



---

# THE POWER OF VULNERABILITY

---

The Contribution of Vulnerability on Leadership Effectiveness in  
Global Virtual Teams



BACHELOR THESIS

RAMONA TRAN



JUNE 8, 2021

ZURICH UNIVERSITY OF APPLIED SCIENCES SCHOOL OF MANAGEMENT AND LAW

Faculty Advisor: Mag. Elias Jehle, CEMS MIM

## Management Summary

There is a great deal of research on leadership effectiveness. While it is argued that there is a widespread perception that vulnerability is a weakness, the literature suggests courageous leadership that harnesses the power of vulnerability to be effective. Research on vulnerability on leadership effectiveness is minimal. Therefore, this research study explores whether vulnerability shown has implications for leadership effectiveness in the context of global virtual teams (GVT). Furthermore, this paper makes contributions with implications for existing theories and practices in leadership in GVTs.

To test the hypotheses of this thesis, a survey was conducted among 106 leaders and employees working in a GVT with different backgrounds and locations. Using empirically validated instruments, the questionnaire was designed to collect data on the four main research themes systematically: perceptions of vulnerability in leadership, participants' level of demonstrated vulnerability, the level of trust and leadership effectiveness, measured by specifically defined outcomes of effective leadership and perceived leadership effectiveness (PLE) of subordinates.

The research empirically validates that the two constructs of vulnerability and trust are interrelated and influence each other. It shows insights on vulnerability perceptions in GVTs and significant results in two areas: trust and leadership effectiveness in GVTs and vulnerability on leadership effectiveness in GVTs.

At the theoretical level, derived from several leadership theories that include trust and similar concepts such as vulnerability as a major component of leadership effectiveness, insights were gained into the foundations on which the multidimensional construct of vulnerability as a driver of trust is built. The findings provide evidence that trust is the driving force behind the majority of the other components. This research study also confirmed that vulnerability and trust are intercorrelated. Vulnerability is furthermore perceived as having a positive influence on GVTs.

The data evidenced that vulnerability, shown as a behavior, does not necessarily result in trust and vice versa. However, if so, vulnerability plays a role in building a cohesive, trusting community and therefore, can contribute to leadership effectiveness in a GVT. A decisive result is the proven importance of trust and vulnerability on the quality of communication in GVTs. A significant drawback is the lack of evidence regarding the influence on team performance in GVTs.

Moreover, this study highlights the limitations of the contribution of vulnerability in GVTs, which are argued to be mainly dependent on the barrier of opening up, the degree of emotional exposure and the individual's position within the GVT. Lastly, while vulnerability, i.e., courageous leadership, is highly welcomed in GVTs, trust is the driving force that can increase leadership effectiveness.

## Table of Contents

TABLE OF CONTENTS .....	IV
LIST OF FIGURES.....	VI
LIST OF TABLES.....	VI
ABBREVIATION DIRECTORY .....	VII
<b><u>1. INTRODUCTION.....</u></b>	<b><u>8</u></b>
1.1. PRACTICAL RELEVANCE .....	9
1.2. AIM.....	10
1.3. METHODOLOGY .....	10
<b><u>2. THEORETICAL EVIDENCE.....</u></b>	<b><u>11</u></b>
2.1. GLOBAL VIRTUAL TEAMS .....	11
2.2. LEADERSHIP EFFECTIVENESS .....	13
2.3. VULNERABILITY.....	23
2.4. PRELIMINARY CONCLUSION .....	32
<b><u>3. EMPIRICAL ANALYSIS .....</u></b>	<b><u>36</u></b>
3.1. HYPOTHESES .....	36
3.2. RESEARCH STRATEGY .....	37
3.3. RESEARCH DESIGN .....	38
3.3.1. MEASUREMENTS.....	39
3.3.2. CRITERIA FOR STATISTICAL ANALYSIS .....	42
<b><u>4. RESULTS, FINDINGS AND DISCUSSION.....</u></b>	<b><u>44</u></b>
4.1. PERCEPTION OF VULNERABILITY IN GVTs.....	45
4.1.1. NEGATIVE PERCEPTIONS.....	46
4.1.2. NEUTRAL PERCEPTIONS .....	46
4.1.3. POSITIVE PERCEPTIONS.....	46
4.2. LEADERSHIP EFFECTIVENESS IN GVTs.....	46
4.2.1. VULNERABILITY AND TRUST .....	49
4.2.2. TRUST AND OLE .....	51

<b>4.3. VULNERABILITY AND LEADERSHIP EFFECTIVENESS IN GVTs .....</b>	<b>53</b>
<b>4.3.1. VULNERABILITY AND PLE .....</b>	<b>54</b>
<b>4.3.2. VULNERABILITY AND OLE.....</b>	<b>55</b>
<b>4.4. DISCUSSION OF RESULTS .....</b>	<b>56</b>
<b><u>5. LIMITATIONS AND FURTHER RESEARCH.....</u></b>	<b><u>62</u></b>
<b><u>6. CONCLUSION.....</u></b>	<b><u>64</u></b>
<b><u>7. REFERENCES.....</u></b>	<b><u>66</u></b>
<b><u>8. APPENDICES .....</u></b>	<b><u>79</u></b>
<b>8.1. SUPPORTING LITERATURE PRELIMINARY CONCLUSION .....</b>	<b>79</b>
<b>8.2. CORRELATION TABLE OVERVIEW .....</b>	<b>80</b>
<b>8.3. PERCENTAGE RESPONSES OF INDIVIDUAL LEVS.....</b>	<b>81</b>
<b>8.4. PERCENTAGE RESPONSES OF PLE BY SUBORDINATES .....</b>	<b>83</b>
<b>8.5. SURVEY QUESTIONS .....</b>	<b>84</b>
<b>8.6. TRANSCRIPT OF ANSWERS .....</b>	<b>88</b>
<b>8.7. DECLARATION OF AUTHORSHIP.....</b>	<b>91</b>

## List of Figures

Figure 1: Identified Influences in Literature.....	35
Figure 2: Conceptual Framework .....	36
Figure 3: Distribution of Perceptions of Vulnerability in GVTs.....	45

## List of Tables

Table 1: Behaviors for Leadership Effectiveness in Teams .....	16
Table 2: Measurements of Leadership Effectiveness Summary .....	21
Table 3: Components of EQ with Similarities to Vulnerability .....	25
Table 4: Participants Demographics .....	38
Table 5: Descriptive Analysis; Demonstrated Vulnerability .....	47
Table 6: Vulnerability Questionnaire Score .....	47
Table 7: Descriptive Analysis; Trust .....	48
Table 8: Trust Questionnaire Score .....	48
Table 9: Goodness of Fit Statistics; Vulnerability and Trust .....	49
Table 10: Questionnaire Scores of Individual LEVs.....	50
Table 11: Correlation Analysis of Individual LEVs.....	50
Table 12: Correlation Analysis of Trust and Individual LEVs .....	51
Table 13: Goodness of Fit Statistics; Trust and LEVs .....	52
Table 14: AgLV Trust and AgLV OLE Questionnaire Score .....	53
Table 15: Goodness of Fit Statistics; AgLV Trust and OLE.....	53
Table 16: AgLV Vulnerability and AgLV PLE of Subordinates Questionnaire Score..	54
Table 17: Goodness of Fit Statistics; Subordinates Vulnerability and PLE.....	54
Table 18: AgLV Vulnerability and AgLV OLE Questionnaire Score .....	55
Table 19: Goodness of Fit Statistics; AgLV Vulnerability and OLE.....	55
Table 20: Supporting Literature on Preliminary Conclusion .....	79
Table 21: Questionnaire Score Correlation and Significance Summary .....	80
Table 22: Descriptive Analysis; Quality of Communication .....	81
Table 23: Descriptive Analysis; Job Satisfaction .....	81
Table 24: Descriptive Analysis; Organizational Commitment.....	82
Table 25: Descriptive Analysis; Team Performance .....	82
Table 26: Descriptive Analysis; PLE of Subordinates .....	83

## Abbreviation Directory

---

<b>AgLV</b>	Aggregate Level Variables
<b>EQ</b>	Emotional Intelligence
<b>FFM</b>	Five-Factor Model
<b>GVT</b>	Global Virtual Team
<b>LEV</b>	Leadership Effectiveness Variable
<b>LMX</b>	Leader-Member Exchange Theory
<b>MSQ</b>	Minnesota Satisfaction Questionnaire
<b>OLE</b>	Overall Leadership Effectiveness
<b>PLE</b>	Perceived Leadership Effectiveness
<b>PLES</b>	Pastoral Leadership Effectiveness
<b>VT</b>	Virtual Team

---

## 1. Introduction

The rise of communication technologies and globalization (Holton, 2001, p. 36) and the global COVID-19 pandemic (Jackowska & Luring, 2021, p. 10) directed today's workforce towards an increasingly global virtual environment. According to Jackowska and Luring (2021, p. 11), the COVID-19 pandemic began in early January 2020 in many parts of Asia, then spread to Europe in February and then to North and South America. Many millions of workers were affected, forcing them to adapt to digital collaboration replacements quickly.

