional Manage by Exception | Fight Fires | 17 | I show that I am a firm believer in "If it ain't broke, don't fix it." |
| Transactional Manage by Exception | Fight Fires | 20 | I demonstrate that problems must become chronic before I take action |
| Transactional Manage by Exception | Avoids Involvement | 5 | I avoid getting involved when important issues arise |
| Transactional Manage by Exception | Avoids Involvement | 7 | I am absent when needed |
| Transactional Manage by Exception | Avoids Involvement | 28 | I avoid making decisions |
| Transactional Manage by Exception | Avoids Involvement | 33 | I delay responding to urgent questions |

Figure 25 MLQ Multi Factor Leadership showing questions related to the respective Four Transactional leadership subscales.

| Leadership Styles | ALQ LEADERSHIP VARIABLES | Question N | Questions |
|---|---|---|---|
| Authentic | Self-awareness | 1 | As a leader, I say exactly what I mean |
| Authentic | Self-awareness | 2 | As a leader, I admit mistakes when they are made. |
| Authentic | Self-awareness | 3 | As a leader, I encourage everyone to speak their mind. |
| Authentic | Self-awareness | 4 | As a leader, I tell you the hard truth. |
| Authentic | Transparency | 5 | As a leader, I display emotions exactly in line with feelings. |
| Authentic | Transparency | 6 | As a leader, I demonstrate beliefs that are consistent with actions. |
| Authentic | Transparency | 7 | As a leader, I make decisions based on my core values |
| Authentic | Transparency | 8 | As a leader, I ask you to take positions that support your core values |
| Authentic | Ethical/Moral | 9 | As a leader, I make difficult decisions based on high standards of ethical conduct |
| Authentic | Ethical/Moral | 10 | As a leader, I solicit views that challenge my deeply held positions |
| Authentic | Ethical/Moral | 11 | As a leader, I analyze relevant data before coming to a decision |
| Authentic | Ethical/Moral | 12 | As a leader, I listen carefully to different points of view before coming to conclusions |
| Authentic | Balanced Processing | 13 | As a leader, I seek feedback to improve interactions with others |
| Authentic | Balanced Processing | 14 | As a leader, I accurately describe how others view my capabilities |
| Authentic | Balanced Processing | 15 | As a leader, I know when it is time to reevaluate my position on important issues |
| Authentic | Balanced Processing | 16 | As a leader, I show I understand how specific actions impact others |

Figure 26 ALQ showing questions related to the respective Four Authentic leadership subscales.

| Leadership Effectiveness | MLQ LEADERSHIP VARIABLES | Question N | Questions |
|---|---|---|---|
| Leadership Effectiveness | Extra Effort from Followers | 39 | I get others to do more than they expected to do |
| Leadership Effectiveness | Extra Effort from Followers | 42 | I heighten others' desire to succeed |
| Leadership Effectiveness | Extra Effort from Followers | 44 | I increase others' willingness to try harder |
| Leadership Effectiveness | Productivity | 37 | I am effective in meeting others' job-related needs |
| Leadership Effectiveness | Productivity | 40 | I am effective in representing others to higher authority |
| Leadership Effectiveness | Productivity | 43 | I am effective in meeting organizational requirements |
| Leadership Effectiveness | Productivity | 45 | I lead a group that is effective |
| Leadership Effectiveness | Followers' Satisfaction with Leaders | 38 | I use methods of leadership that are satisfying |
| Leadership Effectiveness | Followers' Satisfaction with Leaders | 41 | I work with others in a satisfactory way |

Figure 27 MLQ Multi Factor Leadership Questionnaires showing questions related to the respective Leadership Effectiveness outcomes.

| AGGREGATED MLQ DATA POINTS | | | | | | |
|---|---|---|---|---|---|---|
| Name | Transformational Leadership | Transactional Leadership - Contingent Rewards | Transactional Leadership - Manage by Exception | Outcomes of Leadership - Generate Effort EE | Outcomes of Leadership - Productive EFF | Outcomes of Leadership - Generate Satisfaction SAT |
| Mary | 2.75 | 3.00 | 1.89 | 2.78 | 2.88 | 2.86 |

Figure 28: MLQ Multi Factor Leadership subscales data points.

| AGGREGATED ALQ DATA POINTS | | | | |
|---|---|---|---|---|
| Self Awareness | Transparency | Ethical/Moral | Balanced Processing | Authentic Leadership |
| 3.25 | 3.25 | 3.00 | 3.50 | 3.25 |

Figure 29: ALQ Authentic leadership subscales data points.

### 3.11 Test for Level of Reliability of Scales with Cronbach Alpha

As advised by Nunnaly (1967), a value of more than 0.7 for alpha Cronbach is considered acceptable. To test and confirm the level of reliability of the measurement scales, we derived the following Cronbach's α:for MLQ (0.94), ALQ (0.96) and MAAS (0.85); whilst criterion validates vary for satisfaction with leader (0.90), productivity (0.91) and motivating extra effort (0.92) at Time 0. Separately, Time 2 showed higher Cronbach's α for MLQ (0.97), ALQ (0.98) and MAAS (0.93); whilst criterion validates vary for satisfaction with leader (0.90), productivity (0.93) and motivating extra effort (0.93).

### 3.12 Discriminant Validity: Presentation Course Feedback Questionnaire

We used the presentation feedback questionnaire to determine discriminant validity of the quality of the training and coaching held between the two courses. Control group leaders who attended training on presentation skills were asked to complete a short 5-minute Presentation Course Feedback Questionnaire, on the last day of training on the effectiveness of presentation training to their adoption of presentation skills (Please refer to Appendix F), using the 1-5 scale indicated below.

1 Highly positive 2 Positive 3 Neutral 4 Negative 5 Strongly negative

1. How do you rate the usefulness of the tools and techniques imparted during training, in enhancing your presentation effectiveness?

2. How would you rate the effectiveness of the training in boosting your confidence to present to an audience?

3. Are you better prepared to take and respond to spontaneous questions?

4. Are you better equipped to engage your audience with your tonality, choice of words and body language?

5. Do you find the structured approach helpful to your next presentation delivery?

The feedback showed ratings received from participants of the Control group averaging at between positive and highly positive specifically for the impartation of Presentation Skills.

| Q1 Average Rating | Q2 Average Rating | Q3 Average Rating | Q4 Average Rating | Q5 Average Rating | Overall Average Rating |
|---|---|---|---|---|---|
| 1.5 | 1.8 | 2.0 | 1.7 | 1.8 | 1.8 |

Figure 30: Average feedback rating scores for Presentation Course Conducted

## 3.13 Conclusion

This chapter elaborated in detail the empirical research methods used to analyze the data collected at Time 0 and Time 2. First, I presented on the reasoning for the selection of the empirical field quasi-experiment research design. Followed by a discussion on the process of non-random sample selection process with detailed illustrations on the demographics of the participants and the other raters. Next, in depth tests were conducted to ensure fidelity of MBP adhered to Onken et al.'s (2014) Six Stage Fidelity Test model; and that the robustness of the MBP curriculum were achieved by referring to Crane's et al.'s (2017) framework of essential

warp and flexible weft ingredients. Finally, a detailed discussion of the measurement instruments used in the study was made on Multi Factor Leadership Questionnaire (Bass & Avolio's, 1990), Authentic Leadership Questionnaire (Walumbwa et al., 2008) and Mindful Attention Awareness Scale (Brown and Ryan's, 2003) and Dynamic Environment with Jaworski & Kohli (1993).

Complete versions of the questionnaires are attached in the appendices. Each of these questionnaires were used for data collection and analysis. Chapter 4 will discuss the findings in detail, with thorough interpretation of the results. Finally, this dissertation concludes in Chapter 5 with a discussion on the research study's contribution to literature, practical implications and our recommendations for future research.

# CHAPTER 4: RESULTS, ANALYSIS AND DISCUSSION

This chapter presented, analyzed and discussed the results derived from applying statistical data analysis on the data collected, using the measurement questionnaires highlighted in Chapter 3 and with reference to literature reviewed in Chapter 2.

## 4.1 Approach to Results, Data Analysis and Discussion

We started this chapter by establishing Raters Consistency and ensured raters' consistency remained substantially intact between T0 and T2. In addition, a Levene Test was conducted and confirmed that there were no statistically significant differences between the participants of both conditions.

Next, the data was analyzed in depth using several parametric statistical approaches. Mixed Factorial ANOVA model (Tabachnick & Fidell, 2007) was used to compare the rate of change in leadership behavior ratings between the two categorical intervention and control groups, pre-intervention and post intervention at Time 2 viz a viz Time 0, in a dynamic business environment. Thus, enabling the analysis of both within-subject changes in the Dependent Variables (DV) over time and between group differences by examining the extent of change on the resulting DV. In addition, Linear Regression analysis was conducted to test the predictive relationships of the state of mindfulness, leadership behavior ratings with leadership effectiveness. We will review how these statistical methods were used to analyze data and discuss the results under each Hypotheses.

## 4.2 Raters Consistency Check

The core aspect of this study is to examine the possible impacts that Mindfulness based training and coaching program had on leadership behaviors and leadership effectiveness. It is

important to establish rater consistency on the results derived and to ensure the validity of the study. Table 1 shows the 360 Rater consistency substantially remained intact over time at T0 and T2. There were three raters who left the leadership intervention group and one from control group at T2; which arose as a result of their resignations from the organization. We have removed their ratings given to leaders at T0 and T2 from this study.

| Number of individuals By Source | 360 Rater Information | | 360 Rater Information | |
|---|---|---|---|---|
| | Leadership Time 0 | Leadership Time 2 | Presentation Time 0 | Presentation Time 2 |
| Total number of raters | 57 | 57 | 55 | 55 |
| Attrition of raters | 3 | 3 | 1 | 1 |
| Rater consistency | 95% | 95% | 98.2% | 98.2% |

Table 1: 360 Rater consistency overtime at T0 and T2.

### 4.3 Levene Test Check

Before testing hypotheses, this study conducted a Levene test to check that there were no statistically significant differences between the participants enrolled in both the intervention and control groups with regards to the levels of other raters' rated leadership behaviors, leaders' effectiveness and mindfulness scores (Derue, 2011). Although mean differences were present at T2 due to the proposed effect of MBP, still there were no significant variances around these means noted (Derue, 2011). A comparison of the Levene test F values shown in Table 2, showed the leadership ratings at T0 and T2 in Table 2 support the assertion that there was no violation of the assumption of normality, linearity and homogeneity of variance.

| Test of Homogeneity of Variances | | | | | |
|---|---|---|---|---|---|
| | | Levene Statistic | df1 | df2 | Sig. |
| T0Transformational | Based on Mean | 0.007 | 1 | 58 | 0.932 |
| T2Transformational | Based on Mean | 3.469 | 1 | 58 | 0.068 |
| T0ContingentReward | Based on Mean | 0.006 | 1 | 58 | 0.940 |
| T2ContingentReward | Based on Mean | 2.453 | 1 | 58 | 0.123 |
| T0Transactional | Based on Mean | 2.189 | 1 | 58 | 0.144 |
| T2Transactional | Based on Mean | 0.197 | 1 | 58 | 0.659 |
| T0Authentic | Based on Mean | 0.370 | 1 | 58 | 0.545 |
| T2Authentic | Based on Mean | 2.703 | 1 | 58 | 0.106 |
| T0MAAS | Based on Mean | 0.005 | 1 | 58 | 0.945 |
| T2MAAS | Based on Mean | 1.513 | 1 | 58 | 0.224 |
| T0Satisfaction With Leader | Based on Mean | 0.316 | 1 | 58 | 0.576 |
| T2Satisfaction With Leader | Based on Mean | 3.092 | 1 | 58 | 0.084 |
| T0Productivity | Based on Mean | 0.567 | 1 | 58 | 0.454 |
| T2Productivity | Based on Mean | 3.773 | 1 | 58 | 0.057 |
| T0Employee Effort | Based on Mean | 0.651 | 1 | 58 | 0.423 |
| T2Employee Effort | Based on Mean | 6.298 | 1 | 58 | 0.015 |

Table 2: Levene Test on other ratings means at T1 and T2 for intervention and control groups.

## 4.4 Results, Data Analysis and Discussion

### 4.4.1 Descriptive Statistics on Means, T values and P values

| | Intervention Group | | Control Group | | Intervention Vs Control | Intervention Group | | Control Group | | Intervention Vs Control | Intervention Group | | Control Group | | Intervention Group | | Control Group | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Self Ratings** | **T0** | | **T0** | | **T0** | **T2** | | **T2** | | **T2** | **T2 vs T0** | | **T2 vs T0** | | **T2 vs T0** | | **T2 vs T0** | |
| **Leadership Behaviors** | Mean | SD | Mean | SD | Difference | Mean | SD | Mean | SD | Difference | Mean | SD | Mean | SD | t | p | t | p |
| Transformational | 3.10 | 0.46 | 2.82 | 0.65 | 0.28 | 3.15 | 0.47 | 2.78 | 0.64 | 0.37 | 0.05 | 0.47 | (0.03) | 0.49 | 0.62 | 0.54 | (0.39) | 0.70 |
| Transactional | | | | | | | | | | | | | | | | | | |
| Contingent Reward | 3.16 | 0.65 | 2.63 | 0.88 | 0.53 | 3.15 | 0.59 | 2.65 | 0.73 | 0.50 | (0.01) | 0.56 | 0.02 | 0.61 | (0.08) | 0.94 | 0.22 | 0.82 |
| Active Manage by Exception | 1.50 | 0.49 | 1.20 | 0.48 | 0.29 | 1.36 | 0.28 | 1.32 | 0.64 | 0.04 | (0.13) | 0.47 | 0.12 | 0.53 | (1.55) | 0.13 | 1.20 | 0.24 |
| Authentic | 3.26 | 0.44 | 3.12 | 0.49 | 0.14 | 3.21 | 0.39 | 3.02 | 0.55 | 0.18 | (0.06) | 0.42 | (0.10) | 0.45 | (0.77) | 0.45 | (1.21) | 0.24 |
| **Leadership Effectiveness** | | | | | | | | | | | | | | | | | | |
| Extra Effort from Followers | 2.79 | 0.83 | 2.71 | 0.82 | 0.08 | 2.92 | 0.56 | 2.58 | 0.78 | 0.34 | 0.13 | 0.74 | (0.13) | 0.68 | 1.00 | 0.33 | (1.08) | 0.29 |
| Productivity | 3.07 | 0.59 | 2.66 | 0.86 | 0.41 | 3.13 | 0.57 | 2.84 | 0.69 | 0.29 | 0.07 | 0.52 | 0.18 | 0.73 | 0.70 | 0.49 | 1.38 | 0.18 |
| Followers' Satisfaction with Leaders | 3.22 | 0.73 | 2.85 | 0.74 | 0.37 | 3.08 | 0.57 | 2.97 | 0.59 | 0.12 | (0.13) | 0.68 | 0.12 | 0.74 | (1.07) | 0.29 | 0.86 | 0.39 |
| Mindfulness | | | | | | | | | | | | | | | | | | |
| MAAS Score | 4.42 | 0.66 | 4.51 | 0.64 | (0.10) | 4.45 | 0.71 | 4.36 | 0.83 | 0.09 | 0.03 | 0.75 | (0.15) | 0.74 | 0.25 | 0.81 | (1.11) | 0.28 |

Table 3: Means and standard deviations of Self-Ratings Pre-Training Intervention (T0) and Post-Training (T2) for 2 conditions.

| | Intervention Group | | Control Group | | Intervention Vs Control | Intervention Group | | Control Group | | Intervention Vs Control | Intervention Group | | Control Group | | Intervention Group | | Control Group | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **360 Ratings** | **T0** | | **T0** | | **T0** | **T2** | | **T2** | | **T2** | **T2 vs T0** | | **T2 vs T0** | | **T2 vs T0** | | **T2 vs T0** | |
| **Leadership Behaviors** | Mean | SD | Mean | SD | Mean | Mean | SD | Mean | SD | Mean | Mean | SD | Mean | SD | t | p | t | p |
| Transformational | 2.57 | 0.53 | 2.35 | 0.61 | 0.22 | 2.86 | 0.41 | 2.45 | 0.70 | 0.41 | 0.30 | 0.37 | 0.09 | 0.43 | 3.96 | ***0.000 | 0.53 | 0.60 |
| Transactional | | | | | | | | | | | | | | | | | | |
| Contingent Reward | 2.64 | 0.57 | 2.36 | 0.61 | 0.28 | 2.84 | 0.45 | 2.42 | 0.71 | 0.42 | 0.20 | 0.39 | 0.06 | 0.43 | 2.65 | **0.013 | 0.58 | 0.57 |
| Active Manage by Exception | 1.68 | 0.31 | 1.60 | 0.43 | 0.09 | 1.69 | 0.44 | 1.72 | 0.42 | (0.03) | 0.01 | 0.38 | 0.12 | 0.35 | 0.13 | 0.898 | 1.64 | 0.11 |
| Authentic | 2.66 | 0.51 | 2.40 | 0.64 | 0.26 | 2.96 | 0.43 | 2.47 | 0.69 | 0.48 | 0.30 | 0.42 | 0.07 | 0.57 | 3.62 | ***0.001 | 0.53 | 0.60 |
| **Leadership Effectiveness** | | | | | | | | | | | | | | | | | | |
| Extra Effort from Followers | 2.59 | 0.64 | 2.27 | 0.87 | 0.31 | 2.80 | 0.50 | 2.39 | 0.89 | 0.41 | 0.21 | 0.60 | 0.11 | 0.61 | 1.76 | *0.088 | 0.82 | 0.42 |
| Productivity | 2.83 | 0.56 | 2.47 | 0.74 | 0.36 | 3.00 | 0.43 | 2.44 | 0.75 | 0.56 | 0.17 | 0.41 | (0.03) | 0.45 | 2.10 | **0.044 | (0.26) | 0.80 |
| Followers' Satisfaction with Leaders | 2.73 | 0.63 | 2.57 | 0.76 | 0.15 | 3.04 | 0.43 | 2.47 | 0.72 | 0.57 | 0.31 | 0.45 | (0.10) | 0.49 | 3.18 | ***0.003 | (0.87) | 0.39 |

Table 4: Means and standard deviations of Other-Ratings Pre-Training Intervention (T0) and Post-Training (T2) for 2 conditions.