Organizations are growing their focus on global virtual relationships and research of virtual teams (VT) was and is a field of growing interest (Gilson, Maynard, Vartiainen, Hakonen, & Young, 2014, p. 1323). VTs can overcome strategic, operational, or business projects while team members simultaneously carry out tasks across different geographical locations (Lee-Kelley & Sankey, 2008, p. 60-61). Furthermore, with the rise of VTs, organizations could gather the knowledge of their internal employees and partners (Jimenez, Boehe, Taras, & Caprar, 2017, p. 342) and thus, meet the demands of the global, competitive environment.

Even though global virtual teams (GVT) are highly efficient, they can hold issues that are not found in face-to-face team settings (Daim et al., 2012, p. 119-211). Like all teams, VTs need a strong base of mutual trust and cooperation to be effective (Hacker, Johnson, Saunders & Thayer, 2019, p. 2; Holton, 2001, p. 45). Physical, cultural and temporal differences among team members can cause problems and therefore, leadership plays a crucial role in this setting (Kayworth & Leidner, 2002, pp. 7-41; Malhotra, Majchrzak, & Rosen, 2007, pp. 60-70; Martins, Gilson, & Maynard, 2004, pp. 805-835; Morgeson, DeRue, & Karam, 2010, pp. 5-39).

Previous research has shown that influential leaders often show a high degree of empathy towards their team members and appreciate the opinions of their subordinates (Avolio, Kahai, & Dodge, 2001, pp. 615-668; Kalsoom, Khan, & Zuba, 2018, pp. 23-27). The collapse or breakdown of trust, communication, leadership and technology can have serious consequences and must be prevented (Daim et al., 2012, p. 201).

Various scholars argue that vulnerability poses a key hallmark of successful and effective leadership (Brown, 2015, pp. 208-212; Couris, 2020, pp. 248-251; Deb & Chavali, 2010, pp. 43-60). Brown (2015, pp. 46-100) argues that vulnerability is closely related to empathy and trust. The experiences that enable an individual to be empathic



and trusting cannot be accessed without it and, therefore, opportunities for building trust and connections are neglected. However, how can the courage to be vulnerable be crucial for business and effective leadership, even though widely seen as a weakness?

It is commonly believed that leaders are authoritarian, perfect and invulnerable (Brown, 2018, p. 231; Clare, 2018, p. 64). Nevertheless, current literature suggests courageous or daring leadership (Brown, 2018, p. 39; Jones & Davis, 2020, p. 35), which is strongly dependent on the decision to demonstrate vulnerability (Brown, 2018, p. 555). Leaders demonstrate courageous leadership when they are willing to be vulnerable; even if it means they may fail, they are “all in” (Brown, 2018, p. 61).

### **1.1. Practical Relevance**

Since the ability to demonstrate vulnerability as a leader is strongly correlated with various outcomes such as transparency, empathy, relationship building and trust, suppressing it can hinder connection and trust (Brown, 2015, pp. 46-100, 2018, pp. 196-236). On the other hand, embracing vulnerabilities offers opportunities and builds trust and relationships between the leaders and their followers (Brown, 2018, p. 328). GVTs pose a very complex form (Morgan, Paucar-Caceres, & Wright, 2014, p. 5) and therefore, embracing vulnerability is especially important in these settings.

Scholars argue that these psychological traits are typically developed in face-to-face interaction through non-verbal and verbal communication (Guirdham, 2002, pp. 182-243; O’Hara-Devereaux & Johansen, 1994, pp. 197-265). Nevertheless, in GVT settings, face-to-face contact will always be limited or non-existent.

However, there is little information about the impact of vulnerability on leadership effectiveness within GVTs. Brown (2018) and Coyle (2018) argue that vulnerability has various positive outcomes within leadership and therefore, the question arises to what extent the courage to be vulnerable impacts leadership effectiveness in GVTs.

## **1.2. Aim**

The current study aims to explore the contribution of the courage to be vulnerable on leadership effectiveness in the context of GVTs. Leaders are mostly seen as perfect and bulletproof (Brown, 2015, p. 2, 2018, p. 70; Clare, 2018, p. 64) and therefore, demonstrating vulnerability can be sometimes tricky.

Various scholars argue that vulnerability is an essential part of successful leadership (Brown, 2018, p. 94; Deb & Chavali, 2010, pp. 43-60). The question is: What is the contribution of vulnerability on leadership effectiveness in the context of global virtual teams?

## **1.3. Methodology**

To obtain the best possible results for this paper, qualitative and quantitative data will be used to gather information. Firstly, definitions and concepts will be explained based on secondary research. An exploratory literature review will occur through books, articles or reports to explore the current research status on vulnerability in the context of leadership effectiveness in GVTs.

Hypotheses will be derived from the literature and pose a basis for empirical analysis. Qualitative and quantitative data will be collected through a survey, which will be conducted to gain insight information and test the previously defined hypotheses. Results will be outlined and interpreted. Finally, limitations and further research ideas are going to be discussed and conclusions will be drawn.

## 2. Theoretical Evidence

There is a great deal of research regarding global virtual teams (GVT) as well as leadership effectiveness. The following sections aim to outline the current state of research. However, research on vulnerability is limited. Therefore, similar concepts like vulnerability in the context of leadership effectiveness will be discussed.

### 2.1. Global Virtual Teams

**Virtual Teams:** As a powerful organizational structure emerging in the business environment of today, VTs are a result of the contemporary business world (Jimenez et al., 2017, p. 341).

The term “team” can be defined as a small number of people with complementary skills committed to the same degree to a common purpose and goal (Katzenbach & Smith, 1993, pp. 1-19). Furthermore, Powell, Piccoli and Ives (2001, p. 7) suggest that while teams are interdependent and integrated among members, group members are independent (Cameron & Green, 2019, p. 66-70).

Teams and therefore VTs, are driven by a common purpose and show high commitment to the common goal (Stratone & Vatamanescu, 2019, p. 453). VTs can also be considered a network organization form (Miles & Snow, 1986, cited in Horwitz, Bravington, & Silvis, 2006, p. 473).

As a result, VTs can be defined as geographically and organizationally dispersed workers who are brought together to complete an organizational task by a combination of telecommunications and information technologies (Townsend, DeMarie, & Hendrickson, 1998, p. 18). These might be video conferencing systems, e-mails, the internet, intranets and many more communication channels with various advantages, disadvantages, dynamics, problems and opportunities (Hiltz & Turoff, 1985, pp. 680-689).

**Global Virtual Teams:** Members of VTs can be located across time, space and cultures (Mowshowitz, 1997, pp. 30-37). According to Peters (1992, pp. 303-364), the members are spread because companies are expanding internationally, face stricter product development time constraints and hire more foreign-based subcontractors. These teams that operate across multiple and temporal boundaries can be described as GVTs (Jarvenpaa & Leidner, 2006, p. 3). GVTs, which include members from all over the world, are the most extreme example of VTs and are becoming increasingly common (Scott & Wildman, 2015, p. 14).

**Value of Virtual Teams:** In a constantly changing and dynamic business environment, VTs add value as they promise agility, responsiveness, lower costs and improved usage of human capital to meet ever-changing task requirements (Snow, Snell, Davison, & Hambrick, 1996, pp. 50-67; Mowshowitz, 1997, p. 34-35). VTs can take advantage of “just-in-time” talent and companies can instantly bring people together, no matter where they are or what they need to do (Jimenez et al., 2017, p. 342).

**Issues of Virtual Teams:** Research on VTs has traditionally focused on communication issues, behavioral issues, decision-making, coordination mechanisms and social and performance control (Horwitz et al., 2006, p. 474). In all VT settings, there are some issues that are not found in face-to-face team settings (Daim et al., 2012, p. 119-212). Like all teams, VTs need a strong base of mutual trust and cooperation (Hacker et al., 2019, p. 2-19; Holton, 2001, p. 45). Nohria and Eccles (1992, pp. 304–305) argue that organizations will probably need a completely new sociology, as VTs usually deal with a greater lack of mutual trust than in traditional teams, which is crucial for an effective team (Cascio, 2000, pp. 81-90; Holton, 2001, pp. 42-45).

**Communication:** Traditionally, leaders can communicate face-to-face with their subordinates and be more effective in delivering their messages (Fan, Chen, Wang, & Chen, 2014, p. 424). According to Morrison Smith and Ruiz (2020, p. 22), GVTs need to communicate and work asynchronously using communication technology. E-mails, electronic conferencing and voice mail are typical modes of communication but they only provide limited information and are not interactive (Andres, 2002, p. 41). Scholars argue that tasks are carried out without the possibility of immediate clarification or feedback (Carmel, 2002, p. 8; Crampton, 2001, p. 368) and that the low immediacy of communication in VTs can also lead to longer decision-making times (Andres, 2002, p. 41).

Horwitz et al. (2006, p. 476) additionally highlight the issue of different time zones. When team members work across time zones, the window of opportunity for communication shrinks. Thus, in GVTs, where team members are usually from different ethnic, national and organizational backgrounds, discussion and team interaction can be lengthy and confusing, resulting in poor interpretation and understanding (Johnson & Hiltz, 1990, pp. 739-764; Warkentin, Sayeed, & Hightower, 1997, pp. 975-996). Furthermore, the lack of social context cues in virtual communication has been linked to assertive and hostile language (Siegel, Dubrovsky, Kiesler, & McGuire, 1986, p. 176), which may have a negative effect on trust (Schilke, Reimann, & Cook, 2021, p. 15).

**Control:** According to Snow et al. (1996, p. 4), VTs need to develop adequate internal adaptations of critical characteristics such as a sense of purpose and leadership to work efficiently. Since organizational structures and systems can positively or negatively impact performance, achieving such a goal can also be frustrating. Carmel (2002, p. 7) further states that leaders in traditional teams can observe what is going on, exert direct control and can hold face-to-face meetings if necessary. Leaders of VTs still evaluate goals, policies and standards but only with a partial picture of what is going on since they are not physically present with the team.

Hence, temporal and geographic differences of GVTs pose significant challenges to leaders by requiring leadership skills to ensure the management of GVTs (Kayworth & Leidner, 2002, pp. 7-41; Malhotra et al., 2007, pp. 60-70; Martins et al., 2004, pp. 805–835; Morgeson et al., 2010, pp. 5-39). This is especially true since cultural differences, geographic distances and members' isolation can make collaboration even more challenging (Kayworth & Leidner, 2002, p. 26).

## **2.2. Leadership Effectiveness**

Leadership plays a crucial role in dealing with the issues affecting work in VTs outlined in the previous section (Kayworth & Leidner, 2002, pp. 7-41; Malhotra et al., 2007, pp. 60-70; Martins et al., 2004, pp. 805–835; Morgeson et al., 2010, pp. 5-39). To understand leadership effectiveness, it is essential to define the term leadership itself.

**Leadership:** Many researchers claim that leadership is a process (Kesting, Ulhøi, Song, & Niu, 2016, pp. 22-41; Malik, 2015, pp. 357-371; Stogdill, 1950, pp. 1-14). According to them, leadership is something that is learned and developed over time.

Malik (2015, p. 358) describes leadership as a process that is observable, understandable and spans across the personal, organizational and social levels. According to Kesting et al. (2016, p. 26), leadership includes enhancing and encouraging the self-esteem and motivation of an employee. It can be defined as a process in which a subordinate is motivated or influenced to achieve a particular goal.

Drucker (1988, p. 13) claimed that influencing others is based on motivation rather than coercion. Stogdill (1950, p. 3) said that leadership could be understood as a process or act of influencing a group to outline and achieve its objectives. Hemphill and Coons (1957, p. 7) describe leadership as a behavior in which an individual directs the activities of a group towards a shared goal.

Fiedler (1981, p. 624) claimed that leadership was when power and influence are applied to make people work and accomplish objectives. Katz and Kahn (1978, p. 528) stated that leadership could be defined as “the influential increment over and above mechanical compliance with the routine directives of the organization.”

According to Kotter (1988, p. 5), leadership is the process of moving a group in some direction through mostly noncoercive means. Prentice (2004, p. 143) and Gardner (1993, p. 38) both define leadership similarly, arguing that leadership is accomplishing goals through others. Bass and Stogdill (1990, p. 19) state that leadership is an exchange between two or more group members that often include establishing or restructuring the situation and members’ views and expectations.

According to the various leadership definitions, its features vary vastly. For this study, leadership is defined as follows: Leadership can be described as a process of social interaction where the leader’s power to influence the behavior of their subordinates can positively influence organizational effectiveness. Moreover, it is argued that leadership is an intrinsically emotional process in which leaders should understand the emotional states of their followers and attempt to evoke emotions and thereby manage them accordingly (Humphrey, 2002, pp. 493-504; Pescosolido, 2002, pp. 583-599).

**Leadership Effectiveness:** Like leadership, leadership effectiveness is difficult to define because it is considered a multidimensional concept that includes many components such as numerous organizational contingencies and personal and interpersonal behaviors (Cooper & Nirenberg, 2004, p. 851). Many studies regarding leadership effectiveness have been interpreted by Bass and Stogdill (1990) and they found a tremendous variation in the meaning.

For the purpose of this study, leadership effectiveness is defined according to Cooper and Nirenberg (2004, p. 848). They argue that leadership effectiveness is the successful application of personal influence that results in achieving shared goals to be personally satisfying to those involved. Moreover, it is vital to understand the difference between leadership effectiveness and perceived leadership effectiveness (PLE).

Ayman (1993) and Schein (1992) used a social-cognitive focus on leadership effectiveness. Thus, PLE is defined as “the process of being perceived as a leader by others” (Lord and Maher, 1991, p. 11). According to Ayman (1993, p. 153), the interaction between leader and subordinate is influenced by intrapsychic processes such as gender and culture. Gender and culture are important because they can influence a leader’s style, behavior, emergence and effectiveness in various ways.

In order to understand the theoretical background on leadership effectiveness better, common frameworks will be discussed. While various frameworks explain leadership effectiveness, the classical theories fall into one of three subcategories: Trait, behavioral or contingency theories (Deshwal & Mohammed, 2020, pp. 38-43). Furthermore, contemporary approaches (Winkler, 2010) and philosophical approaches have emerged (Bohl, 2019).

**Trait Theory:** According to the trait theory, effective leaders have certain innate qualities and characteristics, such as intelligence, social maturity, intrinsic motivation or certain attitudes towards human relationships (Khan & Nawaz, 2016, p. 2). Leaders are “born, not made” and most of the focus in the literature has been on identifying leadership traits to predict the success or failure of potential leaders.

Although this approach can be justified (Mann, 1959, pp. 241-270), the trait approach to leadership has lost significance because it neglects the leader’s specific actions and the situational aspects of leadership. According to Doyle (2021), a person must also have relevant skills, as the skills required to carry out a leader’s tasks and responsibilities can also be predictors of a leader’s effectiveness.

Technical, conceptual and interpersonal skills are required in most managerial positions (Katz & Kahn, 1978, pp. 320-435; Mann, 1959, pp. 241-270). Nevertheless, traits such as energy and stress tolerance help leaders deal with the fast-paced and never-ending demands of most leadership positions and frequent role conflicts and the pressure of making important decisions without sufficient information.

Leaders who are emotionally mature and have a high level of integrity are more likely to maintain cooperative relationships with their subordinates (Bass, 1990, pp. 19-31; Kirckpatrick & Locke, 1991, pp. 48-60; Yukl, 1989, pp. 251-289). Models and tools which are commonly used are the Five-Factor Model (FFM) (Hofstee, 1994) as well as the approach to emotional intelligence (EQ) by Goleman (1995).

The big five personality traits, neuroticism, extraversion, openness, agreeableness and conscientiousness, have been praised for their ability to simplify an otherwise complex set of personality traits. Judge, Bono, Ilies and Gerhardt (2002, p. 768) conducted a meta-analysis that found that leadership effectiveness was linked to some of these personality traits. Extraversion and conscientiousness are moderately and positively associated with leadership effectiveness and openness to experience strongly correlates with leadership effectiveness (Judge et al., 2002, p. 773).

Furthermore, according to Salovey and Meyer (1990, pp. 185-211), emotional intelligence, the ability to recognize and control one’s emotions, should not be underestimated. Self-awareness, self-regulation, motivation, empathy and social skills are part of emotional intelligence.

It is considered to be a critical factor in a leader’s ability to be socially effective (George, 2000, p. 1046; Mayer, Caruso, & Salovey, 1999, p. 294) and is furthermore described as a strong indicator of effective leadership (Boal & Hooijberg, 2000, pp. 515-549; George, 2000, p. 1046). Moreover, according to Humphrey (2002, p. 501), leaders who can influence a team’s emotional climate can strongly influence performance and thus be effective leaders.

**Behavioral Theory:** In comparison, according to Doyle (2021), the behavioral view of leadership is a theory that focuses on actual leadership behavior. According to this view, effective leadership can be characterized by certain observable activities.

Classic examples of the behavioral approach are Blake and Mouton’s managerial grid (Blake & Mouton, 1964), Mintzberg’s managerial roles (Mintzberg, 1973), Theory X versus Theory Y (MacGregor, 1960), managers versus leaders (Zalesnik, 1977) and transactional versus transformational leaders (Burns, 2012).

Some literature on this theory focuses on identifying critical behaviors or activities of successful team leaders (Katzenbach & Smith, 1993, pp. 1-19; Recardo, Wade, Mention, & Jolly, 1996, pp. 115-117). These typologies usually contain a list of several activities that are considered necessary for effective leadership. The following table provides examples of two typologies to illustrate this perspective on leadership effectiveness.

*Table 1: Behaviors for Leadership Effectiveness in Teams*

<b>Katzenbach and Smith (1993, pp. 1-19)</b>	<b>Recardo et al. (1996, pp. 115-117)</b>
• Provide meaningful goals	• Create a supportive environment
• Build confidence and commitment	• Develop trust
• Strengthen mix and level of skill	• Create and communicate a clear vision
• Manage outside relationships	• Act as a role model
• Create opportunities for others	• Select effective team members
• Do real work	

*Source: Adapted from Katzenbach and Smith (1993) and Recardo et al. (1996)*



Despite its wide acceptance, the behavioral approach assumes that a single leadership style is ideal for applying and disregards the multiple contingencies that may arise, such as group dynamics and task complexity (Kayworth & Leidner, 2002, p. 12).