*. Difference is significant at the 0.10 level (2-tailed)

**. Difference is significant at the 0.05 level (2-tailed)

***. Difference is significant at the 0.01 level (2-tailed)

| Self Ratings - 360 Ratings | Intervention Group | | Control Group | | Intervention Vs Control | Intervention Group | | Control Group | | Intervention Vs Control | Intervention Group | | Control Group | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | T0 | | T0 | | T0 | T2 | | T2 | | T2 | T2 vs T0 | | T2 vs T0 | |
| **Leadership Behaviors** | Mean | SD | Mean | SD | Mean | Mean | SD | Mean | SD | Mean | Mean | SD | Mean | SD |
| Transformational | 0.53 | 0.59 | 0.46 | 0.72 | 0.07 | 0.29 | 0.50 | 0.33 | 0.85 | (0.04) | (0.24) | 0.48 | (0.13) | 0.74 |
| Transactional | | | | | | | | | | | | | | |
| Contingent Reward | 0.52 | 0.73 | 0.26 | 0.85 | 0.26 | 0.31 | 0.62 | 0.23 | 0.86 | 0.08 | (0.33) | 0.47 | (0.04) | 0.78 |
| Active Manage by Exception | (0.19) | 0.58 | (0.40) | 0.66 | 0.21 | (0.33) | 0.52 | (0.40) | 0.77 | 0.07 | (0.07) | 0.40 | (0.01) | 0.66 |
| Authentic | 0.61 | 0.60 | 0.72 | 0.70 | (0.11) | 0.25 | 0.51 | 0.55 | 0.88 | (0.30) | (0.36) | 0.53 | (0.17) | 0.81 |
| **Leadership Effectiveness** | | | | | | | | | | | | | | |
| Extra Effort from Followers | 0.20 | 0.86 | 0.44 | 0.82 | (0.24) | 0.13 | 0.61 | 0.19 | 0.92 | (0.07) | (0.08) | 0.82 | (0.25) | 0.73 |
| Productivity | 0.24 | 0.72 | 0.19 | 0.97 | 0.05 | 0.13 | 0.62 | 0.40 | 0.94 | (0.27) | (0.10) | 0.61 | 0.21 | 0.80 |
| Followers' Satisfaction with Leaders | 0.49 | 0.97 | 0.28 | 0.98 | 0.21 | 0.04 | 0.67 | 0.49 | 0.98 | (0.45) | (0.45) | 0.70 | 0.22 | 0.90 |

Table 5: Difference in Means and Standard Deviations of Self vs Other Ratings Pre-Training Intervention (T0) and Post-Training (T2)

### 4.4.2 Analysis and Discussion on Mean of Leader's behaviors and leadership effectiveness

#### 4.4.2.1 Self Ratings Mean: Leader's behaviors and leadership effectiveness

Self-ratings for intervention group leadership behaviors and effectiveness scores as shown in Table 3 were higher at T0 versus T2 for transactional contingent reward, authentic leadership behaviors and employee satisfaction with their leadership frequency mean ratings. On the other hand, control group saw higher mean self-ratings for transformation, authentic leadership behaviors and ability to generate extra effort at T0 compared to T2. As Atwater et al. (2007, 2000) suggested these self-ratings dropped over time to be more realistic at T2, to be more accurate and aligned to others' perception over time as awareness of ratings by others increased. These conservative ratings could be a result of self-reflection and self-realization.

#### 4.4.2.2 Other Ratings: Leader's Behaviors and Leadership Effectiveness

Table 4 on 360 ratings compared to Table 3 on self-ratings illustrated that even though the mean values of self-ratings for leadership behaviors and effectiveness tapered in T2, there is still a tendency for participants in both intervention and control groups to have self-ratings on their leadership behaviors higher than 360 other ratings at both T0 and T2 as shown in Table 5; except for management by exception behaviors. This is consistent to observations from studies conducted by Alicke & Govorum (2006), Colvin et al. (1995), Dunning et al. (1989), Robins & Beer (2001) and Zuckerman et al. (2004), which showed that people tend to evaluate themselves more positively than other observers do.

Table 4 presented on other raters' means and standard deviations, which showed significant increases in other ratings across all leaders' transformational, authentic and transactional contingent reward leadership behaviors in both the intervention MBP and control groups at T2 vs T0, except for management by exception behaviors.

### 4.4.3 Analysis and Discussion on T Values and P Values Between Two Conditions

As presented in Table 4, the leadership effectiveness ratings at T2 for the intervention group found significant improvements in other ratings at T2 versus T0 for transformation ($t=3.96$, $p<0.01$); contingent reward ($t=2.65$, $p<0.05$); authentic ($t=3.62$, $p<0.01$) leadership behaviors; extra effort ($t=1.76$, $p<0.10$); productivity ($t=2.10$, $p<0.05$) and followers satisfaction with leader ($t=3.18$, $p<0.01$) leadership effectiveness ratings. In contrast, control group saw a non-significant increase T2 versus T0 for transformation ($t=0.53$, $p>0.10$); contingent reward ($t=0.58$, $p>0.10$); authentic ($t=0.53$, $p>0.10$) leadership behaviors and extra effort ($t=0.82$, $p>0.10$). Ratings even decreased at T2 versus T0 for control leaders' ability to generate productivity ($t=-0.26$, $p>0.10$) and garner followers' satisfaction with leader ($t=0.87$, $p>0.10$) leadership effectiveness ratings.

Table 4 showed that other raters gave lower ratings at T2 versus T1 on control group leaders' ability to enhance productivity and generate employee satisfaction with their leadership; implying that the leaders in control group could not sustain T0 initial leadership effectiveness ratings even after attending the training and 3 months' coaching program on their presentation and communication skills.

A significant part of the training and coaching intervention process in both conditions was to facilitate managers to recognize development needs. The control group participants focused on developing their presentation techniques. The training and coaching program for the control group facilitated participants to be aware of their capability to change their leadership behaviors to improve relationships with coworkers and to create positive impact at the workplace by observing and developing their presentation skills. While the intervention participants under MBP were encouraged to mindfully reflect on the elements of the leadership behavioral self- and other ratings derived. They were also introduced to the process of applying mindfulness techniques which could assist in honing participants' consciousness of their

existing leadership behaviors while identifying behavioral aspects to change throughout the duration of 3 months coaching. By mindfully recognizing habitual habits, participants were encouraged to analyze their past reactions, emotions and behaviors to identify and better understand what triggered targeted behaviors. Insights discovered from practice of mindfulness appeared to have enabled intervention group participants to attune alternative behaviors to sustain results and yield better responses from followers evidenced in Table 4.

Table 5 showed the differentials between means of self and other ratings at T0 vs T2; which illustrated the narrowing of the gap between the leaders' own ratings with other raters' perceptions, especially evident in all the variables for the intervention group viz a viz the control group. Results indicated initial evidence that MBP enabled intervention participants to be more mindful of other co-workers' perceptions of their behaviors, which could have led to greater fostering of transformational, contingent reward, authentic leadership behaviors and leaders' effectiveness outcomes compared to control group; while management by exception behavior was seen to increase at a lesser rate than the control group at T2.

The narrowing of the gap between means of self-ratings (blue line) and other-ratings (red line) was depicted in Figure 31 for the intervention group, and in Figure 32 for the control group below, using data drawn from Tables 3 and 4. The figures show prominent closing of gap between means of other raters and self-raters at T2 (on the right) compared to T0 (on the left) for both groups. The closing of the gap was more obvious for the intervention group shown in Table 31 than the control group shown in Figure 32.

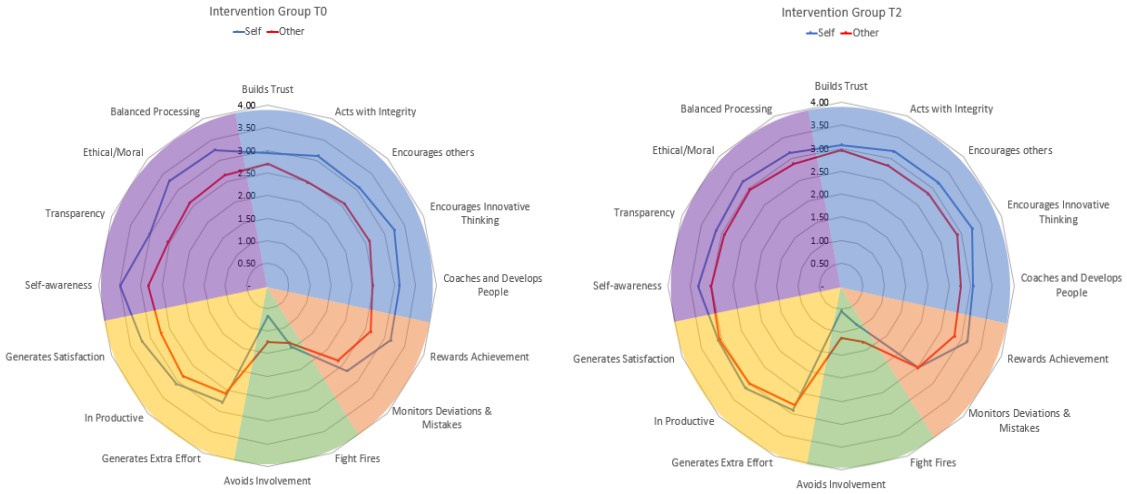



Figure 31: MBP Intervention group : Means of Other Ratings for Leaders' Behaviors and Leadership effectiveness at T0 and T2

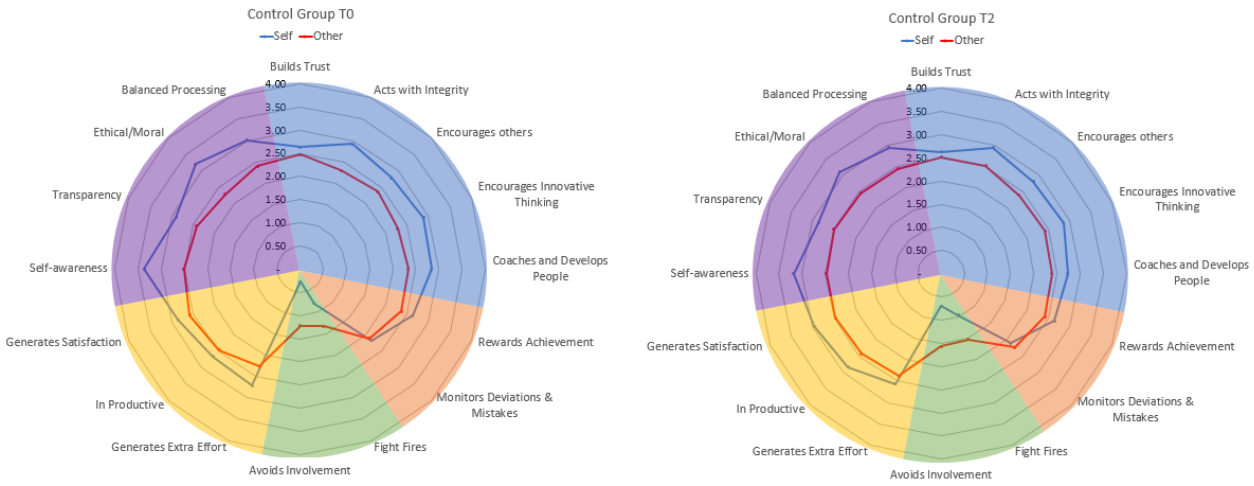



Figure 32: Control Group: Means of Other Ratings for Leaders' Behaviors and Leadership effectiveness at T0 and T2

## 4.4.4 Analysis of T value, P value and Mean for Self-Rated MAAS

| | Intervention Group | | Control Group | | Intervention Group | | Control Group | | Intervention Group | | Control Group | | Intervention Group | | Control Group | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Self Ratings | T0 | | T0 | | T2 | | T2 | | T2 vs T0 | | T2 vs T0 | | T2 vs T0 | | T2 vs T0 | |
| Mindfulness | Mean | SD | Mean | SD | Mean | SD | Mean | SD | Mean | SD | Mean | SD | t | p | t | p |
| MAAS Score | 4.42 | 0.66 | 4.51 | 0.64 | 4.45 | 0.71 | 4.36 | 0.83 | 0.03 | 0.75 | (0.15) | 0.74 | 0.25 | 0.81 | (1.11) | 0.28 |

Table 6: Means and Standard deviations of Self-Rated MAAS for both conditions

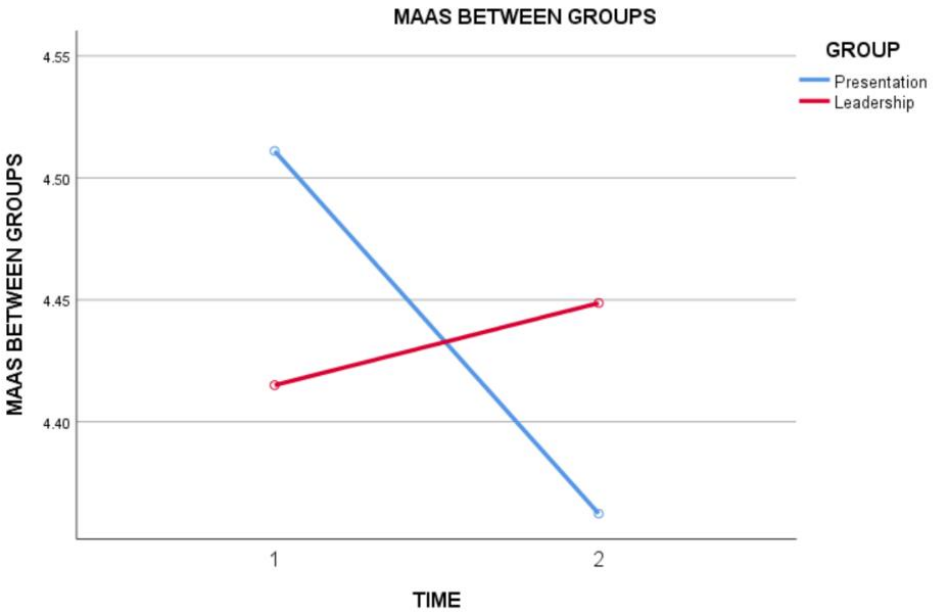



Figure 33: Means of MAAS at T0 vs T2 for both conditions

Table 6 and Figure 33 above both illustrated that MAAS mean score for intervention group leaders has increased only marginally from T0 at (M=4.42, SD=0.66), to (M=4.45, SD=0.71) at T2 after the 3 months of MBP training and coaching. The initial evidence showed little progress in MAAS scores after that 3 months of MBP; suggesting that the training and coaching duration in this study may be too short a gestation for practice of mindfulness to bring significant augmentation effect on MAAS. On the other hand, this finding seems to support suggestion by Atwater et al., (2007, 2000) that self-ratings tend to reduce rather than increase, to become more accurate and realistic over time as self-awareness and acknowledgement increase; as the leader align closer to other's perception of their behaviors. This is evident in the narrowing of gap between the means of other raters' ratings with self-ratings in Table 5 with the narrowing of the gap depicted visually in Figure 31. In contrast, the control group which was not introduced the practice of mindfulness, showed MAAS score reducing even further as expected from (M=4.51, SD0.64) at T0 to (M=4.36, SD0.83) at T2 as presented in Figure 32.

| | Intervention Vs Control | | Intervention Vs Control | | Intervention Vs Control | |
|---|---|---|---|---|---|---|
| | T0 | | T2 | | T2-T0 | |
| | t | p | t | p | t | p |
| MAAS Score | -0.57 | 0.570 | 0.43 | 0.667 | 0.95 | 0.347 |

Table 7: T values and p-values of T-test on Self Rated MAAS

Table 7 presented MAAS scores marginally improving from T0 (t=-0.57, p=0.57) to (t=0.43, p=0.667) at T2 for the intervention group viz a viz control group. Even though the MAAS T values showed non-significant difference in t value (t=0.95, p=0.347) between the two conditions group at T2 vs T0, it appeared that MBP training and coaching intervention established a mindful awareness that sustained during the study for the intervention group as compared to the decreasing MAAS score for the control group.

Similar to the study on mindfulness training conducted by Leroy (2013), intervention group leaders in MBP went through a process of change in emotional state. In my experience on the field with the intervention group participants, leaders who embraced the concept of mindfulness became more self-aware of the impact of their leadership behaviors in motivating themselves and their employees. It was observed that leaders went through four stages of change, from self-awareness which led to self-realization followed then by self-regulation and a few attained self-actualization.


Figure 34: Process of Self Interaction with Mindfulness

The intervention group leaders became even more reflective of their behaviors enacted, embracing their vulnerability and became humble in their assessment of their own ability after completing MBP; as evidenced by the closing in on the gap in Figure 31. This observation supplemented the evidence seen in explaining for the augmented improved leadership behaviors means derived from *other raters' ratings* in Table 4 for the intervention group, even though *self-rated* MAAS appeared not to have significantly increased.

It was noted that the questions posed in MAAS may not befit the workplace; for example, MAAS did not measure the leaders' ability to decenter or be non-judgmental. In addition, MAAS is a self-report measure state of mindfulness that did not account for the pre-existing state of mindfulness and varying state of experience with practice of mindfulness (Manuel et al., 2017).

Furthermore, it was observed during coaching sessions that increased practice of mindfulness encouraged introspection. This resulted in MBP participants rating themselves in a modest manner with MAAS score barely changing from Time 0 Pre MBP to Time 2 Post-MBP; while control group leaders' MAAS diminished without receiving training on the practice of mindfulness. Hence, MAAS scale may not necessarily correlate with leaders' changed state of mindfulness, as seen in Table 6 above.

This research study mitigated some of the concerns related to the application of MAAS measurement scale at the work place, by measuring mindfulness indirectly (Brewer et al., 2011). We examined how the mindfulness-based leadership training can lead to changes in leaders' behaviors, as observed by self and other raters with use of 360 leadership questionnaires from Bass & Avolio's MLQ (1990) and Walumbwa et al.'s ALQ (2007).

Results derived from T Tests showed that MBP leaders aligned their ratings closer to other raters' perceptions viz a viz control group at T2, as shown by the convergence in spider Figure 31 above.

### 4.4.5 Descriptive Statistics on Correlations

Correlations at T0 and T2 for self-rating data for both groups relating to mindfulness, transformational, transactional, authentic behaviors and leadership outcomes at pre-intervention and post-intervention were presented in Table 8 for Self-Ratings correlations and Table 9 comprise correlations of Other Ratings for both groups respectively.