**Contingency Theory:** The following leadership approach presented deals with these critics. According to Fiedler, cited in Deshwal and Mohammed (2020, p. 40), the contingency approach suggests that there is no single best leadership style and that effective leadership is based on a match between the variables of the leader and the variables of the situation. Contingency-based leadership perspectives include, for example, the path-goal theory (House & Mitchell, 1977) and the situational leadership theory (Hersey & Blanchard, 2013).

According to them, the contingency approach assumes that a leader's effectiveness depends on their leadership style in certain situations. For example, an autocratic leader may be considered very effective in some situations but ineffective in others. Nevertheless, even contingency-based leadership theories have their limitations. One problem could be that they are too generalized and do not consider that different types of leadership may be appropriate in various situations (Denison, Hooijberg, & Quinn, 1995, p. 26).

**Contemporary Theories:** Emerging models focus more on the subordinate than on the leader. Ideas such as motivations and emotions appear, which give leadership a sociological and psychological connotation (Winkler, 2010, p. 26). According to this view, effective leadership cannot sufficiently be characterized by classical leadership theories. They consider the needs and development of followers and generate contexts with meaning and motivation (House & Shamir, 1993, pp. 82-91).

Examples of the contemporary approach are the leader-member exchange theory (LMX) (Graen & Uhl-Bien, 1995), the transformational leadership theory (Bass, 1998), the charismatic leadership theory as well as the authentic leadership theory (Avolio & Gardner, 2005).

**New Approaches:** Apart from the traditional views on leadership effectiveness, a newer approach was presented by Hooijberg, Hunt and Dodge (1997, p. 403). Many leaders engage with various stakeholders almost simultaneously in complex and constantly evolving environments that contain an almost infinite list of contingencies. This understanding reflects recent developments in leadership theory, which holds that effective leadership results from a leader's ability to exhibit various behaviors in response to complex situations (Hooijberg et al., 1997, p. 403; Kayworth & Leidner, 2002, p. 29).

According to this behavioral complexity perspective, effective leaders must deal with paradoxes and contradictions while filling multiple and possibly conflicting leadership positions (Denison et al., 1995, p. 20). Rather than defining the most appropriate leadership style for a given situation, as previous contingency-based theories suggested, this paradoxical perspective recognizes that the ability to perform multiple, contradictory leadership activities in a given situation may be a more decisive measure of effective leadership. Some studies have found supporting evidence (Denison et al., 1995, pp. 524-540; Hooijberg, 1996, pp. 917-946).

Furthermore, studies by Hackman, Walton and Goodman (1986, pp. 34-36) and Kayworth and Leidner (2002, p. 29) support the underlying concepts of behavioral complexity. They claim that effective team leaders need to perform various tasks associated with three main aspects of effective teamwork: task performance, individual needs of team members and team cohesion. As a result, there is a strong tendency to see leader effectiveness in performing multiple roles in challenging work environments.

Another view on leadership effectiveness is proposed by Van Knippenberg (2011, p. 1087), who argues that leadership effectiveness is dependent on followers' perception of the leader as a group member. The basis of this argument lies in the social identity theory, in which Hogg (2001, p. 196) states that leaders are more effective in their role when viewed as a group prototypical. Following the discussion of theories about achieving leadership effectiveness, the next section will clarify measurements used throughout the literature.

**Specific Outcomes of Effective Leadership:** Most scholars measure leadership effectiveness regarding the consequences of a leader's actions on subordinates, observing various outcomes.

A leader's contribution to the quality of group processes, group cohesion, increased cooperation and motivation, follower satisfaction and commitment, reduced conflict among members and improved speed and quality of decision-making are standard measures of leadership effectiveness (Druckman, Singer, & Van Cott, 1997, pp. 97-104).

Examining the consequences of a leader's actions is perhaps the most prevalent outcome measure used to assess an effective leader (Dhar & Mishra, 2001, p. 255). According to Dhar and Mishra (2001, p. 255), the most popular method of determining a leader's effectiveness is to evaluate team performance and the extent to which team goals and objectives are fulfilled. Goal achievement can be a valid indicator that leaders can influence and lead their subordinates towards organizational goals.

Furthermore, a distinction is made between objective and subjective observations. Examples of objective observations include increasing sales, profit or margin, revenue, market share and achieving budgeted sales, costs, margins, return on investment and productivity. Subjective observations include evaluations of the leader's effectiveness by subordinates, peers and supervisors (Dhar & Mishra, 2001, p. 255).

Bass and Stogdill (1990, p. 412) have examined subordinates' evaluations of a leader's effectiveness by asking them to rate how well their leader performs and achieves specific objectives. The leader's effectiveness assessment can be based on specific outcomes of the leader, such as the performance of the leader's organizational unit, the leader's ability to innovate, follower satisfaction and commitment and the leader's promotion to higher levels in the organization (Carroll & Gillen, 1987, pp. 45-49; Druckman et al., 1997, pp. 97-104; Larson & Callahan, 1990, pp. 530-538).

Yammarino and Bass (1990, pp. 975-995) and Carroll and Gillen (1987, pp. 45-49) found in their research that subordinates' job satisfaction is a predictor of a leader's effectiveness. They measured the job satisfaction of subordinates to determine the relative effectiveness of a leader.

Moreover, enhanced subordinate performance has been used by several scholars to assess whether a leader is leading effectively (Howell & Frost, 1989, pp. 243-269; Podsakoff, MacKenzie, Moorman, & Fetter, 1990, pp. 107-142).

Accordingly, some studies have used improved subordinate satisfaction and overall subordinate performance to determine whether a leader is effective or not (Kanter, 1985, pp. 47-60). Several studies have shown that better organizational results occur when employees are committed to the organization and perform at a higher level, which supports the fact that that leadership effectiveness is measured by employee commitment to the organization (Bass, 1995, pp. 463-478; Kouzes & Posner, 1995, pp. 202-230; Podsakoff et al., 1990, pp. 107-142).

Vroom and Yetton (1973), cited in Madanchian, Hussein, Noordin and Taherdoost (2017, p. 1046), argue that compelling leaders can make excellent decisions and improve the commitment of their employees. The researchers used these two factors to determine leadership effectiveness. They invented a method to strengthen the quality of a leader's communication and decision-making skills, which they claim correlates positively with leadership effectiveness (Madanchian et al., 2017, p. 1046).

High team performance is another discussed result of a leader's effectiveness. Improvements in group performance have been seen as a measurement of effective leadership (Larson & Callahan, 1990, pp. 530-538) and specific metrics include the leader's team financial performance and results, the leader's organizational unit's ability to achieve its objectives, subordinates' organizational commitment and employee retention within the division.

**Subordinate Evaluation of the Leader's Effectiveness:** On the other hand, many scholars have suggested that subordinates' assessment of a leader's effectiveness is also a valuable measurement. The next part provides examples of measures based on subordinates' assessment of a leader's effectiveness.

Ehrhart and Klein (2001, pp. 153-179) created a six-point scale to assess leadership effectiveness. Subordinates are asked to rate their leader on six aspects of leadership effectiveness, namely: the subordinate's ability to work for the leader with a high degree of efficiency, agreeing that they would like to work for the leader, getting along with the leader, appreciating the leader, seeing their work style as consistent with the leader and finally, sharing the leader's values and ideas.

Yukl (2008, pp. 708-722) has developed a questionnaire that asks subordinates to rate the effectiveness of their leader. Participants are asked to identify the overall effectiveness of a leader compared to other leaders they know on this scale. According to Carter (2009, pp. 261-271), the success of pastoral leaders is related to their transformational leadership behavior. He developed the Pastoral Leadership Effectiveness Survey, a measure of pastoral leadership effectiveness (PLES). It asks followers to rate their leader on factors defined in the literature that define an effective pastor, similar to other indicators of leadership effectiveness.

Vecchio and Anderson (2009, pp. 165-179) compared the leader's evaluation of his or her abilities to the follower's evaluation of the leader's effectiveness. To do so, they asked subordinates to assess the leader's effectiveness by asking them to rate the following aspects: satisfaction with the leadership offered, evaluation of the leader's effectiveness, rating of this leader in comparison to an ideal leader, desires to imitate the leader and evaluation of whether the leader improved the organization's success (Vecchio and Anderson, 2009, pp. 165-179).

In addition, Gust-Thomason and Yantis (1998, pp. 159-167) used another measurement to examine the productivity of team leaders in self-managed teams.

Namely, the leader’s assessment of their effectiveness in achieving team and organizational goals compared to the team’s assessment of the leader’s effectiveness. Priest and Swain (2002, p. 171) used a method in which subordinates assessed the effectiveness of their leaders. The researchers established a connection between a leader’s ability to use humor and the leader’s perceived effectiveness.

According to Hunt (1991, pp. 35-39), leadership effectiveness can be both direct and indirect. The leader’s decisions and actions that directly impact what is done, how it is done and how effective it is done are referred to as direct effects. On the other hand, decisions and actions by the leader that are mediated by other interacting variables in the causal chain refer to indirect effects. Indirect effects take longer to manifest but they are often more permanent (Hunt, 1991, pp. 35-39).

*Table 2: Measurements of Leadership Effectiveness Summary*

<b>Measuring Specific Outcomes of Effective Leadership</b>	<b>Subordinate Evaluation of the Leader’s Effectiveness</b>
<ul style="list-style-type: none"> <li>• Group performance and success of group goals</li> <li>• Subordinate leader effectiveness evaluations</li> <li>• Developed subordinate job satisfaction</li> <li>• Improved subordinate performance</li> <li>• Improved subordinate satisfaction and performance</li> <li>• Advanced subordinate commitment and performance</li> <li>• Improved decision making</li> <li>• Improved group performance</li> </ul>	<ul style="list-style-type: none"> <li>• Subordinates ‘opinion of and willingness to work for a leader</li> <li>• Overall leader effectiveness</li> <li>• Pastoral leader effectiveness</li> <li>• Comparison of a leader’s and follower’s assessment of leader effectiveness</li> <li>• Team leader effectiveness</li> <li>• Humor and leader effectiveness</li> </ul>

*Source: Own Representation*

**Leadership Effectiveness in Global Virtual Teams:** As mentioned earlier, GVTs are characterized by operating across multiple and temporal boundaries (Jarvenpaa & Leidner, 2006, p. 1). GVTs, include members from all over the world (Scott & Wildman, 2015, p. 13) and are thus located within different time, space and cultures (Mowshowitz, 1997, pp. 30-37).

According to comparative research by Smith et al. (1989, pp. 97-109), different types of leadership behaviors, such as task-oriented and people-oriented leadership, are considered appropriate in different cultures. However, Cascio (2000, pp. 81-90) argues that the individuals who need structure and control in a results-oriented leadership style are unlikely to be effective leaders in virtual work settings.

According to Snow et al. (1996, p. 3), there are three roles a leader takes on. Before the formation of a VT, the team leader usually serves as an advocate. As the team develops, the leader's role changes to that of a catalyst. Finally, as the team matures, the leader shifts to the role of an integrator.

According to Worthy, as cited in Joinson (2002, p. 4), leaders are process oriented. They assume that if they can see their employees working, they are doing a good job. This is not possible in VTs, where performance evaluation is more complicated and problematic, especially when team members' technological access, expertise and cultures are unequal.

Snow et al. (1996, p. 2) states that VTs present unique challenges, such as who evaluates or takes action to improve the performance of members located in different countries. One of the most challenging aspects of managing GVTs is performance management, which necessitates managers to succeed at three things: defining, facilitating and encouraging performance (Cascio, 2000, pp. 81-90).

Kirkman et al. (2002, p. 74) and Breuer, Hüffmeier, Hibben and Hertel (2020, pp. 3-34) raised the question of how organizations can measure productivity, build trust and manage employees who are not physically present. Unlike traditional teams, it is more challenging to mentor team members who are not even visible and assess competence gaps and provide feedback (Carmel, 2002, p. 8).

According to Kirkman et al. (2002, pp. 67-79), virtual work amplifies trust issues among team members. It is crucial to take a proactive approach to build trust within the GVT by being consistent and responsive. A cohesive team requires face-to-face interactions and experiences and Carmel (2002, p. 8) argues that there is no group cohesion in a loose formation of units spread across continents. Breuer et al. (2020, p. 13) discovered in their research that VT members need to provide more information about their ability, benevolence, predictability, integrity and transparency to increase their perceived trustworthiness.

Conflict management skills are further essential prerequisites of leadership effectiveness (Baron, 1989, pp. 291-294), mainly due to the lack of trust and interpersonal communication problems, which are argued to be one of the main issues in GVTs (Cascio, 2000, pp. 81-90; Holton, 2001, pp. 42-45; Siegel et al., 1986, pp. 157-187; Warkentin et al., 1997, pp. 975-996).

According to Handy (1995, pp. 45-50), trust is what defines the dynamics of collaboration. Holton (2001, p. 36) claims that individuals become more comfortable through frequent and meaningful interaction. The key is sharing ideas and assumptions openly without the fear of backlash in an environment in which diversity of opinion is valued. This results in a supportive environment and encourages emotional sharing (Holton, 2001, p. 36-44). The challenge of team development in a virtual environment is to create ways and opportunities for team members to engage in dialogue with the depth necessary to create a shared future and purpose (Holton, 2001, p. 36). This is the basis for the culture of collaboration, which by definition is part of every team (Stratone & Vatamanescu, 2019, p. 454).

As cited in Joinson (2002, p. 3), Worthy states that leaders must provide more encouragement and positive messages when working virtually. They also must be willing to abandon traditional control over their employees, although they remain obligated to supervise and evaluate them. As a result, new types of organizational leadership may become more important (Morris, 2004, pp. 263-275).

### **2.3. Vulnerability**

**Vulnerability Defined:** A newly discussed concept within leadership effectiveness is vulnerability (Brown, 2015, 2018; Coyle, 2018). The term vulnerability is widely used in academic research; however, it is a concept that varies depending on the field of study or the context in which it is described. In order to understand the concept in the context of the current study, a brief review of vulnerability throughout the literature will take place, aiming to clarify the most relevant definition.

The term “vulnerable” or “vulnerability” started to appear more and more concerning disasters, as a disaster is more likely to take place if natural hazards happen in a vulnerable situation (Wisner & Luce, 1993, p. 127). Hence, it is often described as a negative outcome of an interaction between an individual and environmental forces. According to Wisner and Luce (1993, p. 130), it emerged as an analytical concept in environmental sciences under the impact of natural disasters on humans.

Within the medical sector field, “vulnerability” or “vulnerable” describes an individual who is viewed as a victim with little or no control over the current situation (Hutcheon & Lashewicz, 2014, p. 1383). Furthermore, it can also describe a state in which an individual is at risk for unfavorable outcomes due to genetic factors, infectious agents and lifestyle behaviors (Blum, McNeely, & Nonnemaker, 2002, p. 28).

According to Fineman (2008, p. 8), vulnerability is defined as a universal human condition and not necessarily a term for describing certain individuals or groups as vulnerable. In economic sciences, macroeconomists define the term vulnerability as “the conditions determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards” (Birkmann, 2006, p. 12), in which the focus is on how influences threaten a group or community outside of their control (Birkmann, 2006, p. 12).

Brown (2015, p. 34) defines vulnerability as “uncertainty, risk and emotional exposure”. She emphasizes that vulnerability is not a weakness and poses the foundation and birthplace of all emotion and connection (Brown, 2018, p. 70). Coyle (2018, p. 104) describes vulnerability as a way of sending and receiving signals rather than a “touchy-feely” display of insecurity. It is defined as a channel for open and honest communication.

According to Chambers (2006, p. 33), vulnerabilities are described by two causes of stress exposure. The causes could include external risks as a source of vulnerability or internal risks, meaning an individual cannot cope internally.

Notable throughout all literature is that vulnerability is considered to be the exposure of external risks and an individual’s openness and receptivity to being attacked emotionally or physically. Additionally, it is important to highlight that generally, vulnerability is, according to its definition, a negative phenomenon, except according to Brown (2015, 2018) and Coyle (2018), who describe it positively.

After considering the variety of definitions throughout available literature and developing an understanding of the term “vulnerability”, the following construct has been developed to clarify the meaning of vulnerability in the current study.

Vulnerability in this study is defined as a willingness to be open and emotionally exposed in connection with another person or group, with the probability of being hurt or rejected. It is defined as the foundation of human connection and good communication, which leads to authenticity, trust, transparency and last but not least, empathy (Brown, 2015, pp. 46-100, 2018, pp. 196-350).



Brown (2018, p. 307) further argues that vulnerability is not necessarily internalized as a personality trait but rather an active decision taken by an individual.

**Perspectives of Vulnerability in Leadership Effectiveness:** Several leadership theories and models include or focus on similar structures as the concept of vulnerability, yet there is little research on vulnerability directly.

**Emotional Intelligence:** According to Brown (2018, pp. 296-349), demonstrating vulnerability will lead to empathy. Furthermore, choosing vulnerability requires an individual to be self-aware and is also crucial for relationship building (Brown, 2015 pp. 46-53, 2018, p. 52, 364). Lastly, the ability to regulate vulnerability to be effective in leadership is also mentioned (Brown, 2018, p. 323).

Additionally, to be effective, decision-making is considered crucial, as stated earlier (Vroom & Yetton, 1973, cited in Madanchian et al., 2017, p. 1046). Moon (2021, p. 71) found that emotional intelligence can positively influence the decision-making process.

Goleman (2009, pp. 75-110) defined the five features of emotional intelligence that positively impact leadership effectiveness, including self-awareness, self-regulation, motivation, empathy and social skills. Four of the five components show similar constructs to vulnerability.

*Table 3: Components of EQ with Similarities to Vulnerability*

<b>Self-Awareness</b>	Being aware of own emotions and how they influence the own thoughts and actions. Being aware of strengths and weaknesses.
<b>Self-Regulation</b>	Knowing how to express emotions appropriately, regulate and manage emotions, while not hiding the true feelings.
<b>Empathy</b>	Being able to pick other people’s thoughts, wishes and concerns, pick up on emotional signals, feel comfortable in social situations and recognize power dynamics in a community or organization.
<b>Social Skills</b>	Knowing how to build and maintain positive relationships, socialize effectively, empower and influence others, collaborate effectively and resolve conflicts.