### 4.4.5.1 Analysis on Self-Rated Correlations T0 vs T2

| INTERVENTION MBP GROUP | | | | | | | | | CONTROL PRESENTATION GROUP | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pearson Correlation | | Transformational | Contingent Reward | Transactional | Authentic | Satisfaction With Leader | Productivity | Employee Effort | Transformational | Contingent Reward | Transactional | Authentic | Satisfaction With Leader | Productivity | Employee Effort |
| Transformational | T0 | 1.000 | 0.699** | -0.274 | 0.710** | 0.772** | 0.724** | 0.752** | 1.000 | 0.816** | 0.106 | 0.579** | 0.488** | 0.755** | 0.749** |
| | T2 | 1.000 | 0.692** | -0.063 | 0.714** | 0.441* | 0.612** | 0.601** | 1.000 | 0.857** | 0.116 | 0.626** | 0.671** | 0.794** | 0.763** |
| Contingent Reward | T0 | 0.699** | 1.000 | -0.285 | 0.682** | 0.601** | 0.815** | 0.586** | 0.816** | 1.000 | 0.199 | 0.537** | 0.423* | 0.816** | 0.821** |
| | T2 | 0.692** | 1.000 | 0.101 | 0.633** | 0.469** | 0.649** | 0.383* | 0.857** | 1.000 | 0.204 | 0.607** | 0.637** | 0.739** | 0.707** |
| Transactional | T0 | -0.274 | -0.285 | 1.000 | -0.290 | -0.271 | -0.421* | -0.392* | 0.106 | 0.199 | 1.000 | 0.260 | 0.153 | 0.060 | 0.188 |
| | T2 | -0.063 | 0.101 | 1.000 | -0.110 | -0.283 | -0.028 | 0.075 | 0.116 | 0.204 | 1.000 | -0.154 | -0.144 | -0.078 | 0.059 |
| Authentic | T0 | 0.710** | 0.682** | -0.290 | 1.000 | 0.577** | 0.688** | 0.620** | 0.579** | 0.537** | 0.260 | 1.000 | 0.336 | 0.374* | 0.474** |
| | T2 | 0.714** | 0.633** | -0.110 | 1.000 | 0.366* | 0.626** | 0.280 | 0.626** | 0.607** | -0.154 | 1.000 | 0.587** | 0.594** | 0.523** |
| Satisfaction With Leader | T0 | 0.772** | 0.601** | -0.271 | 0.577** | 1.000 | 0.591** | 0.552** | 0.488** | 0.423* | 0.153 | 0.336 | 1.000 | 0.559** | 0.463** |
| | T2 | 0.441* | 0.469** | -0.283 | 0.366* | 1.000 | 0.746** | 0.595** | 0.671** | 0.637** | -0.144 | 0.587** | 1.000 | 0.856** | 0.724** |
| Productivity | T0 | 0.724** | 0.815** | -0.421* | 0.688** | 0.591** | 1.000 | 0.688** | 0.755** | 0.816** | 0.060 | 0.374* | 0.559** | 1.000 | 0.770** |
| | T2 | 0.612** | 0.649** | -0.028 | 0.626** | 0.746** | 1.000 | 0.578** | 0.794** | 0.739** | -0.078 | 0.594** | 0.856** | 1.000 | 0.889** |
| Employee Effort | T0 | 0.752** | 0.586** | -0.392* | 0.620** | 0.552** | 0.688** | 1.000 | 0.749** | 0.821** | 0.188 | 0.474** | 0.463** | 0.770** | 1.000 |
| | T2 | 0.601** | 0.383* | 0.075 | 0.280 | 0.595** | 0.578** | 1.000 | 0.763** | 0.707** | 0.059 | 0.523** | 0.724** | 0.889** | 1.000 |

Table 8: Self-Ratings Correlations T0 vs T2 for both conditions

*. Difference is significant at the 0.10 level (2-tailed)

**. Difference is significant at the 0.05 level (2-tailed)

Table 8 showed at both T0 and T2 for both conditions, every self-rating leadership behavior and leadership outcome variables, to be consistently significantly correlated with each variable, except for transactional manage by exception leadership behavior. These leadership behaviors appear to work synergistically together to bring about significant leadership effectiveness; suggesting that the dynamics among the combined leadership behaviors adopted may in turn affect leadership effectiveness, except between authentic behavior with employee effort in the intervention group.

### 4.4.5.2 Analysis on Other-Rated Correlations T0 vs T2

| INTERVENTION MBP GROUP | | | | | | | | | CONTROL PRESENTATION GROUP | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Correlations | | | | | | | | | Correlations | | | | | | |
| Pearson Correlation | | Transformational | Contingent Reward | Manage by Exception | Authentic | Satisfaction With Leader | Productivity | Employee Effort | Transformational | Contingent Reward | Manage by Exception | Authentic | Satisfaction With Leader | Productivity | Employee Effort |
| Transformational | T0 | 1.000 | 0.871*** | 0.005 | 0.919*** | 0.858*** | 0.877*** | 0.682*** | 1.000 | 0.915*** | -0.411** | 0.883*** | 0.852*** | 0.882*** | 0.782*** |
| | T2 | 1.000 | 0.866*** | -0.114 | 0.929*** | 0.842*** | 0.893*** | 0.847*** | 1.000 | 0.911*** | 0.258 | 0.877*** | 0.881*** | 0.888*** | 0.882*** |
| Contingent Reward | T0 | 0.871*** | 1.000 | 0.174 | 0.759*** | 0.705*** | 0.795*** | 0.761*** | 0.915*** | 1.000 | -0.412** | 0.899*** | 0.776*** | 0.814*** | 0.732*** |
| | T2 | 0.866*** | 1.000 | -0.054 | 0.796*** | 0.748*** | 0.756*** | 0.742*** | 0.911*** | 1.000 | 0.171 | 0.887*** | 0.915*** | 0.900*** | 0.860*** |
| Manage by Exception | T0 | 0.005 | 0.174 | 1.000 | 0.006 | -0.156 | 0.047 | 0.265 | -0.411** | -0.412** | 1.000 | -0.477*** | -0.327* | -0.273 | -0.062 |
| | T2 | -0.114 | -0.054 | 1.000 | -0.089 | -0.082 | 0.066 | -0.010 | 0.258 | 0.171 | 1.000 | 0.279 | 0.128 | 0.190 | 0.260 |
| Authentic | T0 | 0.919*** | 0.759*** | 0.006 | 1.000 | 0.876*** | 0.902*** | 0.707*** | 0.883*** | 0.899*** | -0.477*** | 1.000 | 0.713*** | 0.800*** | 0.665*** |
| | T2 | 0.929*** | 0.796*** | -0.089 | 1.000 | 0.837*** | 0.875*** | 0.870*** | 0.877*** | 0.887*** | 0.279 | 1.000 | 0.919*** | 0.942*** | 0.894*** |
| Satisfaction With Leader | T0 | 0.858*** | 0.705*** | -0.156 | 0.876*** | 1.000 | 0.899*** | 0.675*** | 0.852*** | 0.776*** | -0.327* | 0.713*** | 1.000 | 0.954*** | 0.765*** |
| | T2 | 0.842*** | 0.748*** | -0.082 | 0.837*** | 1.000 | 0.803*** | 0.820*** | 0.881*** | 0.915*** | 0.128 | 0.919*** | 1.000 | 0.937*** | 0.908*** |
| Productivity | T0 | 0.877*** | 0.795*** | 0.047 | 0.902*** | 0.899*** | 1.000 | 0.810*** | 0.882*** | 0.814*** | -0.273 | 0.800*** | 0.954*** | 1.000 | 0.783*** |
| | T2 | 0.893*** | 0.756*** | 0.066 | 0.875*** | 0.803*** | 1.000 | 0.868*** | 0.888*** | 0.900*** | 0.190 | 0.942*** | 0.937*** | 1.000 | 0.936*** |
| Employee Effort | T0 | 0.682*** | 0.761*** | 0.265 | 0.707*** | 0.675*** | 0.810*** | 1.000 | 0.782*** | 0.732*** | -0.062 | 0.665*** | 0.765*** | 0.783*** | 1.000 |
| | T2 | 0.847*** | 0.742*** | -0.010 | 0.870*** | 0.820*** | 0.868*** | 1.000 | 0.882*** | 0.860*** | 0.260 | 0.894*** | 0.908*** | 0.936*** | 1.000 |

Table 9: Other Raters Rated Correlations T0 vs T2 for Intervention Group

*. Difference is significant at the 0.10 level (2-tailed)

**. Difference is significant at the 0.05 level (2-tailed)

***. Difference is significant at the 0.01 level (2-tailed)

Table 9 showed the correlations for Other-rated leadership behaviors and leadership outcomes variables for both groups at both T0 and T2 remained significantly correlated, only with the exception of transactional manage by exception leadership behaviors.

### 4.4.5.3 Discussion on Correlations T0 vs T2

Findings in Table 9 suggest that training and coaching intervention methods did facilitate participants for both groups to increase frequency in adoption of leadership behaviors that led to significantly improved leadership effectiveness perceived by other raters over time at T2. Next, we will examine the extent of augmentation derived through training and coaching intervention method in the respective groups, when we perform the ANOVA and Regression statistical tests.

## 4.5 Testing of Hypotheses

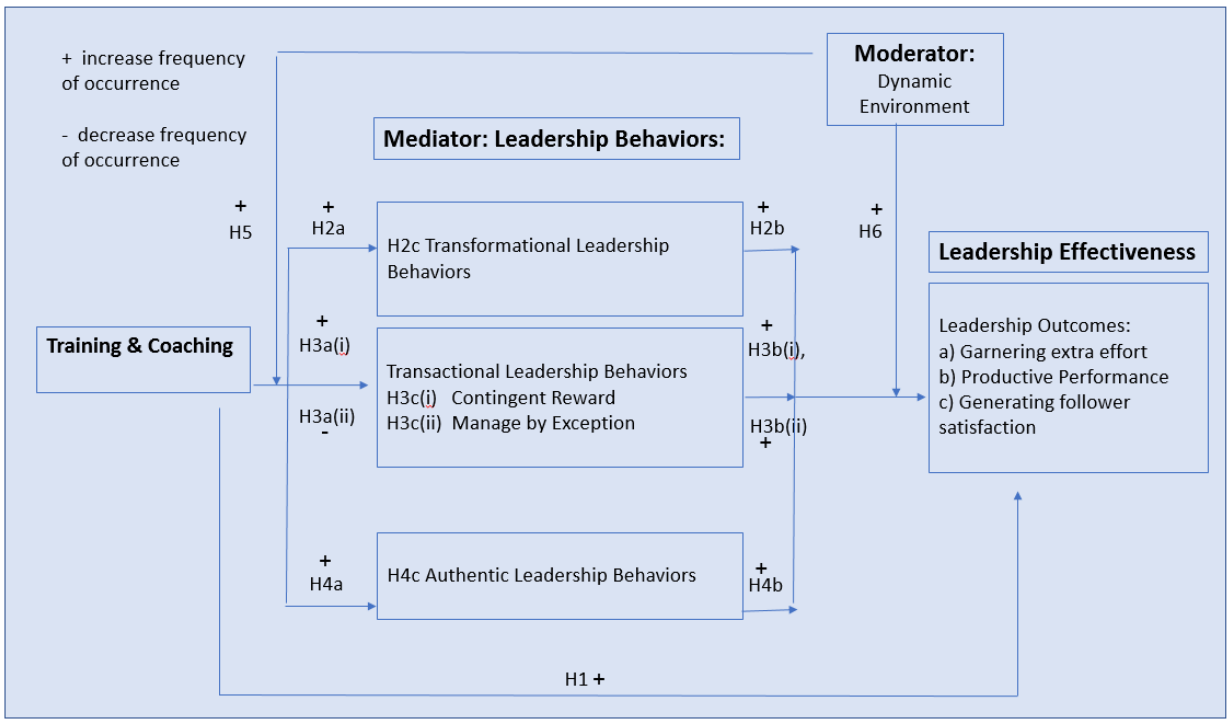



Figure 35: Theoretical Framework of Constructs

### 4.5.1 Hypothesis 1: Impact of MBP on Leadership Effectiveness

To evaluate whether the MBP leadership training and coaching has a significant impact on the three Leader's effectiveness in generating extra effort, productivity and followers' satisfaction with leadership as outcome variables in Hypothesis 1 shown in Figure 35, two tests would be conducted. Firstly, the t values were computed to assess the relationship between the variables based on a normal probability distribution at 95% confidence level. The independent sample t test measured the difference in the mindfulness, authentic, transactional and transformational leadership behaviors as well as leadership effectiveness scores at T0 and T2 for MBP leadership versus presentation groups. Secondly, univariate ANOVA tests on the follower perceptions of the leaders' behaviors and leadership effectiveness were conducted. We start with the review of T Tests results in this section followed with ANOVA main effect and interaction effects test results for the two groups over time in the next section. Hypothesis

1 predicted that MBP leadership training would be associated with improved Leader's effectiveness ratings post-intervention at T2, for 3 dimensions namely productivity, extra effort and followers' satisfaction with leader.

#### 4.5.1.1 Other Ratings on Leadership Effectiveness over Time for 2 Conditions

| Other Ratings | Intervention Group T2 vs T0 | | Control Group T2 vs T0 | |
|---|---|---|---|---|
| **Leadership Effectiveness** | t | p | t | p |
| Extra Effort from Followers | 1.76 | *0.088 | 0.82 | 0.42 |
| Productivity | 2.10 | **0.044 | (0.26) | 0.80 |
| Followers' Satisfaction with Leaders | 3.18 | ***0.003 | (0.87) | 0.39 |

Table 10: Other Ratings: leadership Outcomes T2 vs T0 for 2 conditions.

*. Difference is significant at the 0.10 level (2-tailed)

**. Difference is significant at the 0.05 level (2-tailed)

***. Difference is significant at the 0.01 level (2-tailed)

Table 10 showed significant augmentation effects on T values within intervention group at T2 versus T0, after participants have received mindfulness-based leadership training and coaching for extra effort (t=1.76, p<.10), productivity (t=2.10, p<0.5), and followers' satisfaction with leaders (t=3.18, p<<0.01). In contrast, control group T value increased marginally at (t=0.82, p= p>0.10), and deceased for productivity (t=0.26, p>0.10), and follower satisfaction with leader (t=0.87, p>0.10). The results were found to be non-significant for the control group.

#### 4.5.1.2 Other Rated Leadership Effectiveness at T2 vs T0

| 360 Ratings | Intervention Vs Control T0 | | Intervention Vs Control T2 | |
|---|---|---|---|---|
| | t | p | t | p |
| **Leadership Effectiveness** | | | | |
| Extra Effort from Followers | 1.60 | 0.115 | 2.22 | **0.030 |
| Productivity | 2.11 | **0.039 | 3.53 | ***0.0008 |
| Followers' Satisfaction with Leaders | 0.85 | 0.399 | 3.70 | ***0.0004 |

Table 11: Other Ratings: T values and P-values between 2 Groups on Leaders' behaviors and leadership effectiveness at T0 and T2.

* Difference is significant at the 0.1 level (2-tailed)

** Difference is significant at the 0.05 level (2-tailed)

***. Difference is significant at the 0.01 level (2-tailed)

In addition, Table 11 showed other 360 ratings on leadership effectiveness to be

significantly higher in the *intervention viz a viz control group* at T2, for generating extra effort (t=2.22, p=<0.5), productivity (t=3.53, p<0.01), and followers' satisfaction with leadership (t=3.70, p<0.01).

### 4.5.1.3 Two Way Repeated ANOVA F Values on Leadership Effectiveness between Groups over Time

| 360 Ratings | Group | | Time | | Group X Time | |
|---|---|---|---|---|---|---|
| **Leadership Effectiveness** | F Value | p-value | F Value | p-value | F Value | p-value |
| Extra Effort from Followers | 5.805 | 0.019** | 2.737 | 0.104 | 0.351 | 0.556 |
| Productivty | 11.520 | 0.001*** | 1.041 | 0.312 | 2.034 | 0.159 |
| Followers' Satisfaction with Leaders | 7.044 | 0.010** | 1.998 | 0.163 | 6.504 | 0.014** |

Table 12: F values and p-values between Group Comparison over Time

* Difference is significant at the 0.1 level (2-tailed)

** Difference is significant at the 0.05 level (2-tailed)

***. Difference is significant at the 0.01 level (2-tailed)


Figure 36: Interaction Effects: Satisfaction With Leader between Groups Over Time

Results from the Two-Way Repeated ANOVA measure in Table 12 found significant main effects for all the three leadership effectiveness ratings between the two groups, for leadership outcomes such as extra effort (F (1,57) =5.805, p<0.05) productivity (F (1,57) =11.52, p<0.01), and satisfaction (F (1,57) =7.044, p<0.05) with leader.

In this two-way mixed ANOVA with group and time as factors and other ratings of leadership effectiveness as response variables. Significant interaction effect was also seen in

Table 12 and Figure 36 for satisfaction with leadership (F (1,57) =6.504, p<0.05); indicating changes in satisfaction ratings exist across time between the two groups. This result suggests that the interaction effect could have resulted from leaders in the intervention group having undergone MBP leadership training and coaching, were able to sustain self-awareness through time to significantly increase their frequency in adoption of leadership behaviors that fostered followers' satisfaction with their leadership.

| | Intervention Group | | Control Group | |
|---|---|---|---|---|
| **Other Ratings** | **T2 vs T0** | | **T2 vs T0** | |
| **Leadership Behaviors** | Mean | SD | Mean | SD |
| Followers' Satisfaction with Leaders | 0.31 | 0.45 | (0.10) | 0.49 |

Table 13 Other Ratings: Followers' Satisfaction with Leaders over Time

Table 13 showed that the mean of other ratings increased by 0.31 in intervention group and decreased by 0.10 in the control group at T2 over T0; providing further supporting evidence in addition to the interaction effect highlighted earlier that the intervention group having attended MBP, established a significant impact in improving followers' satisfaction for their leadership viz a viz the control group.

**4.5.1.4 Conclusion:**

In summary findings on T values in Table 10 between time for respective conditions and T values between groups in Table 11 concurrently indicated that leaders who participated in the MBP received significant improved ratings from other raters on their levels of leadership effectiveness for deriving extra effort, productivity and followers' satisfaction with their leadership. In addition, F values derived from applying Mixed ANOVA in Table 12 showed significant interaction effects between group with followers' satisfaction with leaders. However, we did not see significant interaction effects for the other two leadership effectiveness elements namely productivity and extra effort. Findings rendered partial support to Hypothesis 1 with an interaction effect seen only between group and satisfaction with leaders. Hence only satisfaction with leader was impacted amongst

the three elements of Leadership Effectiveness.

### 4.5.2 Hypothesis 2a,3a(i), 3a(ii) and 4a Impact of MBP on Leader's Behaviors

Next, we will evaluate whether the MBP leadership training and coaching has an impact on increasing leaders' enactment of transformational, transactional contingent reward and authentic leadership behaviors as predicted in Hypothesis 2a, 3a(i) and 4a; and a decrease in leaders' enactment of transactional management by exception behaviors as predicted in Hypothesis 3a(ii) and shown in Figure 35.

First, independent t tests were conducted comparing the means on leaders' behaviors in the two groups at baseline Time 0 and at Time 2, to assess the relationship between the variables based on a normal probability distribution at 95% confidence level. Second, Mixed ANOVA tests on the follower perceptions of the leaders' behaviors were conducted to evaluate the main effects and interaction effects test results for the two groups over time in the next section.

#### 4.5.2.1 Self Ratings on Leaders' Behaviors at T2 vs T0

| | Other Ratings Intervention Vs Control | | Other Ratings Intervention Vs Control | | Self Ratings Intervention Vs Control | | Self Ratings Intervention Vs Control | |
|---|---|---|---|---|---|---|---|---|
| | T0 | | T2 | | T0 | | T2 | |
| **Leadership Behaviors** | t | p | t | p | t | p | t | p |
| Transformational | 1.46 | 0.149 | 2.78 | ***0.007 | 1.95 | *0.055 | 2.56 | **0.013 |
| Transactional | | | | | | | | |
| Contingent Reward | 1.80 | *0.076 | 2.70 | ***0.008 | 2.67 | ***0.009 | 2.91 | ***0.005 |
| Manage by Exception | 0.90 | 0.374 | -0.26 | 0.793 | 2.34 | **0.02 | 0.35 | 0.730 |
| Authentic | 1.72 | *0.090 | 3.25 | ***0.001 | 1.20 | 0.234 | 1.49 | 0.142 |

Table 14: T values and P-Values on Other and Self-Ratings Between the Intervention Group and Control Group at T0 and T2 for Leaders' Behaviors

* Difference is significant at the 0.1 level (2-tailed)

** Difference is significant at the 0.05 level (2-tailed)

*** Difference is significant at the 0.01 level (2-tailed)

Table 14 presented T scores at T2 on Leaders' self-ratings on own leadership behaviors, after attending the training and coaching program. We saw significant increase in MBP intervention group versus presentation control group T scores, specifically for transformational (t=2.56, p=0.013) and transactional contingent reward behaviors (t=2.91, p=0.005).

#### 4.5.2.2 Other Ratings on Leaders' Behaviors at T2 vs T0

In addition, T values presented in Table 14 and means derived from other raters' ratings shown Table 14 showed even more significant increases in ratings for transformational (t=2.78, p=0.007), transactional contingent reward (t=2.70, p=0.008), authentic (t=3.25, p=0.001) behaviors, except for active management by exception, between the two conditions subsequently at T2 particularly for leaders who have attended the MBP training. Thus, rendering initial support for Hypothesis 2a, 3a(i) and 4a. T results for management by exception behaviors decreased for both groups between pre- and post-tests; as the results were non-significant, it was insufficient to fully support Hypothesis 3a(ii).

#### 4.5.2.3 Mixed ANOVA on Other Ratings of Leaders' Behaviors over Time

| 360 Ratings | Group | | Time | | Group X Time | |
|---|---|---|---|---|---|---|
| **Leadership Behaviors** | F Value | p-value | F Value | p-value | F Value | p-value |
| Transformational | 6.785 | 0.012** | 8.020 | 0.006*** | 2.128 | 0.150 |
| Transactional | | | | | | |
| Contingent Reward | 6.898 | 0.011** | 3.910 | 0.053* | 1.063 | 0.307 |
| Active Manage by Exception | 0.206 | 0.651 | 1.720 | 0.195 | 1.299 | 0.259 |
| Authentic | 9.856 | 0.003*** | 5.067 | 0.028** | 2.083 | 0.154 |

Table 15: F values & P values: Other Ratings on Leaders' Behaviors & Leadership Effectiveness over Time

* Difference is significant at the 0.1 level (2-tailed)

** Difference is significant at the 0.05 level (2-tailed)

*** Difference is significant at the 0.01 level (2-tailed)

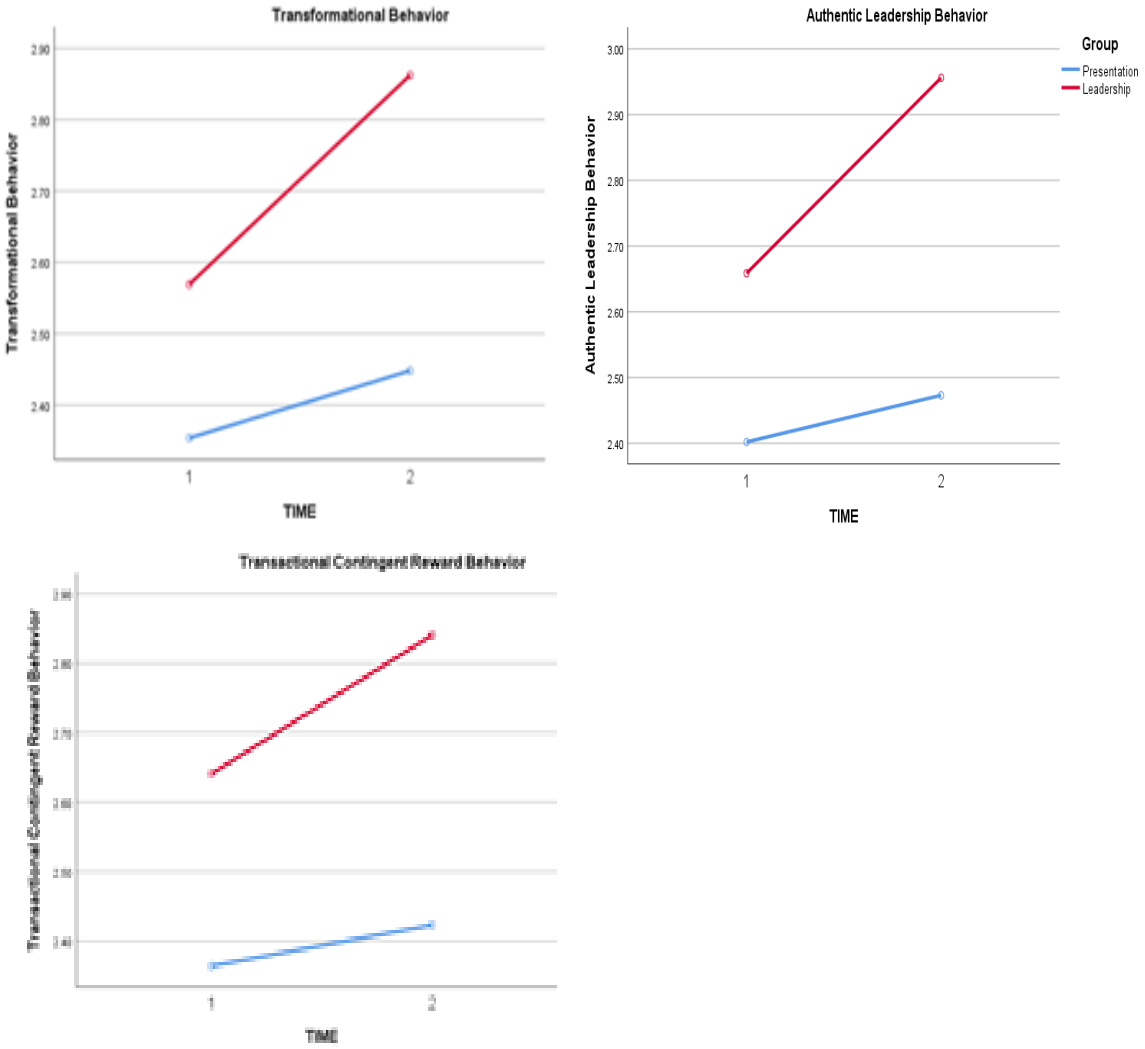



Figure 37: Means of Transformational, Transactional Contingent Reward and Authentic Behaviors at T0 vs T2 for both conditions

This research predicted a significant effect on the leadership behaviors for leaders in the intervention group relative to the control group over time. To test these hypotheses, a Mixed ANOVA measure was carried out to evaluate the trends between the two conditions with the continuous independent variables such as transformational, transactional and authentic behaviors over time. Table 15 above present results derived from an evaluation of the direct and interaction effects between two factors namely group over time. We found significant direct effects on other raters ratings for intervention viz a viz control group leaders for transformational (F (1,57) =6.785, p=0.012), contingent reward (F (1,57) =6.898, p=0.011), and authentic leadership behaviors (F (1,57)=9.856, p=0.003). Significant direct effects were

also noted on other raters' ratings for both groups over time for transformational (F (1,57) =8.02, p=0.006), contingent reward (F (1,57) =3.91, p=0.053), and authentic leadership behaviors (F (1,57) = 5.067, p=0.028).

#### 4.5.2.4 Repeated ANOVA on Other Ratings Within Group Over Time

| 360 Ratings | T2-T0 | | | |
|---|---|---|---|---|
| Within Groups | Leadership | | Presentation | |
| | F Value | p-value | F Value | p-value |
| **Transformational** | 15.553 | ***0.000 | 0.723 | 0.402 |
| **Transactional** | | | | |
| Contingent Reward | 7.045 | ***0.000 | 0.311 | 0.581 |
| Manage by Exception | 0.001 | 0.906 | 2.698 | 0.111 |
| **Authentic** | 13.107 | ***0.001 | 0.282 | 0.600 |

Table 16: F values and P values of Other Ratings Within Respective Conditions over Time for Leaders' Behaviors

* Difference is significant at the 0.1 level (2-tailed)

** Difference is significant at the 0.05 level (2-tailed)

*** Difference is significant at the 0.01 level (2-tailed)

Despite significant direct effects seen in the respective two factors, the interactive effects on the leadership behaviors between groups showed non-significant differences in the rate of change over time. As the F values and P values of the interaction effects were close to significant, particularly for transformational and authentic leadership behaviors, we extended the evaluation of the results further by conducting a Repeated ANOVA test within the respective conditions. Results presented in Table 16 showed significant effects especially for the intervention group for transformational (F (1,57) =15.553, p=0.000), contingent reward (F (1,57) =7.045, p=0.000), and authentic leadership behaviors (F (1,57) = 13.107, p=0.001), except for manage be exception behavior. In contrast, non-significant effects were noted for all leadership behaviors in the control group.

### 4.5.2.5 Between Subjects ANOVA at T2 on Other Ratings

| 360 Ratings | @ T2 | |
|---|---|---|
| | Between Groups | |
| **Leadership Behaviors** | F Value | p-value |
| Transformational | 7.711 | ***0.007 |
| Transactional | | |
| Contingent Reward | 7.308 | ***0.008 |
| Manage by Exception | 0.069 | 0.793 |
| Authentic | 10.542 | ***0.001 |

Table 17: F values and P values: Other Ratings on Leaders' Behaviors Between Groups at T2

*** Difference is significant at the 0.01 level (2-tailed)

In addition, we conducted between-subjects ANOVA with T2 other raters' ratings and noted again that the results as presented in Table 17, showed significant effects particularly for transformational ($F(1,57) = 7.711$, $p = 0.007$), contingent reward ($F(1,57) = 7.308$, $p = 0.008$), and authentic leadership behaviors ($F(1,57) = 10.542$, $p = 0.001$).

### 4.5.2.6 Conclusion:

These results suggested that MBP was potentially effective in enhancing transformational, transactional contingent reward and authentic leadership behaviors over a short span of 3 months. However, as the sample size was relatively small at 30 per group and three months' time frame was relatively short, these two factors could have potentially dampened interaction effects.

Although significant effects were seen in terms of increasing transformational, authentic and contingent reward leadership behaviors ratings over time especially in the intervention group compared to the control group, there was no significant differences in the rate of change on the leadership behaviors between the two groups from Time 1 to Time 2, after both conditions received the training and coaching intervention. Hence Hypotheses 2(a), 3(ai),3(aii) and 4(a) were not fully supported.

### 4.5.3 Hypothesis 2b,3b(i), 3b(ii) and 4b Leadership Effectiveness Change as Function of Change in Leader's Behaviors

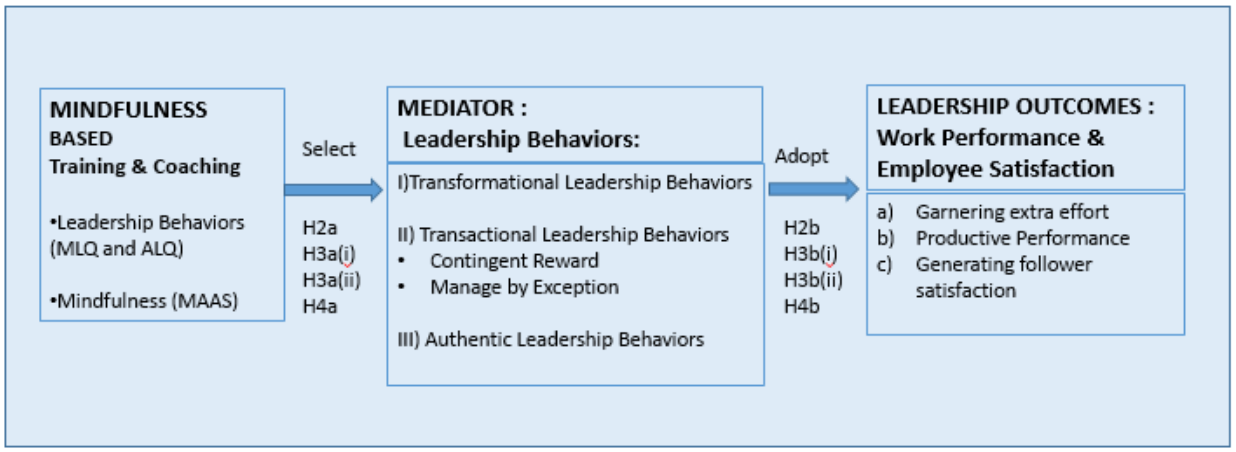



Figure 38: Mediation Effects of Intervention Program on Leadership Behaviors to facilitate Leadership Effectiveness Outcomes

The hypotheses 2a, 3a(i) and 4a illustrated in Figure 38 attempt to test the effectiveness of MBP in increasing the frequency of adopting transformational, contingent reward and authentic leadership behaviors and lesser of management by exception behaviors as mediators of positive leadership effectiveness change in hypothesis 3a(ii). While hypothesis 2b and 4b followed on with the prediction that participants who undergo MBP would show an augmented leadership effectiveness scores, viz a viz control group. Hypothesis 3b(i) predicted that leaders from the intervention group would increase frequency in adoption of transactional contingent reward behaviors that would augment leader's effectiveness, over control group. In contrast hypothesis 3b(ii) predicted that leaders practicing mindfulness and adopt less of transactional management by exception behaviors would lead to increase in leader's effectiveness.

The study predicted that there would be an improvement in the rate of adoption of the transformational, authentic and contingent reward leadership behaviors which will lead to increased leadership effectiveness for the intervention group at T2, after 3 months of MBP training and coaching.

To test the model of indirect effect of MBP leadership training has on the leadership effectiveness in generating effort, increasing productivity and promoting satisfaction with the leader in Hypothesis 2b,3b(i), 3b(ii) and 4b, through leadership behaviors, a regression analysis testing of a multiple mediator model would be adopted as recommended by Preacher & Hayes (2008), while bootstrapping the indirect effects of the leader's leadership behaviors with 5000 reiterations and treating the T0 baseline leadership behaviors as control variables.

To test the relationships between continuous independent variables such as transformational, transactional and authentic behaviors with the 3 dependent leadership effectiveness variables namely leader's efficacy, generate effort and promote satisfaction with the leader between the two conditions; Linear Regression and ANOVA Repeated measures were adopted. F scores, T values, R Square, coefficients and p values were examined to track the trends in both groups over time.

### 4.5.3.1 Linear Regression on Self-Ratings over Time

| | | T0 Self Rating Intervention Group | | | | T2 Self Rating Intervention Group | | | |
|---|---|---|---|---|---|---|---|---|---|
| Dependent Variable | Independent Variable | β | t-value | p-value of slope | R-Square | β | t-value | p-value of slope | R-Square |
| Extra Effort | Transformational | 1.362 | 6.041 | 0.000*** | 0.566 | 0.709 | 3.975 | 0.000*** | 0.361 |
| Extra Effort | Contingent Reward | 0.752 | 3.824 | 0.001*** | 0.343 | 0.361 | 2.193 | 0.037** | 0.147 |
| Extra Effort | Transactional | -0.667 | -2.253 | 0.032** | 0.153 | 0.149 | 0.397 | 0.695 | 0.006 |
| Extra Effort | Authentic | 1.174 | 4.182 | 0.000*** | 0.385 | 0.403 | 1.544 | 0.134 | 0.078 |
| Productivity | Transformational | 0.924 | 5.551 | 0.000*** | 0.524 | 0.734 | 4.098 | 0.000*** | 0.375 |
| Productivity | Contingent Reward | 0.738 | 7.450 | 0.000*** | 0.665 | 0.621 | 4.517 | 0.000*** | 0.422 |
| Productivity | Transactional | -0.505 | -2.456 | 0.021** | 0.177 | -0.057 | -0.150 | 0.882 | 0.001 |
| Productivity | Authentic | 0.918 | 5.016 | 0.000*** | 0.473 | 0.914 | 4.243 | 0.000*** | 0.391 |
| Satisfaction | Transformational | 1.221 | 6.422 | 0.000*** | 0.596 | 0.535 | 2.600 | 0.015** | 0.194 |
| Satisfaction | Contingent Reward | 0.675 | 3.982 | 0.000*** | 0.362 | 0.453 | 2.808 | 0.009*** | 0.220 |
| Satisfaction | Transactional | -0.402 | -1.488 | 0.148 | 0.073 | -0.580 | -1.563 | 0.129 | 0.080 |
| Satisfaction | Authentic | 0.954 | 3.736 | 0.001*** | 0.333 | 0.540 | 2.078 | 0.047** | 0.134 |

Table 18: Unstandardized Regression Coefficients, T values, P-values and R-Squared values of Leadership Behaviors as Predictors of Leadership Effectiveness scores at T0 and T2 for Intervention group Self-ratings.

* Difference is significant at the 0.1 level (2-tailed)

** Difference is significant at the 0.05 level (2-tailed)

*** Difference is significant at the 0.01 level (2-tailed)

| T0 Self Rating Control Group | | | | | | T2 Self Rating Control Group | | | |
|---|---|---|---|---|---|---|---|---|---|
| Dependent Variable | Independent Variable | β | t-value | p-value of slope | R-Square | β | t-value | p-value of slope | R-Square |
| Extra Effort | Transformational | 0.946 | 5.980 | 0.000*** | 0.561 | 0.930 | 6.252 | 0.000*** | 0.583 |
| Extra Effort | Contingent Reward | 0.763 | 7.621 | 0.000*** | 0.675 | 0.754 | 5.294 | 0.000*** | 0.500 |
| Extra Effort | Transactional | 0.321 | 1.011 | 0.321 | 0.035 | 0.072 | 0.313 | 0.756 | 0.003 |
| Extra Effort | Authentic | 0.799 | 2.851 | 0.008*** | 0.225 | 0.736 | 3.248 | 0.003*** | 0.274 |
| Productivity | Transformational | 0.997 | 6.086 | 0.000*** | 0.570 | 0.862 | 6.917 | 0.000*** | 0.631 |
| Productivity | Contingent Reward | 0.793 | 7.471 | 0.000*** | 0.666 | 0.701 | 5.797 | 0.000*** | 0.546 |
| Productivity | Transactional | 0.108 | 0.320 | 0.752 | 0.004 | -0.085 | -0.414 | 0.682 | 0.006 |
| Productivity | Authentic | 0.659 | 2.135 | 0.042** | 0.140 | 0.744 | 3.904 | 0.001*** | 0.352 |
| Satisfaction | Transformational | 0.560 | 2.960 | 0.006*** | 0.238 | 0.616 | 4.786 | 0.000*** | 0.450 |
| Satisfaction | Contingent Reward | 0.357 | 2.471 | 0.020** | 0.179 | 0.511 | 4.368 | 0.000*** | 0.405 |
| Satisfaction | Transactional | 0.238 | 0.820 | 0.419 | 0.023 | -0.133 | -0.771 | 0.447 | 0.021 |
| Satisfaction | Authentic | 0.514 | 1.888 | 0.069* | 0.113 | 0.622 | 3.836 | 0.001*** | 0.344 |

Table 19: Unstandardized Regression Coefficients, T values, P-values and R-Squared Values of Leadership Behaviors as Predictors of Leadership Effectiveness Scores at T0 and T2 for Control Group Self-Ratings.