*Source: Adapted from Goleman (2009, pp. 75-110)*

Emotional intelligence is argued to be a strong predictor of effective leadership (Boal & Hooijberg, 2000, pp. 515-549; George, 2000, p. 1046). Comparing the relevant aspects of emotional intelligence with the concept of vulnerability, it can be argued that the ability to demonstrate vulnerability results from EQ.

**The Five-Factor Model:** Brown (2018, p. 307) further argues that vulnerability is not necessarily internalized as a personality trait but rather an active decision taken by an individual. However, as vulnerability is referred to as emotional exposure (Brown, 2015, p. 7) and also being open to possible risk (Brown, 2015, pp. 32-34), it is argued that vulnerability requires a certain degree of openness to experience.

This model, which is prominently used to analyze personality traits, includes five components: extroversion, openness to experience, agreeableness, conscientiousness and neuroticism (Barrick & Mount, 1991, p. 1). According to Salgado (1997, p. 36) and Judge et al. (2002, pp. 770-774), high levels of openness to experience and conscientiousness and extraversion have been linked to leadership effectiveness.

**Leader-Member Exchange Theory (LMX):** Vulnerability plays an essential role in forming trust (Mayer, Davis, & Schoorman, 1995, pp. 709-734; Rousseau, Sitkin, Burt, & Camerer, 1998, pp. 393-404). According to research on LMX, leader-follower relationships can range from high quality, based on mutual liking, trust and respect, to poor quality, based solely on the formal employment contract (Dienesch & Liden, 1986, pp. 618-634; Scandura & Pellegrini, 2008, pp. 101-110).

Since mutual respect and reciprocity are necessary to create an ideal exchange between a leader and subordinates, trust consistently emerges as an essential driver of LMX (Scandura & Pellegrini, 2008, pp. 101-110). Furthermore, the quality of LMX has been consistently associated with various organizational outcomes, including job satisfaction, turnover, promotion, performance and organizational commitment (Dulebohn et al., 2012, pp. 1737-1744; Ilies, Morgeson, & Nahrgang, 2005, pp. 373-394). Mayer et al. (1995, p. 712) and Rousseau et al. (1998, p. 395) define trust as a person's willingness to be vulnerable in the hope that their leader will not exploit that vulnerability.

According to Deb and Chavali (2010, pp. 51-53), both the leader and the follower must demonstrate vulnerability for trust to be relevant in their relationship. This is in line with the argument of Brown (2015, p. 54, 2018, p. 538), who states that the courage to be vulnerable is also highly contagious and Coyle's (2018, p. 104) argument, stating that vulnerability is a means of open and honest communication.

Although there is minimal empirical work on vulnerability alone, evident connections between vulnerability and trust have been established (Deb & Chavali, 2010, pp. 43-60; Rousseau et al., 1998, pp. 393-404). The connections mean that vulnerability is crucial in developing trust between a leader and followers (Nienaber & Romeike, 2015, pp. 17-18). Moreover, social exchange theory suggests that the exchange of vulnerability should be balanced to foster optimal trust between two people (Khazanchi & Masterson, 2011, pp. 97-101).

**Authentic Leadership Theory:** According to Brown (2018, p. 122), if leaders share their vulnerability with their followers, they demonstrate transparency. Transparency is viewed as honest communication, which facilitates trust among a leader and followers (Peus et al., 2012, p. 332).

Like the LMX, authentic leadership highlights the importance of trust in the leader-follower relationship (Avolio et al., 2004a, p. 829). Gardner et al. (2005, p. 346) came up with a conceptual framework of authentic leadership, which identifies four major elements that define authentic leadership. These include balanced processing, internalized moral perspective, relational transparency and self-awareness (Walumbwa et al., 2008, p. 89). Relational transparency is interpreted as freely sharing information and revealing one's true thoughts and feelings in social interactions, which is strongly linked to the concept of vulnerability (Peus et al., 2012, p. 332).

According to Ladkin and Taylor (2010, pp. 26-27), this is an act of opening and sharing one's true self without fear of others' thoughts. This act of honesty, which others might see negatively, is vulnerable leadership in motion and requires courage. Research shows that leaders need to have a strong sense of moral courage to be authentic and vulnerable (Sekerka, Bagozzi, & Charnigo, 2009, pp. 574-576). Ilies et al. (2005, p. 381) refer to this transparent self-exposure as relational authenticity.

Theoretically, this vulnerability space allows leaders and followers to communicate and collaborate more effectively (Ilies et al., 2005, pp. 373-394). Nevertheless, the risk of being exposed and possibly hurt remains. Empirical research on authentic leadership has found several links between authentic leadership and positive organizational outcomes apart from improving the flow of information between a leader and their followers. Satisfaction of followers, organizational commitment and extra effort (Peus et al., 2012, p. 337-339), empowerment of followers (Wong & Laschinger, 2013, pp. 954-956) and wellbeing for both the authentic leader and his followers are some of these factors (Ilies et al., 2005, p. 388).

**Transformational Leadership Theory:** According to Avolio (2011, p. 62), transformational leaders create a sense of purpose in those they lead, have an inspiring vision and provide the necessary encouragement for their followers to develop into leaders as well. Bass (1998, pp. 77-85) includes four dimensions of transformational leadership in his elaboration of the theory: idealized influence, inspirational motivation, intellectual stimulation and individualized consideration.

Judge and Piccolo (2004, p. 755) argue that transformational leaders take risks to create a compelling vision for their followers using idealizing influence and intellectual stimulation. This vision fosters employees' association with the leader and encourages them to challenge assumptions and pursue new things.

Avolio (2011, p. 71) states that transformational leaders are open to take a risk to create a mission statement for their followers. This willingness to create a vision and solicit feedback from employees requires vulnerability but can also foster trust. Even if it comes at a cost to the leader, vulnerability can open the door to more significant alignment and better relationships. It is evident that transformational leadership is very effective in achieving high levels of performance, commitment, extra effort and subordinate satisfaction (Avolio, Zhu, Koh, & Bhatia, 2004b, pp. 951-968; Judge & Piccolo, 2004, pp. 762-765). Furthermore, transformational leadership has been linked to an increase in empowerment, follower trust and wellbeing of subordinates (Avolio et al., 2004b, pp. 951-968; Podsakoff et al., 1990, pp. 133-137).

After reviewing vulnerability in the context of leadership theories, the importance of vulnerability in leadership becomes explicit. Next, literature on discussions related to vulnerability and its outcomes is reviewed.

**Courageous Leadership:** Vulnerability is discussed as a key hallmark of successful and effective leadership (Brown, 2015, pp. 208-212; Couris, 2020, pp. 248-251; Deb & Chavali, 2010, pp. 43-60). Brown (2018, pp. 61-80) encourages leaders to put courage ahead of their comfort zones and to use their fears to shape a company culture based on vulnerability and bravery. Furthermore, she emphasizes the importance of creating a culture where individuals feel safe, seen, heard and respected (Brown, p. 313).

Coyle (2018, p. 112) emphasizes the importance of the shared exchange of openness, arguing it is the most fundamental building block of cooperation and trust. As already mentioned earlier, this is the basis of every effective team (Hacker et al., 2019, p. 2-19; Holton, 2001, p. 45).

Leaders demonstrate courageous leadership when they are willing to be vulnerable with others; even if it means they may fail, they are “all in” (Brown, 2018, p. 61). Brown (2018, p. 50) claims that courageous or daring leadership comprises the following skills, which can be learned, observed and measured.

- Rumbling with Vulnerability
- Living into our Values
- Braving Trust
- Learning to Rise

**Rumbling with Vulnerability:** Aligned with Brown’s (2018, p. 323) research, Sutton’s (2004, pp. 393-395) study demonstrated how emotion regulation enhances effective leadership and strengthens a leader’s emotional image in the eyes of followers.

Employees in modern organizations are given mindfulness training to help them manage emotions in the workplace that interfere with their productivity (Sutton, 2004, pp. 393-395). Mindfulness training changes the brain and the way people interact with themselves, others and their work. Mindfulness has a profound effect on brain activity when it is practiced and applied (Hill & Updegraff, 2012, p. 88).

However, according to Austin, Saklofske, Smith and Tohver (2014, pp. 10-13), pretending to be vulnerable can lead to mistrust, thus illuminating the negative side of emotional intelligence. While emotional intelligence can be beneficial, emotional manipulation can be self-serving and potentially harmful, indicating inappropriate use of emotional intelligence (Austin et al., 2014, pp. 10-13).

According to Brown (2015, pp. 67-68), shame can act as a barrier to vulnerability. Shame is the fear of not being worthy of connection, belonging, or even love due to something one has done or failed to do; it occurs in social environments and between people (Brown, 2018, p. 260). Empathy can help people feel less ashamed (Brown, 2018, pp. 350-354). Communication, understanding and a respectful, nonjudgemental attitude toward other person’s emotions are ways to practice empathy (Brown, 2018, p. 473).

However, a study conducted by Longmire and Harrison (2018, p. 908) found that empathy is reportedly a burden on strategic decision-making. Nevertheless, previous research has shown that effective leaders often show a high degree of empathy towards their team members and appreciate their subordinates’ opinions (Avolio et al., 2001, pp. 615-668; Kalsoom et al., 2018, pp. 23-27).