* Difference is significant at the 0.1 level (2-tailed)

** Difference is significant at the 0.05 level (2-tailed)

*** Difference is significant at the 0.01 level (2-tailed)

This study investigated the relationship between the leadership behaviors and outcomes with the application of linear regression on *self-ratings* for intervention group presented in Table 18 and for control group in Table 19, Regression coefficients for all models in both groups were found to be significant throughout T0 and T2; with the exception of the coefficient for a pair between authentic and employee extra effort in the intervention group in Table 18 and transactional manage by exception leadership for both groups in Tables 18 and 19.

### 4.5.3.2 Linear Regression on Other-Ratings over Time

| T0 360 Rating Intervention Group | | | | | | T2 360 Rating Intervention Group | | | |
|---|---|---|---|---|---|---|---|---|---|
| Dependent Variable | Independent Variable | β | t-value | p-value of slope | R-Square | β | t-value | p-value of slope | R-Square |
| Extra Effort | Transformational | 0.812 | 4.930 | 0.000*** | 0.465 | 1.017 | 8.415 | 0.000*** | 0.717 |
| Extra Effort | Contingent Reward | 0.844 | 6.201 | 0.000*** | 0.579 | 0.814 | 5.860 | 0.000*** | 0.551 |
| Extra Effort | Transactional | 0.542 | 1.452 | 0.158 | 0.070 | -0.012 | -0.054 | 0.957 | 0.000 |
| Extra Effort | Authentic | 0.885 | 5.293 | 0.000*** | 0.500 | 1.015 | 9.316 | 0.000*** | 0.756 |
| Productivity | Transformational | 0.923 | 9.661 | 0.000*** | 0.769 | 0.919 | 10.517 | 0.000*** | 0.798 |
| Productivity | Contingent Reward | 0.780 | 6.946 | 0.000*** | 0.633 | 0.710 | 6.118 | 0.000*** | 0.572 |
| Productivity | Transactional | 0.085 | 0.249 | 0.805 | 0.002 | 0.065 | 0.350 | 0.729 | 0.004 |
| Productivity | Authentic | 0.997 | 11.043 | 0.000*** | 0.813 | 0.874 | 9.558 | 0.000*** | 0.765 |
| Satisfaction | Transformational | 1.005 | 8.848 | 0.000*** | 0.737 | 0.868 | 8.268 | 0.000*** | 0.709 |
| Satisfaction | Contingent Reward | 0.769 | 5.265 | 0.000*** | 0.498 | 0.705 | 5.966 | 0.000*** | 0.560 |
| Satisfaction | Transactional | -0.314 | -0.836 | 0.410 | 0.024 | -0.080 | -0.435 | 0.667 | 0.007 |
| Satisfaction | Authentic | 1.078 | 9.620 | 0.000*** | 0.768 | 0.839 | 8.088 | 0.000*** | 0.700 |

Table 20: Unstandardized Regression Coefficients, T values, P-values and R-Squared values of Leadership Behaviors as Predictors of Leadership Effectiveness scores at T0 and T2 for Intervention group Other-ratings.

* Difference is significant at the 0.1 level (2-tailed)

** Difference is significant at the 0.05 level (2-tailed)

*** Difference is significant at the 0.01 level (2-tailed)

| T0 360 Rating Control Group | | | | | | T2 360 Rating Control Group | | | |
|---|---|---|---|---|---|---|---|---|---|
| Dependent Variable | Independent Variable | β | t-value | p-value of slope | R-Square | β | t-value | p-value of slope | R-Square |
| Extra Effort | Transformational | 1.119 | 6.639 | 0.000*** | 0.612 | 1.167 | 9.903 | 0.000*** | 0.778 |
| Extra Effort | Contingent Reward | 1.032 | 5.680 | 0.000*** | 0.535 | 1.069 | 8.933 | 0.000*** | 0.740 |
| Extra Effort | Transactional | -0.126 | -0.329 | 0.745 | 0.004 | 0.554 | 1.426 | 0.165 | 0.068 |
| Extra Effort | Authentic | 0.901 | 4.712 | 0.000*** | 0.442 | 1.141 | 10.547 | 0.000*** | 0.799 |
| Productivity | Transformational | 1.079 | 9.911 | 0.000*** | 0.778 | 0.994 | 10.224 | 0.000*** | 0.789 |
| Productivity | Contingent Reward | 0.981 | 7.425 | 0.000*** | 0.663 | 0.946 | 10.922 | 0.000*** | 0.810 |
| Productivity | Transactional | -0.473 | -1.499 | 0.145 | 0.074 | 0.342 | 1.023 | 0.315 | 0.036 |
| Productivity | Authentic | 0.926 | 7.051 | 0.000*** | 0.640 | 1.017 | 14.820 | 0.000*** | 0.887 |
| Satisfaction | Transformational | 1.067 | 8.603 | 0.000*** | 0.726 | 0.949 | 9.846 | 0.000*** | 0.776 |
| Satisfaction | Contingent Reward | 0.958 | 6.514 | 0.000*** | 0.602 | 0.926 | 11.998 | 0.000*** | 0.837 |
| Satisfaction | Transactional | -0.581 | -1.830 | 0.078* | 0.107 | 0.223 | 0.685 | 0.499 | 0.016 |
| Satisfaction | Authentic | 0.846 | 5.385 | 0.000*** | 0.509 | 0.955 | 12.316 | 0.000*** | 0.844 |

Table 21: Unstandardized Regression Coefficients, T values, P-values and R-Squared Values of Leadership Behaviors as Predictors of Leadership Effectiveness Scores at T0 and T2 for Control Group Other-Ratings.

* Difference is significant at the 0.1 level (2-tailed)

** Difference is significant at the 0.05 level (2-tailed)

*** Difference is significant at the 0.01 level (2-tailed)

The Regression Coefficients for *Other-ratings* on the intervention group in Table 20 and for control group in Table 21 showed throughout significant coefficient, T, significant p and strong R-square results at 95% confidence level, for the impact on all three leadership outcomes resulting from the indirect effect of MBP; and through increased leaders' adoption of transformational, authentic and contingent reward behaviors; except for transactional manage by exception behaviors at T0.

After completing training and coaching intervention at T2, the coefficients in all models apart from transactional manage by exception regression results showed significant positive trends with p-value < 0.1 with the three leadership effectiveness dimensions for both groups.

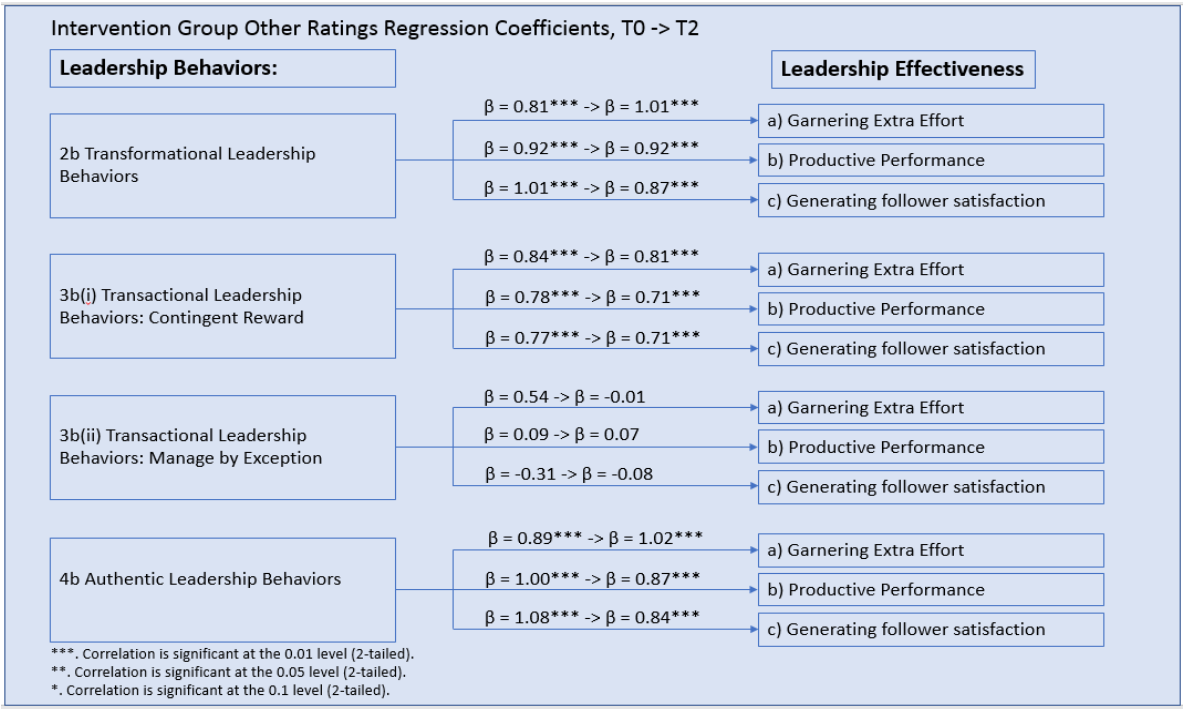



Table 22: Unstandardized Regression coefficients of Leadership Behaviors as predictors of Leadership Effectiveness scores at T0 and T2 for Intervention Group Other-Ratings.

* Difference is significant at the 0.1 level (2-tailed)

** Difference is significant at the 0.05 level (2-tailed)

*** Difference is significant at the 0.01 level (2-tailed)

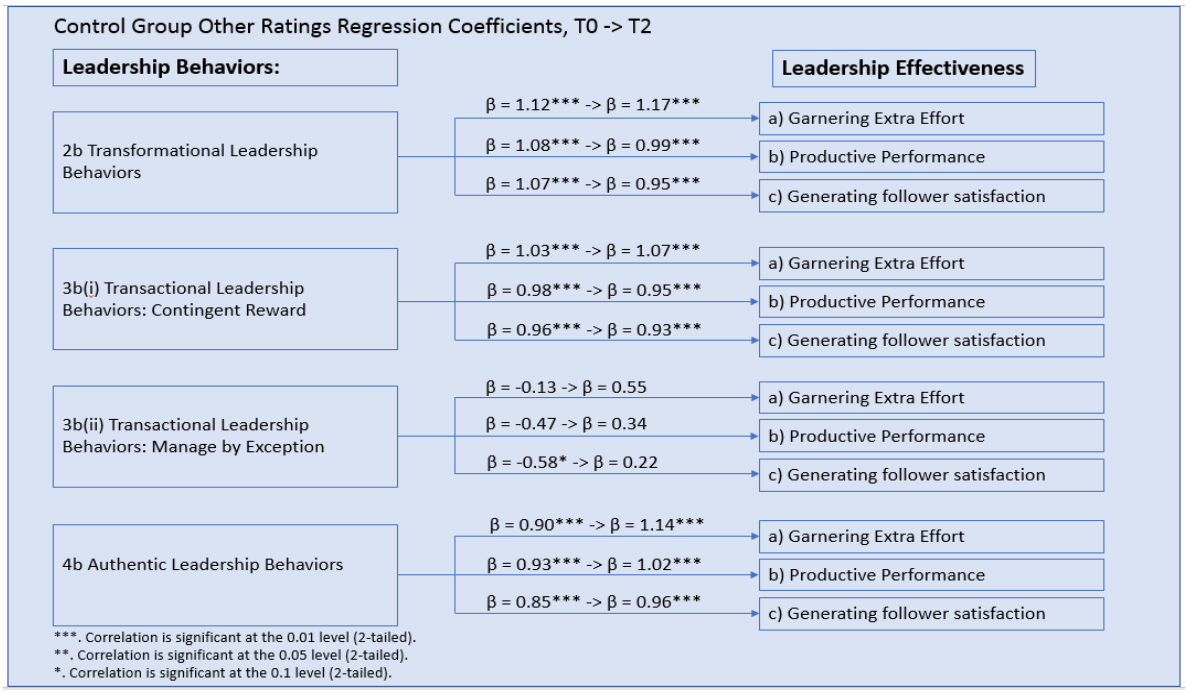



Table 23: Unstandardized Regression coefficients of Leadership Behaviors as predictors of Leadership Effectiveness scores at T0 and T2 for Control Group Other-Ratings.

* Difference is significant at the 0.1 level (2-tailed)

** Difference is significant at the 0.05 level (2-tailed)

*** Difference is significant at the 0.01 level (2-tailed)

#### 4.5.3.3 Linear Regression: Conclusion

In summary, results showed *other*-ratings at T2 for intervention group in Table 20 and control group in Table 21 to be at an even more significant coefficient, t, p and R-square values *than self*-ratings for intervention group in Table 18 and control group in Table 19 relating to transformational, contingent reward and authentic leadership behaviors results, for all the three leadership effectiveness dimensions. Contingent rewards leadership behaviors scores maintain its significant p values at T2 while transactional management by exception scores were found to be non-significant.

It was also noted in Table 23 which summarized the *unstandardized coefficients of regression* for control group between transformational, contingent reward and authentic leadership behaviors and the leadership effectiveness variables for other ratings appear to be *steeper than intervention group* shown in Table 22. This evidence imply that transformational, contingent reward and authentic leadership behaviors are more correlated with the results of leadership effectiveness in the control group.

However, *higher means* were evidenced in Table 3 and 4 for the self-ratings and other ratings for the *intervention* group leadership behaviors and leadership effectiveness variables, at both T0 and T2 viz a viz the control group, Hence, the weaker coefficients and relationships between the leadership behaviors and leadership effectiveness in the intervention group suggest that there could be other behavioral elements that were not measured in this model but contributed towards the determination of the leadership effectiveness outcomes, more so than the control group.

### 4.5.3.4 Hypothesis 2c,3c(i), 3c(ii) and 4c Mediation Tests:

### Evaluation of Indirect Effects using Regression Bootstrap Approach on Self-Ratings

| | Self-Ratings | | Time 0 Indirect Effect X on Y | | | Time 2 Indirect Effect X on Y | | |
|---|---|---|---|---|---|---|---|---|
| y-variable | mediator | x-variable | Coefficient | BootLLCI | BootULCI | Coefficient | BootLLCI | BootULCI |
| Extra Effort | Transformational | group | 0.3074 | -0.0011 | 0.6582 | 0.3165 | 0.0843 | 0.6112 |
| | Contingent Reward | | 0.4049 | 0.0895 | 0.7377 | 0.2987 | 0.1073 | 0.5761 |
| | Manage by Exception | | -0.0536 | -0.3016 | 0.0753 | 0.0037 | -0.0333 | 0.1318 |
| | Authentic | | 0.1394 | -0.0847 | 0.3985 | 0.1149 | -0.0278 | 0.3571 |
| Productivity | Transformational | group | 0.3639 | -0.0026 | 0.3474 | 0.3037 | 0.077 | 0.556 |
| | Contingent Reward | | 0.4125 | 0.1314 | 0.7233 | 0.3348 | 0.1194 | 0.5843 |
| | Manage by Exception | | -0.0793 | -0.3485 | 0.0565 | -0.0035 | -0.0988 | 0.0235 |
| | Authentic | | 0.1117 | -0.0688 | 0.3338 | 0.147 | -0.0399 | 0.3675 |
| Satisfaction | Transformational | group | 0.2212 | 0.0234 | 0.5253 | 0.2182 | 0.0561 | 0.4299 |
| | Contingent Reward | | 0.2497 | 0.0725 | 0.511 | 0.2442 | 0.0876 | 0.4373 |
| | Manage by Exception | | -0.026 | -0.2644 | 0.0922 | -0.0091 | -0.1106 | 0.0408 |
| | Authentic | | 0.1025 | -0.0395 | 0.3161 | 0.1093 | -0.0191 | 0.2861 |

Table 24: Self-Ratings: Indirect Mediation Effects at T0 and T2.

Evaluation was conducted on the indirect effects using the bootstrap approach (Bollen and Stine, 1990, Preacher and Hayes, 2004). We tested the indirect mediation effects of the respective condition groups on leadership outcomes through leadership behaviors with 5000 bootstrap reiterations. Indirect Mediation effects indicated in Table 24 for *self-ratings at Time 2* showed significant indirect effect estimated at 95% Confidence Interval (CI) that did not contain zero for the group on Employee effort through transformational behaviors (β= 0.3165, $CI^{95}$ 0.0843 to 0.6112) and contingent reward (β= 0.2987, $CI^{95}$ 0.1073 to 0.5761) behaviors. Significant indirect effect for the group on productivity were also evident through transformational behaviors (β= 0.3037, $CI^{95}$ 0.077 to 0.556) and contingent reward (β= 0.3348, $CI^{95}$ 0.1194 to 0.5843) behaviors. While indirect effect for the group on satisfaction with leadership derived through transformational behaviors (β= 0.2182, $CI^{95}$ 0.0561 to 0.4299) and contingent reward (β= 0.2442, $CI^{95}$ 0.0876 to 0.4373) behaviors.

### 4.5.3.5 Mediation Tests:

**Evaluation of Indirect Effects Using the Bootstrap Approach on Other-Ratings**

| | Other Ratings | | Time 0 Indirect Effect X on Y | | | Time 2 Indirect Effect X on Y | | |
|---|---|---|---|---|---|---|---|---|
| y-variable | mediator | x-variable | Coefficient | BootLLCI | BootULCI | Coefficient | BootLLCI | BootULCI |
| Extra Effort | Transformational | group | 0.1839 | -0.0379 | 0.484 | 0.4747 | 0.1506 | 0.8037 |
| | Contingent Reward | | 0.2286 | -0.013 | 0.5077 | 0.4155 | 0.1035 | 0.7405 |
| | Manage by Exception | | 0.0088 | -0.0328 | 0.1046 | -0.0075 | -0.1116 | 0.0492 |
| | Authentic | | 0.2018 | -0.024 | 0.4867 | 0.5345 | 0.224 | 0.8554 |
| Productivity | Transformational | group | 0.2176 | -0.0574 | 0.5507 | 0.4083 | 0.1326 | 0.7048 |
| | Contingent Reward | | 0.2455 | -0.006 | 0.5862 | 0.3665 | 0.1079 | 0.6603 |
| | Manage by Exception | | -0.0242 | -0.1609 | 0.0166 | -0.0057 | -0.0934 | 0.0355 |
| | Authentic | | 0.2447 | -0.0186 | 0.5594 | 0.4725 | 0.1926 | 0.765 |
| Satisfaction | Transformational | group | 0.2239 | -0.0666 | 0.5556 | 0.3831 | 0.1165 | 0.6751 |
| | Contingent Reward | | 0.2407 | -0.0042 | 0.565 | 0.3597 | 0.1096 | 0.6492 |
| | Manage by Exception | | -0.0422 | -0.2396 | 0.0279 | -0.0019 | -0.0656 | 0.0361 |
| | Authentic | | 0.2401 | -0.0187 | 0.5632 | 0.4459 | 0.1935 | 0.7221 |

Table 25: Other-Ratings: Indirect Mediation Effects at T0 and T2

Indirect Mediation effects indicated in Table 25 for *other-ratings at Time 2* showed significant indirect effect for the group on effort through transformational behaviors (β= 0.4747, $CI^{95}$ 0.1506 to 0.8037), contingent reward (β= 0.4155, $CI^{95}$ 0.1035 to 0.7405) and authentic (β= 0.5345, $CI^{95}$ 0.224 to 0.8554) behaviors. Significant indirect effect for the group on productivity were also evident through transformational behaviors (β= 0.4083, $CI^{95}$ 0.1326 to 0.7048), contingent reward (β= 0.3665, $CI^{95}$ 0.1079 to 0.6603) and authentic (β= 0.4725, $CI^{95}$ 0.1926 to 0.765) behaviors. While indirect effect for the group on satisfaction with leadership derived through transformational behaviors (β= 0.3831, $CI^{95}$ 0.1165 to 0.6751), contingent reward (β= 0.3597, $CI^{95}$ 0.1096 to 0.6492) and authentic (β= 0.4459, $CI^{95}$ 0.1935 to 0.7221) behaviors.

Mediation results showed indirect unstandardized coefficients in Table 24 for self-ratings and Table 25 for other-ratings which suggested that leaders from the MBP intervention group viz a viz control group enhanced frequency in adoption of transformational, contingent

and authentic behaviors that led to improved effectiveness in garnering employee effort, productivity and employee satisfaction with leadership overtime.

#### 4.5.3.6 Conclusion: Summarizing Regression Direct and Indirect Unstandardized Coefficient Results at T2 for Other Ratings for the 2 Conditions

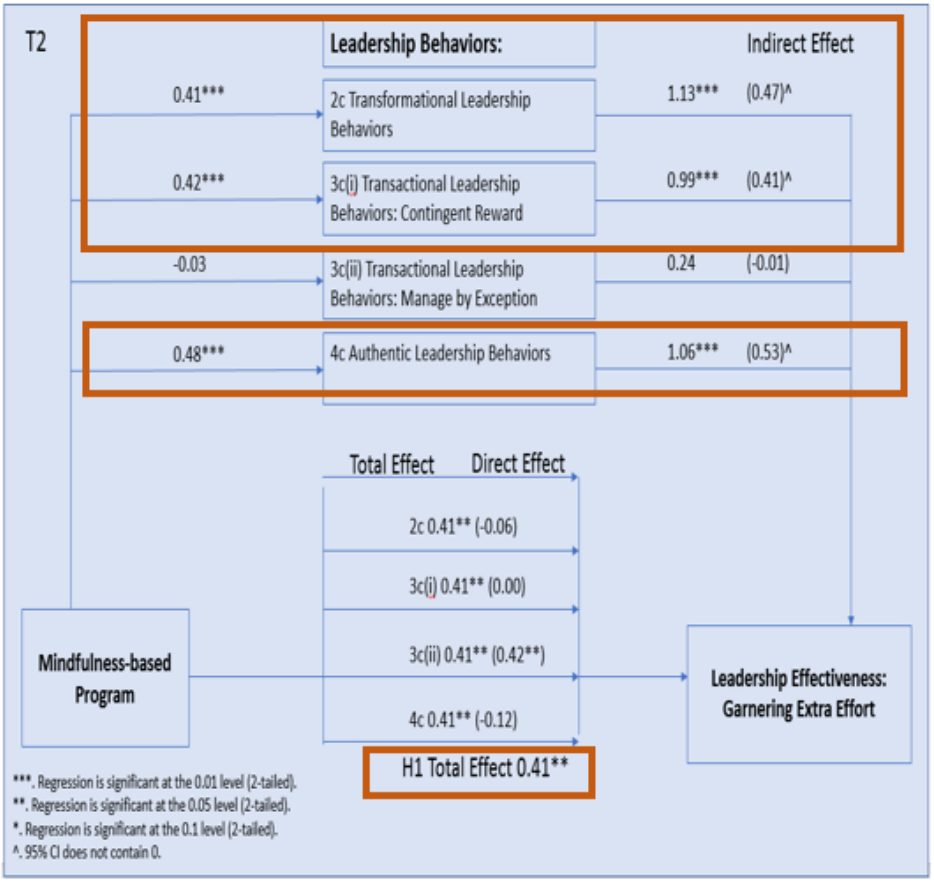



Table 26: X=Group, Y=Leaders' effectiveness in generating Extra Effort, M=Leadership Behaviors

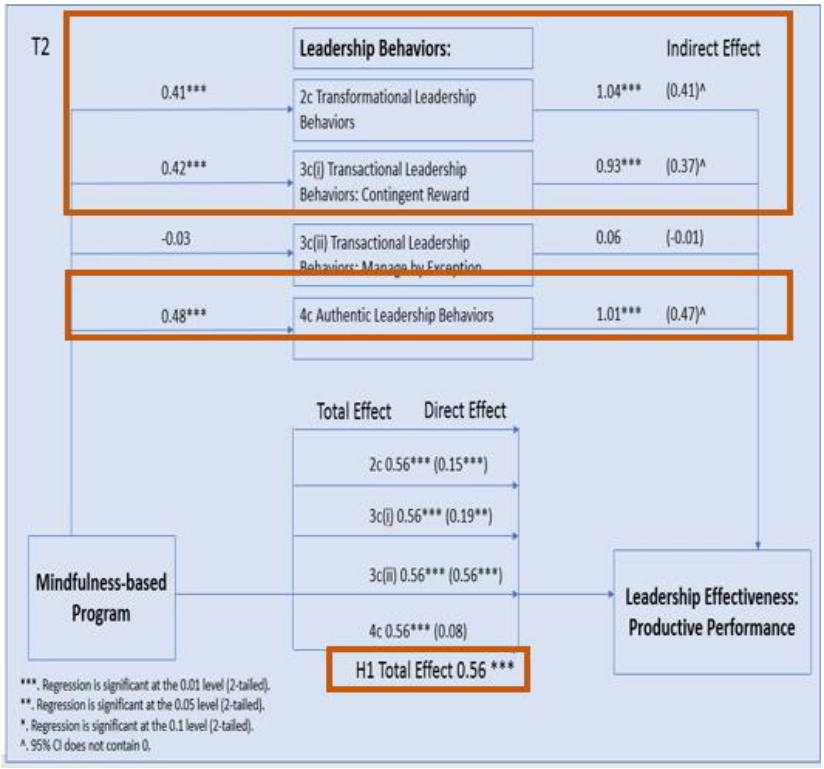



Table 27: X=Group, Y=Leaders' effectiveness in generating Productive Performance, M=Leadership Behaviors

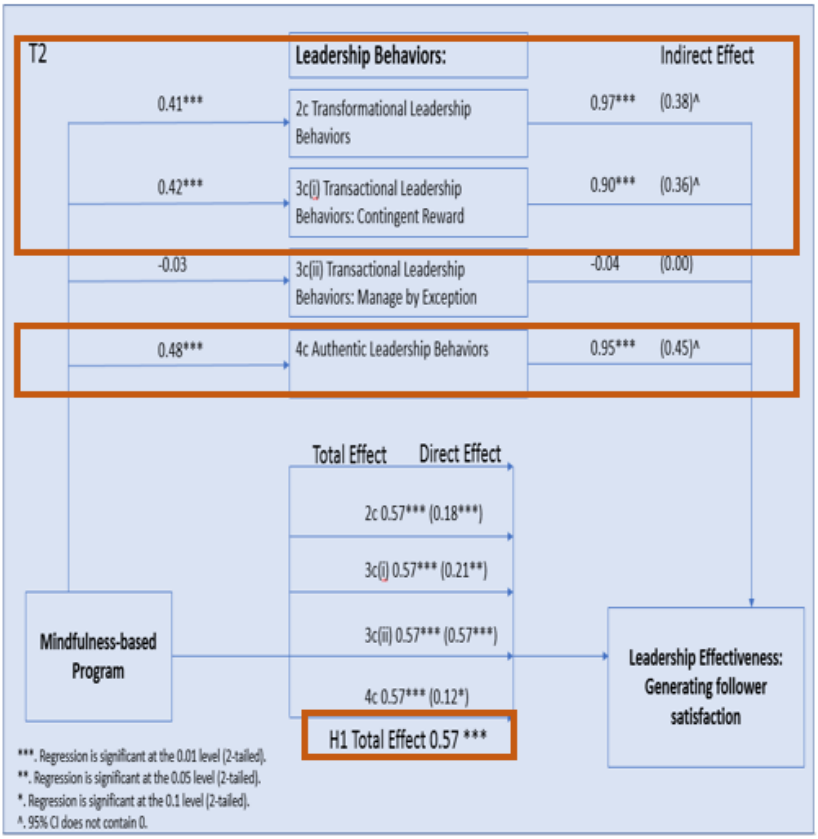



Table 28: X=Group, Y=Leaders' effectiveness in generating Follower Satisfaction, M=Leadership Behaviors

In summary, overall results showed that indirect mediation unstandardized coefficients derived from Tables 26 to 28 showed significant stronger relationships between the intervention group continuous independent leadership behavior variables such as transformational, contingent reward and authentic behaviors, except transactional management by exception behaviors over control group in generate leadership effectiveness.

Therefore, supporting Hypotheses 2c, 3c(i) and 4c in demonstrating the effectiveness of MBP in increasing the frequency of adopting transformational, contingent reward and authentic leadership behaviors as mediators of positive leadership effectiveness change.

Hypothesis 3a(i) predicted that leaders from the intervention group would increase frequency in adoption of transactional contingent reward behaviors in augmenting leader's effectiveness, over control group. While Hypothesis 3a(ii) predicted that leaders practicing mindfulness and who adopt less of transactional management by exception behaviors, which would lead to increase in leader's effectiveness. Hypothesis 3a(ii), 3b(ii) and 3c(ii) were not supported by evidence, as there were only non-significant results found on the leader's reduced use of management by exception behaviors with resulting leadership effectiveness changes.

In the conduct of this research study, some leaders commented that they consciously adopted MBE behaviors at times to promote trusting relationships and give employees a sense of autonomy to exercise innovative thinking. Bass & Avolio (1990) agreed that there could be situations when MBE would be appropriate; if it is not adopted excessively.

In addition, it was noted that MLQ transactional measures did not clearly distinguish between active and passive manage by exception behaviors. As Yuki (2002) explained, there was "a lack of clear common denominator". Hence, clarity on the definition of management by exception construct would be needed to derive meaningful empirical test results.

### 4.5.4 Hypotheses 5 & 6: Moderation Effect of the Environment on Leaders' Behaviors and Leadership Effectiveness

This research study predicts that an increase in volatility in the environment, would strengthen the positive relationship between effectiveness of mindfulness practice and the enactment of leadership behaviors. Such that the reliance on leaders to enact transformational, authentic and contingent reward transactional leadership behaviors to bring leadership effectiveness would be strong and significant. However, it is expected the reliance on transactional leadership management by exception behaviors would be reduced in turbulent conditions.

To test hypothesis 5 and 6, Regression analysis was conducted to establish interaction-moderation effects whilst Repeated measure ANOVA analysis was applied to test the moderating role of the state of the environment on leadership behaviors performance outcomes between the two groups. The state of environment was dummy-coded according to whether the environment was stable (0) or dynamic (1). We aim to evaluate how the dynamic state of environment contribute to explaining the variation in the change in means of the leadership behaviors and effectiveness

#### 4.5.4.1 Chi Square Test

First A chi Square test was conducted to confirm that the ratings for dynamic and stable environment by the participants from respective groups was not skewed. The test confirmed in Figure 39 the assertion that there was no violation of the assumption of normality and homogeneity of variance between the groups ($X^2$=.269, df=1, p=0.604).

**GROUP * ENVIRONMENT Crosstabulation**

Count

| | | ENVTT0 | | |
|---|---|---|---|---|
| | | Stable | Dynamic | Total |
| GROUP | Presentation | 12 | 18 | 30 |
| | Leadership | 15 | 15 | 30 |
| Total | | 27 | 33 | 60 |
| | | 44% | 55% | 50% |
| | | 56% | 45% | 50% |
| | | 100% | 100% | 100% |

**Chi-Square Tests**

| | Value | df | Asymptotic Significance (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) |
|---|---|---|---|---|---|
| Pearson Chi-Square | .606[a] | 1 | 0.436 | | |
| Continuity Correction[b] | 0.269 | 1 | 0.604 | | |
| N of Valid Cases | 60 | | | | |

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 13.50.

b. Computed only for a 2x2 table

Figure 39: Chi Square Test on Ratings of Environment Between Conditions at T0

### 4.5.4.2 Moderation Regression Test on Impact of Environment on Relationship between Group and Leaders' Behaviors

The focus was to evaluate the effect that environment has to the strength of relationship between the conditions with leadership behaviors; and between leadership behaviors with leadership outcomes. This evaluation was conducted using regression analysis to establish existence of interaction-moderation effects.

| T0 360 Rating | | | | | | | T2 360 Rating | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Y Variable | Moderator | X Variable | β | t-value | p-value of interaction | R-Squared | β | t-value | p-value of interaction | R-Squared |
| Transform | Envt | Group | -0.386 | -1.431 | 0.158 | 0.066 | -0.618 | -2.187 | **0.0329 | 0.199 |
| CR | Envt | Group | -0.313 | -1.096 | 0.278 | 0.061 | -0.498 | -1.656 | 0.103 | 0.154 |
| Transaction | Envt | Group | -0.081 | -0.470 | 0.640 | 0.023 | 0.100 | 0.486 | 0.629 | 0.076 |
| Authentic | Envt | Group | -0.449 | -1.657 | 0.103 | 0.079 | -0.625 | -2.198 | **0.0321 | 0.226 |

Table 29: Moderation Regression Effects of Environment at T0 and T2 on Other-Ratings Between Groups of Both Conditions and Leadership Behaviors

* Difference is significant at the 0.1 level (2-tailed)

** Difference is significant at the 0.05 level (2-tailed)

Initial results from regression analysis as shown in Table 29 presented the computed coefficient, t, p and R-square values for other-ratings for the two conditions. Results depicted show significant influence that the dynamic environment condition has in dampening the positive relationship between group with p-values and corresponding values for other-rated

Transformation (β= -0.618, p=0.0329), authentic (β= -0.625, p=0.0321) leadership behaviors for the two groups and near significant contingent reward behavior (β= -0.498, p=0.103).

### 4.5.4.3 Moderation Regression Test on Impact of Environment on Relationship between Leaders' Behaviors and Leadership Effectiveness

| | | | T0 360 Rating Intervention Group | | | | T2 360 Rating Intervention Group | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Y Variable | Moderator | X Variable | β | t-value | p-value of interaction | R-Squared | β | t-value | p-value of interaction | R-Squared |
| EE | Envt | Transforma | -0.861 | -2.854 | ***0.008 | 0.576 | 0.045 | 0.163 | 0.872 | 0.723 |
| EE | Envt | CR | -0.269 | -0.887 | 0.383 | 0.541 | 0.568 | 2.081 | **0.047 | 0.631 |
| EE | Envt | Transactior | -0.920 | -1.180 | 0.249 | 0.190 | -0.561 | -1.297 | 0.206 | 0.163 |
| EE | Envt | Authentic | -0.701 | -2.183 | **0.038 | 0.606 | 0.060 | 0.242 | 0.811 | 0.758 |
| EE | Envt | MAAS | -0.064 | -0.197 | 0.845 | 0.163 | 0.472 | 1.925 | *0.065 | 0.218 |
| PROD | Envt | Transforma | -0.140 | -0.682 | 0.501 | 0.757 | 0.008 | 0.050 | 0.960 | 0.863 |
| PROD | Envt | CR | 0.346 | 1.463 | 0.155 | 0.654 | 0.455 | 2.326 | **0.028 | 0.741 |
| PROD | Envt | Transactior | -1.094 | -1.483 | 0.150 | 0.101 | -0.455 | -1.296 | 0.206 | 0.246 |
| PROD | Envt | Authentic | 0.081 | 0.427 | 0.673 | 0.831 | 0.106 | 0.578 | 0.568 | 0.821 |
| PROD | Envt | MAAS | -0.175 | -0.578 | 0.569 | 0.101 | 0.318 | 1.555 | 0.132 | 0.254 |
| SAT | Envt | Transforma | -0.110 | -0.474 | 0.639 | 0.713 | 0.129 | 0.536 | 0.597 | 0.713 |
| SAT | Envt | CR | 0.296 | 1.063 | 0.298 | 0.555 | 0.412 | 1.699 | 0.101 | 0.605 |
| SAT | Envt | Transactior | -1.724 | -2.346 | **0.026 | 0.175 | -0.541 | -1.419 | 0.168 | 0.118 |
| SAT | Envt | Authentic | 0.110 | 0.458 | 0.651 | 0.744 | 0.082 | 0.348 | 0.730 | 0.704 |
| SAT | Envt | MAAS | -0.155 | -0.485 | 0.632 | 0.076 | 0.106 | 0.460 | 0.649 | 0.057 |

Table 30: Moderation Regression effects of Environment at T0 and T2 on Other-Ratings Between Leadership Behaviors and Leadership Outcomes for Intervention Group

* Difference is significant at the 0.1 level (2-tailed)

** Difference is significant at the 0.05 level (2-tailed)

*** Difference is significant at the 0.01 level (2-tailed)

The results in Table 30 for the intervention group illustrated that at T0 prior to the commencement of MBP, the dynamic state of environment had significant negative impact between transformational behaviors (β= -0.861, p=0.008) and authentic behaviors (β= -0.701, p=0.038) with employee effort. A significant negative relationship was also observed between Transaction behaviors (β= -1.724, p=0.026) with Satisfaction with leadership.

It was also noted that the initial impact of the dynamic environment at T0 was negative between leaders' behaviors with their leadership outcomes, besides transactional behaviors. Subsequent to MBP training at T2, leadership behaviors relationship with leadership effectiveness *converted from negative to positive* for all leadership behaviors except transactional behaviors. Specifically, significant relationships were seen between Contingent behaviors (β= 0.568, p=0.047) with Employee Effort and Contingent behaviors (β= 0.455,

p=0.028) with Productivity. In addition, there was significant positive impact seen on the relationship between MAAS (β= 0.472, p=0.065) and Employee Effort in a dynamic environment. While the relationship between MAAS (β= 0.318, p=0.132) and productivity was close to being significant.