**Living to our Values:** “Daring leaders,” or courageous leaders, according to Brown (2018, p. 401), have always demonstrated integrity by prioritizing the right over the easy, quick and enjoyable. Brown’s concept is best alignable with the authentic leadership theory, as stated earlier. The study also found that the daring leaders appeared to have a clear understanding of their values. They were genuine leaders who had high levels of alignment in their intentions, thoughts, words and actions (Brown, 2018, p. 394).

According to Luthans and Avolio (2003, pp. 241-255), authentic leaders have confidence, hope, resilience and optimism. Positive psychological capital is generated by such leaders in organizations, which aids in developing individuals, teams, companies and communities. These leaders are not afraid to express their emotions and vulnerability, fostering open relationships with their peers and leading to positive organizational outcomes (Luthans & Avolio, 2003, pp. 241-255).

Nevertheless, Eagly (2005, p. 460) claims that the relational perception of a leader’s authenticity is not as important as the leader being ingenuous. To achieve relational authenticity, followers must give the leader the authority to spread a set of values. It is further argued that leaders can only create individual and group identification among subordinates under certain conditions, which can increase the success of an organization (Eagly, 2005, p. 472). Some leaders do not have enough authority to arouse followers’ identification. Inconsistent values between a leader and his or her supporters may also make it difficult for followers to recognize a leader’s authenticity (Eagly, 2005, pp. 471-472).

**Braving Trust:** Brown (2018, p. 474) states that nonjudgmental sharing, generosity, integrity, accountability and reliability can help to build trust. Although trust is inherently relational and manifests itself more visibly in practice with others, the foundation of trust with others is built on our ability to trust ourselves (Brown, 2018, p. 491). With globalization and technology, employees are discovering that they need to collaborate with people they have never met before, most of whom belong to different cultures, ethnicities and nationalities.

Collaboration occurs in such a way that technology is the primary form of communication. Research by Hofstede (2001, p. 453) shows that group collaboration is itself a challenging task and managing culturally diverse global teams, with or without digital communication, is a significant challenge.

Moreover, building trust in workforces with different socio-psychological and cultural identities is challenging (Horwitz et al., 2006, p. 475). Good communication is crucial in the world of knowledge sharing and learning and is a necessary condition for trust (Brown, 2015, pp. 46-53)

**Learning to Rise:** According to Brown (2018, p. 522), even if courage-building skills can be learned, no one can be prepared for failure. The fear of being unable to cope with failure is what prevents courageous action. Emotions are necessary for cognition and behavior to function and influence even the most thoughtful and rational decisions. Brown (2018, p. 77) explains that knowing to be emotionally trapped and being willing to explore one's own emotions is vital. People tend to project their emotional fears onto those around them.

Offloading is not only detrimental to psychological wellbeing but can also be damaging to existing relationships (Brown, 2018, p. 316). According to Brewer (2020), calmness in the workplace assists in developing perspective and healing from anxiety. Anxiety, one of the most contagious emotions (Brown, 2018, p. 538), can be reduced by focusing on staying calm (Brewer, 2020, pp. 6-7).

## 2.4. Preliminary Conclusion

Current literature provides insights into various aspects of leadership effectiveness and clear connections between the concept of vulnerability and theories, models and drivers of leadership effectiveness.

Even though contrary theories exist, it is argued that vulnerability has a solid contribution to leadership effectiveness overall. Research on vulnerability within leadership effectiveness, especially in GVTs, is minimal. Therefore, this paper seeks to investigate the contribution of vulnerability in leadership effectiveness in the context of GVTs. The following explanations aim to clarify the most relevant identified correlations and explanations according to the literature. The superscripts in the following paragraphs refer to Figure 1 and Appendix 8.1. Further information about the theoretical indications can be found in Appendix 8.1.

First, the literature identifies various problems found in VTs and thus GVTs. These include the lack of mutual trust, various communication issues, control issues, behavioral issues, collaboration, isolation and cultural issues. Thus, it is argued that any factor improving the issues listed above would significantly improve leadership effectiveness within GVTs.

For this study, the previously defined concept of vulnerability is compared to various theories and models which demonstrate a proven positive effect on leadership effectiveness. The nature of the interaction between leader and subordinate is also influenced by intrapsychic processes such as gender. Gender plays a vital role because it can influence a leader's style, behavior, emergence and effectiveness in various ways. Men may be praised for opening up and sharing their feelings, whereas women may be viewed as weak or overly emotional.

Emotional Intelligence, which partly offers similar constructs to vulnerability<sup>1,2,3,25</sup>, is argued to influence leadership effectiveness positively. Within the FFM model, openness to experience is claimed to be a strong leadership effectiveness correlate<sup>22</sup>. As vulnerability requires a certain degree of openness to experience, this supports the assumption that demonstrated vulnerability influences leadership effectiveness positively.

Self-awareness is stated to be necessary in order to demonstrate vulnerability<sup>1</sup>. Furthermore, it is evident that compelling leaders often show a high degree of empathy towards their team members and appreciate their subordinates' opinions<sup>2</sup>. As social skills



within the EQ model are described to support relationship building and connection, it can be argued that this is alignable with the concept of vulnerability, as in which connection is not possible without demonstrating it<sup>3</sup>. Lastly, even though vulnerability means emotional exposure, it must be regulated to enhance leadership effectiveness.<sup>25</sup>

Throughout literature, it is evident that trust plays a crucial role in leadership effectiveness<sup>6,7,8</sup>. Developing trust is a necessary behavior within the behavioral leadership theory in general and argued to be an essential aspect of contemporary theories such as the LMX<sup>7</sup>, transformational leadership theory<sup>6</sup> and authentic leadership theory<sup>8</sup>. Furthermore, it is argued that relationship-oriented leaders are more effective in VTs in general. Given the connections found of vulnerability in the context of leadership effectiveness theories, this supports the argument that vulnerability should influence leadership effectiveness in GVTs positively<sup>21</sup>.

Moreover, it is argued that sharing ideas openly without the fear of backlash results in a supportive environment and encourages sharing. Last but not least, trust and vulnerability are argued to be the basis of collaboration and vulnerability is claimed to be important in the formation of trust, also indicating a strong positive relationship between the two<sup>5</sup>.

Trust is claimed to be an essential driver of the LMX in order to reach an optimum exchange<sup>7</sup>. The LMX has furthermore been associated with various organizational outcomes, which are also commonly used to measure leadership effectiveness<sup>13,14,15</sup>. The argument within the LMX underlines the importance of vulnerability within the exchange of leader and subordinates, as trust between them is only relevant if vulnerability is demonstrated<sup>5</sup>. As vulnerability is claimed to be contagious, it can be argued that if one party decides to demonstrate vulnerability, the other party should follow, resulting in enhanced leadership effectiveness overall.

This phenomenon is also discussed within the authentic leadership theory, which can be aligned best with the concept of vulnerability. Relational transparency, which is mentioned within the authentic leadership theory, is closely related to the concept of vulnerability. Furthermore, self-awareness is additionally claimed to be an essential element of authentic leadership.

Authentic leaders can foster a sense of trust among their followers by regularly sharing their openness and honesty<sup>8</sup>, which prompts followers to respond with the same authenticity in their actions. It is believed that maintaining this authenticity leads to the

best possible relationship for sharing vulnerability. Vulnerability is needed in these genuine moments<sup>24</sup>.

The communication and collaboration are argued to be enhanced through the vulnerability space within authentic leadership<sup>19</sup>. Other critical organizational outcomes, posing variables for leadership effectiveness evaluation, are follower's satisfaction<sup>17</sup>, organizational commitment<sup>16</sup> and extra effort<sup>18</sup>.

Furthermore, the transformational leadership theory can be connected on similar lines to vulnerability like the LMX. Transformational leaders need to be willing to be vulnerable when they openly share ideas to create a vision for their followers<sup>6</sup>. This vision fosters employees' association with the leader, which is alignable with the argument that leadership effectiveness is dependent on followers' perception of the leader as a group member. Sharing one's vision fosters trust as well<sup>6</sup>.

Vulnerability, in this case, is argued to open the door to more substantial alignment and better relationships. Transformational leadership is very effective in achieving high levels of performance<sup>12</sup>, commitment<sup>10</sup> and subordinate satisfaction<sup>11</sup>. The strength of a transformational leader is apparent. However, the bold steps these leaders take towards vulnerability cannot be overlooked.

**Limitations and Contradictions:** Figure 1 aims to clarify the relevant relationships and connections for this empirical study. Other information and correlations found within the literature review were neglected.

Even though it is evident that the LMX, authentic leadership theory, as well as transformational leadership theory support the assumption that showing vulnerability positively impacts leadership effectiveness, it must be mentioned that sharing vulnerability might be connected with risks. It, therefore, could come with a cost for the leader or subordinate. Within the literature, some aspects are discussed, which pose arguments against demonstrating vulnerability.