**Presentation**

| | | | T0 360 Rating Control Group | | | | T2 360 Rating Control Group | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Y Variable | Moderator | X Variable | β | t-value | p-value of interaction | R-Squared | β | t-value | p-value of interaction | R-Squared |
| EE | Envt | Transformational | 0.101 | 0.292 | 0.773 | 0.613 | -0.051 | -0.325 | 0.748 | 0.908 |
| EE | Envt | CR | 0.305 | 0.773 | 0.447 | 0.521 | -0.153 | -0.614 | 0.544 | 0.745 |
| EE | Envt | Transactional | 0.558 | 0.781 | 0.442 | 0.078 | -0.400 | -0.447 | 0.658 | 0.124 |
| EE | Envt | Authentic | 0.250 | 0.648 | 0.522 | 0.472 | 0.047 | 0.206 | 0.839 | 0.807 |
| EE | Envt | MAAS | 0.205 | 0.422 | 0.677 | 0.097 | -0.127 | -0.364 | 0.719 | 0.296 |
| PROD | Envt | Transformational | -0.525 | -2.429 | **0.022 | 0.826 | -0.185 | -1.470 | 0.154 | 0.916 |
| PROD | Envt | CR | -0.449 | -1.777 | *0.087 | 0.775 | -0.188 | -1.077 | 0.291 | 0.823 |
| PROD | Envt | Transactional | 1.137 | 1.951 | *0.061 | 0.300 | -0.732 | -0.982 | 0.335 | 0.134 |
| PROD | Envt | Authentic | -0.344 | -1.357 | 0.187 | 0.739 | -0.061 | -0.442 | 0.662 | 0.900 |
| PROD | Envt | MAAS | 0.242 | 0.577 | 0.569 | 0.236 | -0.188 | -0.673 | 0.507 | 0.358 |
| SAT | Envt | Transformational | -0.425 | -1.910 | *0.067 | 0.791 | -0.091 | -0.585 | 0.564 | 0.859 |
| SAT | Envt | CR | -0.343 | -1.301 | 0.205 | 0.723 | -0.126 | -0.779 | 0.443 | 0.831 |
| SAT | Envt | Transactional | 0.834 | 1.622 | 0.117 | 0.382 | -0.297 | -0.402 | 0.691 | 0.065 |
| SAT | Envt | Authentic | -0.370 | -1.313 | 0.201 | 0.635 | 0.008 | 0.051 | 0.959 | 0.851 |
| SAT | Envt | MAAS | 0.274 | 0.692 | 0.495 | 0.224 | 0.045 | 0.165 | 0.870 | 0.314 |

Table 31: Moderation Regression effects of Environment at T0 and T2 on Other-Ratings Between Leadership behaviors and Leadership Outcomes for Control Group

* Difference is significant at the 0.1 level (2-tailed)

** Difference is significant at the 0.05 level (2-tailed)

The results in Table 31 for the control group showed that at T0 prior to the commencement of Presentation training and coaching program, the dynamic state of environment had significant negative impact between transformational behaviors (β= -0.525, p=0.022) contingent reward (β= -0.449, p=0.087) and transactional behaviors (β= 1.137, p=0.061) with Productivity. A significant negative relationship was also observed between Transformational behaviors (β= -0.425, p=0.067) with Followers' satisfaction with leader in a dynamic environment. At T2 the negative impact that the state of dynamic environment has on the relationships between leaders' behaviors and leadership outcomes *remained negative;* with no significant relationships sighted at T2 for the control group.

#### 4.5.4.4 Conclusion: Moderation Regression Tests

Our research study evaluated data derived on the Interaction-Moderation Regression effects of environment on relationship between leaders' transformational, contingent, transactional and authentic behaviors and leadership effectiveness between groups over time. The dynamism in the Environment resulted in a significant impact in reducing the strength of relationship between the conditions with leadership behaviors as seen in Table 29 between group and other-rated Transformation, Authentic and (close to significant) contingent reward leadership behaviors. In addition, the impact of the MBP appeared to have facilitated intervention group leaders to convert negative interaction effects to be positive between transformational, contingent, transactional and authentic leadership behaviors over time to enhance leadership effectiveness in producing results for productivity, extra effort and employee satisfaction with leadership. However, significant interactions were seen only in interactions between MAAS mindfulness with Employee Effort; and Contingent reward behaviors with Productivity and Employee Effort over time in the Intervention group.

As most participants were new to the concept of mindfulness, they would need time to explore and personalize the practice of mindfulness. It seems that experience with mindfulness requires gestation that goes beyond the three months of coaching. In addition, rate of learning varies between individuals, depending on the frequency of practice, level of interest and time invested to digest, reflect, explore, experiment and experience practice of mindfulness. The combination of these factors appears to contribute towards the non-significant results sighted in Table 30.

### 4.5.4.5 Moderation Test: Repeated ANOVA on Other ratings:

### Interaction-Moderating Effects on Group and Environment

| 360 Ratings | T0 | | | | | | T2 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Envt | | Group | | Group X Envt | | Envt | | Group | | Group X Envt | |
| **Leadership Behaviors** | F Value | p-value | F Value | p-value | F Value | p-value | F Value | p-value | F Value | p-value | F Value | p-value |
| Transformational | 0.439 | 0.510 | 2.713 | 0.105 | 1.770 | 0.189 | 0.052 | 0.820 | 8.876 | 0.004*** | 3.198 | 0.079* |
| Transactional | | | | | | | | | | | | |
| Contingent Reward | 0.453 | 0.504 | 3.750 | 0.058* | 0.912 | 0.344 | 0.000 | 0.992 | 7.924 | 0.007*** | 1.983 | 0.165 |
| Active Manage by Exception | 0.062 | 0.804 | 1.055 | 0.309 | 1.431 | 0.237 | 2.722 | 0.105 | 0.029 | 0.865 | 0.511 | 0.478 |
| Authentic | 0.066 | 0.798 | 3.435 | 0.069* | 1.664 | 0.202 | 0.007 | 0.934 | 11.945 | 0.001*** | 3.608 | 0.063* |
| MAAS | 0.637 | 0.428 | 0.620 | 0.434 | 1.964 | 0.167 | 1.377 | 0.246 | 0.060 | 0.807 | 0.424 | 0.517 |
| **Leadership Effectiveness** | | | | | | | | | | | | |
| Extra Effort from Followers | 0.141 | 0.709 | 3.035 | 0.087* | 1.579 | 0.214 | 0.164 | 0.687 | 6.209 | 0.016** | 4.381 | 0.041** |
| Productivity | 0.534 | 0.468 | 5.515 | 0.022** | 2.707 | 0.105 | 0.060 | 0.807 | 14.938 | 0.000*** | 5.555 | 0.022** |
| Followers' Satisfaction with Leaders | 1.174 | 0.283 | 1.139 | 0.290 | 1.305 | 0.258 | 0.089 | 0.767 | 14.862 | 0.000*** | 2.262 | 0.138 |

Table 32: Repeated Measure ANOVA Moderation effects of Environment at T0 and T2 on Other-Ratings Between Leadership behaviors and Leadership Outcomes for both Conditions

* Difference is significant at the 0.1 level (2-tailed)

** Difference is significant at the 0.05 level (2-tailed)

*** Difference is significant at the 0.01 level (2-tailed)

To further test hypothesis 5 and 6, Two Way ANOVA analysis was used to test the moderating role of volatile dynamic environment on leader's efficacy through transformational, transactional and authentic leadership behaviors. Results showed significant effects.

Table 32 presented significant interaction effects on other raters ratings between groups and environment at T2 showing that leaders' enactment of transformational ($F(1,57)=3.198$, $p=0.079$), authentic ($F(1,57)=3.608$, $p=0.063$) enhanced leadership effectiveness in producing significant results in generating productivity ($(1,57)=5.555$, $p=0.022$), and extra effort ($(1,57)=4.381$, $p=0.041$). Thus, partially supporting Hypothesis 5 and 6.

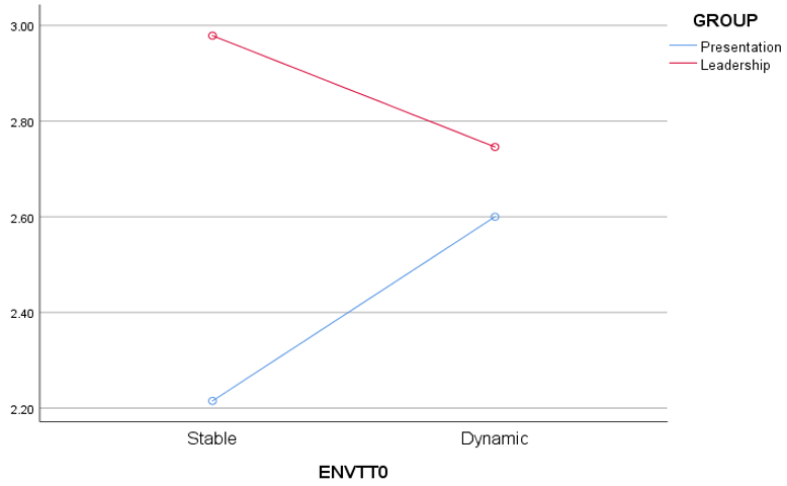



Figure 40: Interaction Effect of Transformational behaviors With Different States of Environment at T2

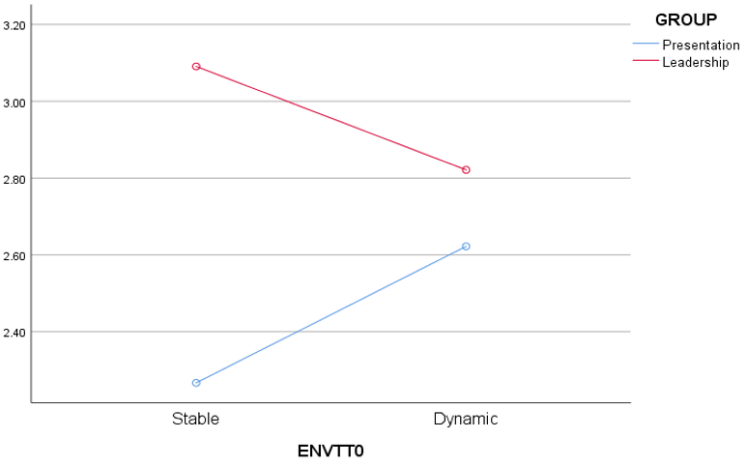



Figure 41: Interaction Effect of Authentic behaviors With Different States of Environment at T2

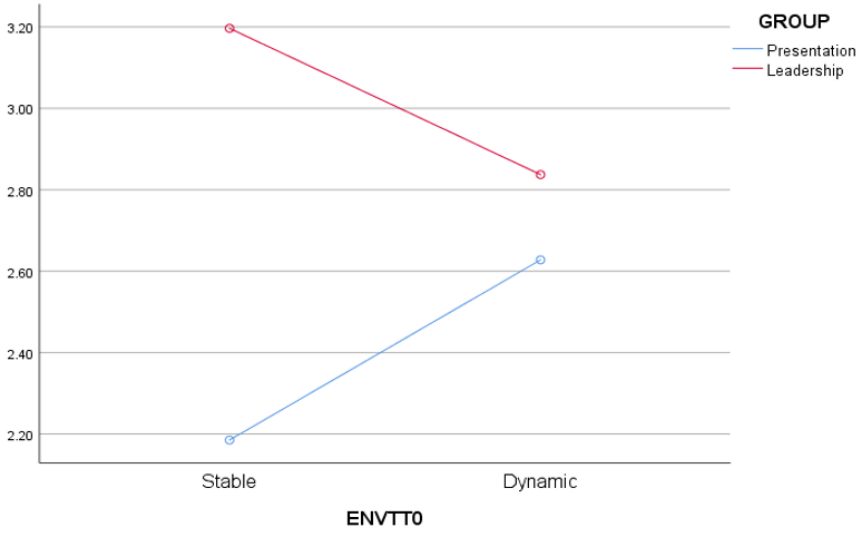



Figure 42: Interaction Effect on Productivity With Different States of Environment between groups at T2

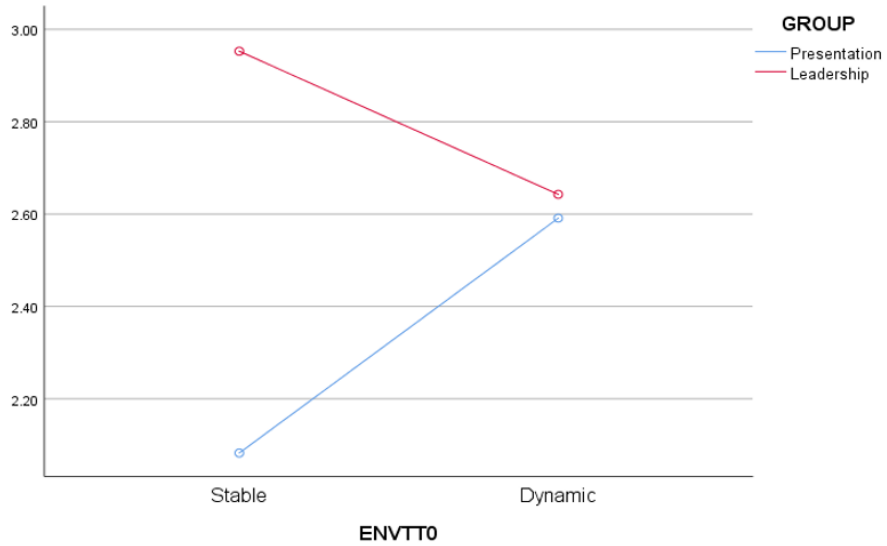


Figure 43 : Interaction Effect on Extra Effort With Different States of Environment between groups at T2.

### 4.5.4.6 Repeated ANOVA on Other Rating: Conclusion

We sighted higher other raters' ratings received by leaders consistently for the intervention group, compared to the control group in these four graphs depicted above for transformational, authentic leadership behaviors, that generate productive and extra effort leadership effectiveness. In particular, it was noted that leaders from the intervention group were seen to receive higher ratings in a stable than in a dynamic environment.

Thus, suggesting that leaders working in a stable environment were better able to mindfully enact their leadership behaviors, rather than in a dynamic environment. Conversely leaders from the control group working in a volatile environment tend to receive higher ratings in a dynamic rather than stable environment. Although the means of other raters' ratings provided for the leadership behaviors and leadership effectiveness variables to the control group were still lower than the intervention group; the gap between the other rater ratings for both conditions narrowed in dynamic environment.

### 4.5.4.7 Moderation Test: Mixed ANOVA on Other Ratings:

### Interaction-Moderating Effects between Group and Environment

| 360 Ratings | Group | | Time | | Envt X Time | | Group X Envt X Time | |
|---|---|---|---|---|---|---|---|---|
| **Leadership Behaviors** | F Value | p-value | F Value | p-value | F Value | p-value | F Value | p-value |
| Transformational | 6.785 | 0.012** | 8.020 | 0.006*** | 0.222 | 0.639 | 0.254 | 0.616 |
| Transactional | | | | | | | | |
| Contingent Reward | 6.898 | 0.011** | 3.910 | 0.053* | 0.643 | 0.426 | 0.283 | 0.597 |
| Active Manage by Exception | 0.206 | 0.651 | 1.720 | 0.195 | 2.254 | 0.139 | 3.498 | 0.067* |
| Authentic | 9.856 | 0.003*** | 5.067 | 0.028** | 0.027 | 0.869 | 0.290 | 0.592 |
| **Leadership Effectiveness** | | | | | | | | |
| Extra Effort from Followers | 5.805 | 0.019** | 2.737 | 0.104 | 0.000 | 0.999 | 0.514 | 0.477 |
| Productivty | 11.520 | 0.001*** | 1.041 | 0.312 | 0.383 | 0.538 | 0.371 | 0.545 |
| Followers' Satisfaction with Leaders | 7.044 | 0.010** | 1.998 | 0.163 | 0.903 | 0.346 | 0.026 | 0.872 |

Table 33: Mixed ANOVA Moderation effects of Environment at T0 and T2 on Other-Ratings Between Leadership behaviors and Leadership Outcomes for both Conditions

* Difference is significant at the 0.1 level (2-tailed)

** Difference is significant at the 0.05 level (2-tailed)

*** Difference is significant at the 0.01 level (2-tailed)

Hypothesis 5 predicts that an increase in volatility in the environment, would strengthen the positive relationship between effectiveness of mindfulness practice and the enactment of transformational, authentic and contingent reward transactional leadership behaviors to derive leadership effectiveness.

Table 33 results demonstrated that the training and coaching programs do help leaders of both groups to enact leadership behaviors more frequently, except for management by exception to facilitate leadership outcomes. It was further noted that the impact of training and coaching intervention on the leadership behaviors was more prominent in the intervention group viz a viz control group at T2. These predictions were supported with regression results derived from Table 26-28 with the application of Mediation Regression.

It was also expected that the reliance on transactional leadership management by exception behaviors would be reduced in turbulent conditions. However, significant reduction was sighted for the intervention group leaders in their enactment of transactional manage by exception behaviors only in a stable environment; but not in a dynamic environment illustrated in Figure 44 below. Perhaps the dynamic environment did not allow leaders time

to exercise pre-existing self-awareness; instead the dynamic environment could have changed the leaders to be more instantaneous adopting a trial and error approach; and require decisions to made on the fly in the field.

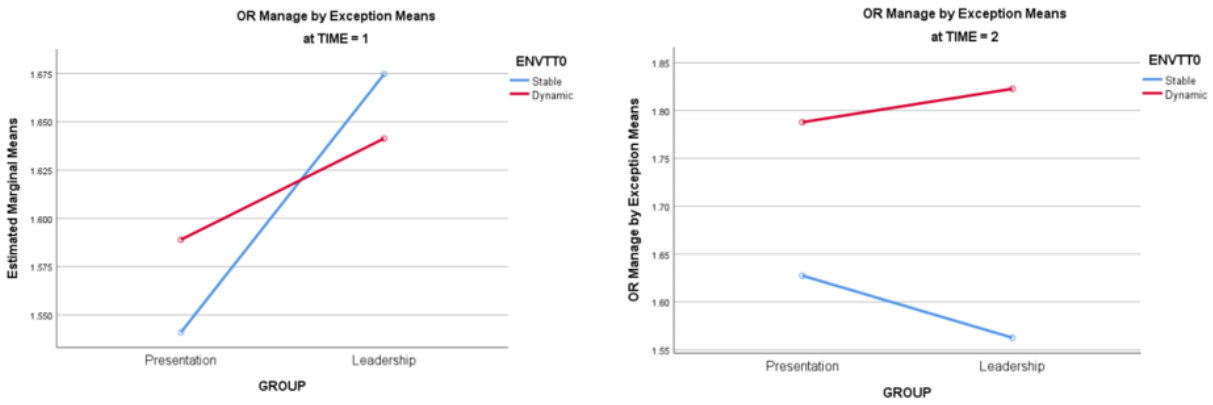



Figure 44 T0 vs T2 Transactional manage by exception behaviors in Stable vs Dynamic Conditions

### 4.5.3.8 Conclusion: Mixed ANOVA Moderation Test on Other Ratings

It was interesting to note in Figure 44 that other raters' ratings for the intervention group leaders' transactional manage by exception behaviors reduced substantially under stable environment and increased under dynamic environment at T2. In contrast, other raters increased ratings of control group leaders on their exercise of management by exception behaviors in both stable and dynamic environment. Suggesting that mindfulness-based training could have enabled intervention group leaders to mindfully reduce their adoption of transactional manage by exception leadership behaviors especially in a stable environment. As the results showed only decrease in management by exception behaviors under stable environment and not in a dynamic environment, Hypothesis 5 was hence not sufficiently supported.

Hypothesis 6 predicted that in a dynamic environment there would be a stronger positive impact seen between leadership behaviors mindfully enacted by the intervention group

viz a viz control group to bring effective leadership outcomes and prevent developmental regression as a positive outcome of the intervention program.

| 360 Ratings | T0 | | T2 | |
|---|---|---|---|---|
| | Group X Envt | | Group X Envt | |
| **Leadership Behaviors** | F Value | p-value | F Value | p-value |
| Transformational | 1.770 | 0.189 | 3.198 | 0.079* |
| Transactional | | | | |
| Contingent Reward | 0.912 | 0.344 | 1.983 | 0.165 |
| Active Manage by Exception | 1.431 | 0.237 | 0.511 | 0.478 |
| Authentic | 1.664 | 0.202 | 3.608 | 0.063* |
| MAAS | 1.964 | 0.167 | 0.424 | 0.517 |
| **Leadership Effectiveness** | | | | |
| Extra Effort from Followers | 1.579 | 0.214 | 4.381 | 0.041** |
| Productivity | 2.707 | 0.105 | 5.555 | 0.022** |
| Followers' Satisfaction with Leaders | 1.305 | 0.258 | 2.262 | 0.138 |

Table 34: Repeated Measure ANOVA Interaction effects of Group with Environment at T0 and T2 on Other-Ratings Between Leadership behaviors and Leadership Outcomes

* Difference is significant at the 0.1 level (2-tailed)

** Difference is significant at the 0.05 level (2-tailed)

*** Difference is significant at the 0.01 level (2-tailed)

Repeated two-way ANOVA results elaborated in Tables 32 with interactions between group and environment factors synopsized here in Table 34 showed significant results of the interactive impact of Transformational and Authentic leadership behaviors, with Employee Effort and Productivity in a dynamic environment at T2. However, as there were non-significant moderation regression results noted in Table 32 for the impact of Leaders' behaviors with all three leadership effectiveness outcomes over time, Hypothesis 5 and 6 were not sufficiently supported.

# CHAPTER 5: CONCLUSION

This final chapter explores contribution towards literature discussed in Chapter 2, followed by addressing the limitations of the study. Next the practical contributions and implications of MBP to the development of leadership in the organizational context are discussed. Final discussion is on the recommendations for future research.

## 5.1 Contribution to Literature

Our research study extended leadership literature by conducting a quasi-experimental design to evaluate the impact that a structured mindfulness-based program had in influencing leaders' behaviors to improve leadership effectiveness. An important contribution by this study lies in the sampling procedures and the research design used to examine a cross section of several organizations from varied industries, such as engineering, education, logistics, trading and professional services across two different points in time. The current intervention took place realistically in a dynamic context within normal organizational activities and changes taking place in both the control and experimental groups, within the same organizations concurrently. Intervention method included three monthly on-going one-hour coaching sessions supporting personal leadership development over three months. The intervention training and coaching program addressed the issue highlighted by Kelloway and Barling, (1996) that leadership training needs to find a sustainable approach that could fit into the leaders' regular routines.

This research study contributed to existing literature on the practice of mindfulness in leadership behaviors specifically to provide leadership effectiveness in real business organization settings. Statistical findings derived through the field quasi-experiment contributed to study of mindfulness in leadership by providing detailed analysis of the results collected from the participants. For example, existing literature supports that mindfulness is related to leadership development; this study provided additional insights with statistical

analysis of the actual process of change in leader's behaviors perceived by the leaders and other co-workers, before and after MBP at workplace. These findings were particularly important as they offered other organizations in-depth insights to the effects that MBP had in calibrating leaders' experience of specific behaviors mindfully to enhance their leadership effectiveness. We found significant interactive effect for leaders who have attended MBP and their followers' satisfaction for their leadership at Time 2.

This is one of the few rare field quasi-experimental studies that explored the effects in a real dynamic working environment. The study added a revelation that the role of mindfulness was more pronounced in a stable environment viz a viz dynamic environment. This could be a result of being able to exercise higher self-awareness and consciousness when responding in a stable environment; versus a dynamic environment that calls for prompt reactions to demanding situations.

The study contributed to literature with findings that supported the importance of establishing an intentional process of nurturing the practice of mindfulness to derive sustainable behavioral changes. Analysis of the statistical results and realizations obtained from discussions with leaders during coaching sessions were consistent in demonstrating the positive effects mindfulness had in influencing leaders to be more self-aware and self-regulated in their choice of behaviors when responding to co-workers.

The result was evident when we analyzed other ratings and saw comparatively higher T values, P values and Means of leaders' behaviors in the intervention group viz a viz the control group over time, as presented in Tables 2, 3 and 4. Significant effects were seen in Table 16 of Repeated ANOVA test results only in intervention group others' ratings. In addition, we observed significant results for the intervention group presented in Table 17, when we conducted between-subjects ANOVA with T2 other raters' ratings.

In summary, we derived statistical findings that gave new useful perspectives on the

process of improving leadership effectiveness by cultivating self-awareness, self-realization, self-regulation and self-actualization when nurturing leaders' behaviors via MBP intervention.

## 5.2 Practical Implications and Contributions

Numerous research studies on leadership proposed that leadership is an intuitive learning process and that leaders learn to improve their performance by rationalizing their experiences on their own (Kolb, 1984; Boud & Walker, 1991). This research study contributed to literature by challenging this assumption and proposed that a structured Mindfulness-Based training coupled with coaching could enhance the learning and leadership development outcomes. With the results derived from this empirical field quasi-experiment, we extended the argument that leadership training and coaching program based on the practice of mindfulness could potentially facilitate leaders to engage reflective responses rather than automatic habitual reactions to further augment leadership effectiveness.

In addition, this study uncovered empirical evidence that provided practical implications for researchers and practitioners in the realm of leadership. Findings supported the notion that leadership effectiveness could potentially be enhanced in a short span of time through an integrated mindfulness-based leadership program that embodied mindfulness practices with leadership behaviors via executive coaching (Kelloway & Barling, 1996). Thus, supporting that it could be beneficial for organizations to consider instituting a MBP as part of leadership development strategy and to design performance management systems that encourage and reward participation in MBP to enhance return on investment in leadership development initiatives.

The combined use of MAAS, 360 multi-rater feedback MLQ and ALQ instruments facilitated a scientific and sensitive mechanism to track changes in perceived leadership effectiveness over time. The involvement of multi-rater methodology addressed the limitations and overreliance on self-reports; resulting mainly from the challenge of maintaining rater

consistency over time (Grant et al., 2010). In addition, these measurement instruments provide coaching a reliable, measurable discriminating mechanism to connect the effects of mindfulness-based training and coaching to leadership effectiveness; which would otherwise have been challenging to measure and attribute to individual performance.

Results appeared to support the notion that a MBP combined with leadership training and coaching had predictive effect between practice of mindfulness and the malleable choice of leaders' behaviors to bring enhanced leadership effectiveness.

## 5.3 Discussion on Limitations of the Research Study

We acknowledge that there are a number of limitations in our study. Hence the results need to be interpreted in light of these limitations.

### 5.3.1 One limitation of this study is that the efficacy of the intervention program is reliant on the execution by the same person as the researcher and trainer

The quality of delivery of training and coaching is reliant on the trainer's knowledge with the curriculum, experience with mindfulness and ability to be respond intuitively to participants' learning curve. On the other hand, the trainer can bring a balanced approach by integrating depth of knowledge gained through research with practical teaching experience to the program. Hence facilitating experiential learning and opportunities for trainer and trainee to uncover a range of mindfulness-based mechanisms for action that could assist in addressing negative or fostering positive desired behavioral habits. With the knowledge base and training skills set of the trainer, the coaching sessions can be attuned to the participant's depth of mindfulness experience in addressing challenges at the workplace.

Recordings of training and coaching sessions enabled verification of trainer's competence and compliance with the mindfulness-based program; thus, enhancing internal validity of the study design.

### 5.3.2 Basis of Sample Selection.

As randomized allocation to intervention and control group is an extremely rare and difficult task in real life field research (Grant and Cavanagh, 2007); this research study involved a sample of more than 60 business managers, who were either self-selected or assigned by their general managers into the two conditions. Despite the sample not being random, there was no significant difference between the two cohorts as tested with Levene Test with the aggregated other raters MLQ scores at Time 1; suggesting that the assignment of leaders to the two conditions did not unduly influence the study. The sample size was adequate for the study; however, additional data from a larger sample size could facilitate increase in reliability.

It was not feasible to assign participants randomly due to availability, organization's logistical needs and work exigencies. Despite non-randomization, the conduct of a t test showed no signs of unduly influence as no significant differences were noted between the control and intervention groups at Time 0 in their MAAS nor aggregated ALQ and MLQ scores.

As leaders were assigned to attend either the leadership course or the presentation course, there was a possibility that due to assignment, leaders may not be allocated to the course they are interested in. To address the risk of demoralization, a debrief was given to both group participants and everyone was offered the other training that they have not attended earlier.

### 5.3.3 Common-Sourced-Common-Method Bias

**Many research studies have relied on ratings of leadership and outcomes by a single source rather than multiple sources and multiple methods.**

This result in common-sourced-common-method bias (Bycio et al., 1995); which may render correlations amongst variables resulting from the same person responding to the variety

of questions. This research experiment collected self-ratings for leadership behaviors (MLQ and ALQ) and mindfulness attention scores (MAAS). But it did not just rely on a single-source data as other raters were involved in rating the leader's behaviors; thus, enhancing the reliability of the results. Other raters for leader participants from participating organizations were selected by the General Managers.

However, due to the extensive collection exercise of 360 evaluations from multi-raters, short delays were experienced inevitably in some cases at the start of the experiment, caused by practical work exigencies or staff travelling schedules. We tried to retain integrity of the research method, by commencing individual coaching only after all other raters' 360 evaluations were collected.

Raters consistency is a common issue for 360 evaluations, as there could be natural attrition of raters over time and with new raters added.; hence affecting the validity of the study. As there were few attritions, the rater consistency for both groups remained high at 95% for Leadership group and 98% for the presentation group. We removed from the study both T0 and T2 ratings of raters who left their organizations.

| | 360 Rater Information | | 360 Rater Information | |
|---|---|---|---|---|
| Number of individuals By Source | Leadership Time 0 | Leadership Time 2 | Presentation Time 0 | Presentation Time 2 |
| Total number of raters | 57 | 57 | 55 | 55 |
| Attrition of raters | 3 | 3 | 1 | 1 |
| Rater consistency | 95% | 95% | 98.2% | 98.2% |

Table 35: MLQ 360 Rater information for control and treatment groups at T0 and T2.

### 5.3.4 Coupled Training and Coaching Joint Intervention Mechanism

This research study aims to bridge the gap between theory and practice of mindfulness in leadership development by providing a structured mindfulness-based leadership training and coaching program. Hence guiding leaders through the transference of knowledge through group training and individual coaching on the practice of mindful leadership.

Both the treatment and control groups underwent two days of group training and three one-hour individual coaching sessions on the respective topics. This experiment focused on evaluating the impact that mindfulness-based leadership training and coaching has on the leaders' behaviors and work performance in the intervention group viz a viz the usual training and individual coaching for presentation skills. As the effects of the various training and coaching mechanisms specific to the programs were not differentiated, it was not possible to determine which of these mechanisms was the most effective. Contrasting different MBP intervention mechanisms separately could have provided comparative data on the relative effectiveness of coaching viz a viz training respectively.

We could implement treatment conditions that decouple mindfulness-based leadership training from individual coaching in future research, that allows for the distinct examination of effects between the respective intervention components for effectiveness. Such as adding two other treatment groups, each undergoing either training or coaching intervention only could enable differentiation of the effective elements of the respective intervention mechanism.

In the process of coaching, the practicing time for the respective skills of the two conditions could have been measured. Information on the time invested into practice of skills would have provided added insights and perspectives to the results derived.

### 5.3.5 External Validity

The research evaluates External Validity by examining whether the training and coaching intervention program can lead to sustainable impact on leaders' behaviors in dynamic real-world conditions.

We measure the effects by comparing results of 360 leadership ratings pre-and three months' post training and coaching. Though we predicted that effects could be seen in the 360-evaluation conducted three months after intervention, it would be interesting to examine whether the effects could retain over a longer period of time perhaps 6 months or 12 months

later. Especially with a larger sample size, as this would enhance the statistical generalization. A longitudinal research would be ideal; this was however not practical due to work disruption and staff turnover in real business organization setting.

### 5.3.6 Levels of Outcome

We kept the focus of this experiment to two levels of outcome in assessing effectiveness of carrying out the mindfulness-based leadership training and coaching program.

- First, if the program with mindfulness-based training and coaching were to be effective, it would help **leaders** to crystallize their leadership role by implementing learnings on mindful enactment of leadership behaviors. Followers and co-workers would see positive changes to their personal leadership behaviors.
- Secondly, when leadership behaviors are enhanced, **coworkers'/followers'** satisfaction with the leader would increase, with effort and productivity enhanced.

It would have been interesting to conduct an additional test in future, on the effects that the intervention mechanisms may have on organization goals such as sales, profits, customer satisfaction and return on investment.

### 5.3.7 Choice of Mindfulness Techniques

Mindfulness has been historically defined as the state of consciousness derived through meditative practice (Conze, 1956). In support of this philosophy, contemporary mindfulness techniques such as mindfulness-based stress reduction by Kabat-Zinn (1990) and mindfulness based cognitive therapy by Teasdale (2000) incorporated meditation as core element of their mindfulness programs. Resulting in the two terms meditation and mindfulness being used interchangeably. In addition, due to Buddhist underpinnings in the mediation teaching process (Shonin et al, 2015), confusion may result from associating mindfulness with religion faith-based Buddhist context.

This research conducted was clearly secular and advocated mindfulness as a mainstream activity for everyone that comes from all faith, ethnic and cultural backgrounds. The program remained mindfulness-based as the trainer stayed committed to a regular meditation practice and engaged participants experientially by attuning to respective individual meditation habits and depth of meditation experience, free from the religion context. To ensure universal access to this secular MBT, lower dose of meditation was introduced in the form of quiet natural activities such as body scan, breathing and movement meditation.

The focus of MBP was to be used as a clinical intervention tool. The program did not emphasize on meditation; though we did encourage regular practice of physical and psychological scans. Meditation was introduced alongside other useful mindfulness techniques to facilitate leadership development and cognitive training. Participants appreciated being respected for their beliefs and develop experiential learnings when given the option to adopt any of the mindfulness techniques appropriately to their personal context.

### 5.3.8 Instruments used in Manipulation Process

MLQ was used as a useful quantitative operationalized measure of constructs. The relationship between the leadership behaviors and Leader's effectiveness was dependent on the validity of MLQ to adequately capture sufficiently and accurately the essence of the constructs (Lowe, Kroeck & Sivasubramaniam 1996). MLQ were critiqued for using common source to assess leader behaviors and outcome (DeGroot et al., 2000). In addition, Yuki (2002) highlighted that the definitions of Management by exception constructs require further investigation and clarity. However, MLQ still remains as one of the most validated and well researched leadership assessment tools available to date (Bass, 2007).

MAAS instrument is a reliable and popular measure for the state of mindfulness (Brown & Ryan, 2003). As a self-report, MAAS mainly tests for self-awareness and some critical questions applicable to the work place were not covered; such as the leaders' ability to decenter

or be non-judgmental. In addition, MAAS did not account for the pre-existing state of mindfulness and varying state of experience with practice of mindfulness. We noted in Table 22 that the unstandardized coefficients of regression and R Square data for the control group were steeper and larger compared to the intervention group in Table 21, between transformational, contingent reward and authentic leadership behaviors and the leadership effectiveness variables for other ratings. However, as the mean values of the leadership behaviors and effectiveness outcomes for the intervention group were higher that the control group at both T0 and T2, there may be other dimensions of behaviors or potential moderators that were not explored in the measures used in this study that could further explain for the leadership effectiveness for the intervention group. Such as attitude, commitment to the program, cognitive capability, degree of being openness to change, development readiness and level of skills with practice of mindfulness.

### 5.4 Future Directions

This empirical research study aims to shed light on aspects of how the MBP work at regulating individual leader's behaviors to garner employee satisfaction for own leadership and yield additional effort in employee work performance. The research study operationalized the underlying constructs into valid psychometrics so that the variables predictive utility could be statistically tested formally in a leadership training and coaching context. This methodical approach blending scientific measurement with interpersonal coaching elements was a promising avenue towards identifying intervention mechanisms effective for change management in challenging environment. Evidences collected appeared to confirm trainability of leaders and validated the effectiveness of individual executive coaching as an effective leadership development process. Thus, supporting the notion that mindfulness-based leadership training and coaching program predicted the enhancement of leadership behaviors to derive positive effective leadership outcomes.

The inductive approach adopted in this study contributed to understanding of the leadership development process. In future research, it would be useful to identify which elements of the intervention program facilitated development of leadership behaviors to bring effective leadership outcomes, by decoupling training and coaching components in the MBP.

While the study did embed the intervention programs within the organization in the field-based experimental design, the focus was placed mainly on the individual leader and their co-workers. It was observed that key influencers do exist in organizations who support their colleagues in their development into effective leaders. It was further noted that leaders' behaviors, state of mindfulness and the environment all work to influence and develop learning effects on MBP participants individually and as a group. The learning effect translated into a positive social contagion that caused a ripple effect on the organization. It would be interesting to evaluate the mimetic function in group behaviors further in future. Even though this research did not study group processes such as group potency and collective efficacy; future experimental research could further examine wheth er embedding group support mechanism into organization could bring sustainable performance outcomes in the longer run.

## 5.5 Conclusion

This research is one of the few empirical field studies conducted at work place to examine the possibility of augmentation effects that mindfulness-based training and coaching intervention could foster in leaders' behaviors and leadership effectiveness. Second, this study measured beyond self-report to include other co-workers' perceptions of the changes seen in productivity, employee effort and followers' satisfaction with the leader resulting from the leader's mindful malleable adoption of leadership behaviors.

Third, the results derived from the quasi-experimental study provided support the notion that leaders' behaviors can be trained and emphasized the efficacy of executive coaching in the process. As results were measured with the use of multi-rater at multi-levels

feedback grounded on leadership theory, with changes on the perceived leadership behaviors and effectiveness tracked between points in time; the utility of this intervention process was reliable in providing valid verifiable outcomes (Grant et al., 2010).

Finally, this research study was carried out based on a scientific structured training methodology, assessment tool and executive coaching process that provided a vigorous, verifiable and objective method for training and grooming mindful leadership behaviors. Thus, providing a scientific mindfulness-based methodology that can be easily adopted in organizations as part of their leadership development process.

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