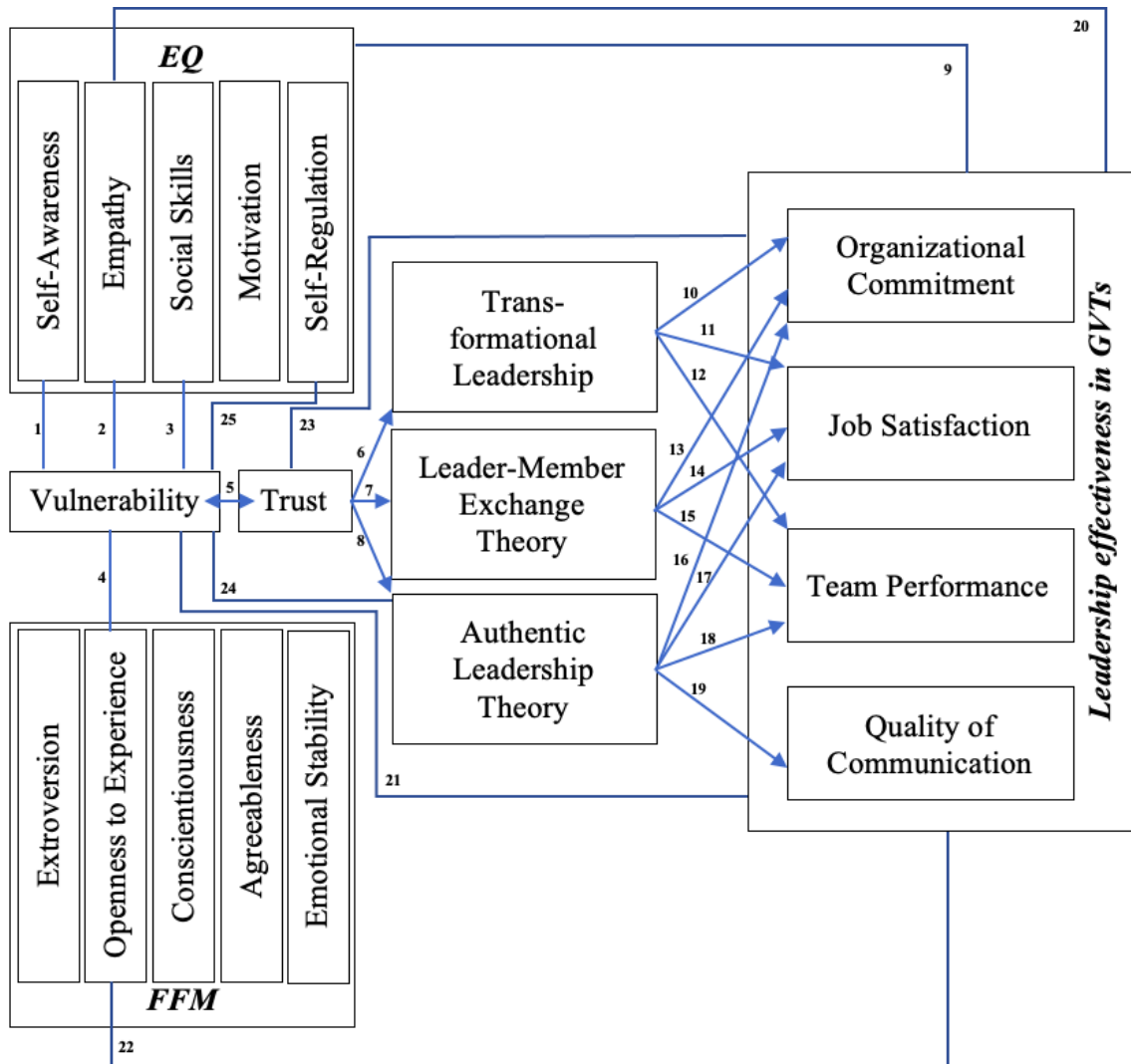
Not only vulnerability in the sense of exposing emotion but also emotion regulation is an argument discussed to enhance leadership effectiveness. Furthermore, it is essential to distinguish between demonstrating vulnerability and pretending to be vulnerable. Whereas one is argued to affect positively, the latter might lead to harmful effects and indicate potential EQ misuse. Empathy can also pose a burden on strategic decision-making and, therefore, hinder leadership effectiveness.

Authentic leadership argued to have various organizational outcomes and closely related to the construct of vulnerability is also questioned. It is argued that the relational perception of a leader’s authenticity is not as important as the leader being ingenuous.

Trust is an essential aspect of leadership effectiveness. However, group collaboration is challenging and building trust in workforces with different socio-psychological and cultural identities via communication channels can be an issue not to overcome. Furthermore, trust is developed differently in the context of face-to-face teams and VTs, posing a possible limitation on the contribution of vulnerability in GVTs.

Lastly, skills to be a courageous individual can be learned; however, the fear of failure might prevent bold actions from the beginning.

Figure 1: Identified Influences in Literature



Source: Own Representation

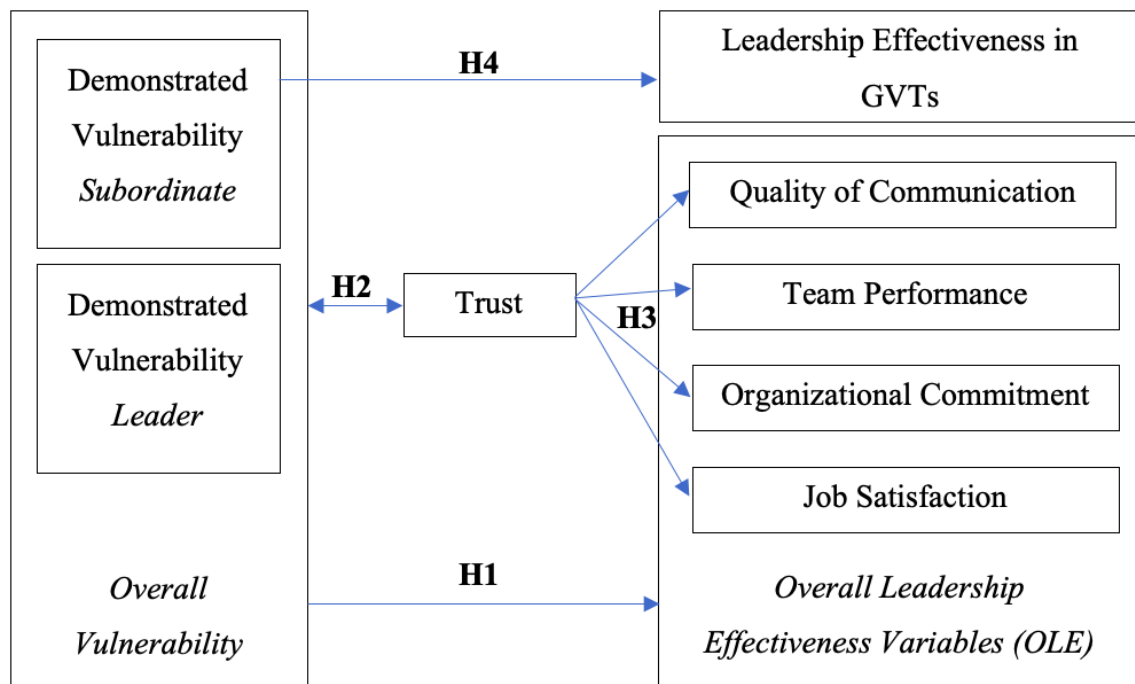
### 3. Empirical Analysis

This section contains a brief overview of the relevant instruments used in the survey of this thesis. The procedures and survey format and the participants and the instructions given to them are explained. In addition, four hypotheses are put forward to support and accompany the central research question, which is: What is the contribution of vulnerability on leadership effectiveness in the context of global virtual teams?

#### 3.1. Hypotheses

- H1:** The attitude towards vulnerability in the context of GVTs is generally positive and vulnerability is believed to influence leadership effectiveness positively.
- H2:** Trust does not develop without a certain level of demonstrated vulnerability and vice versa and the two are therefore positively correlated with each other.
- H3:** Trust is expected to be one of the most important factors for leadership effectiveness in a GVT and thus to correlate with the four identified individual effectiveness variables.
- H4:** Subordinates demonstrating vulnerability are expected to work in effective GVTs.

Figure 2: Conceptual Framework



Source: Own Representation

### **3.2. Research Strategy**

It is crucial to choose the appropriate technique for researching. Johnson and Christensen (2014, p. 82) describe three distinct research methods that can be used: quantitative research, qualitative research and a combination of both.

Within quantitative research, empirical data is used to test a previously defined hypothesis, assuming the predictability of human behavior (Johnson & Christensen, 2014, p. 83). According to Yilmaz (2013, p. 313), the main benefits of quantitative research are generalization and the ability to present findings precisely. Questionnaires, surveys and numerical measurements are the most common tools used. Statistical techniques are then used to analyze the data further.

Qualitative research, stated by Johnson and Christensen (2014, p. 85), is unpredictable, situational and informal. Rather than testing an existing hypothesis, hypotheses are created (Yilmaz, 2012, p. 314). According to Fidel (1993, p. 225), the main benefits of qualitative research are the possibility to gain insight information into human behavior. Furthermore, it is most suitable for highly complex and unknown topics. In-depth interviews, document analysis and focus groups are the most common methods for conducting qualitative research (Yilmaz, 2013, p. 315).

Vulnerability is strongly linked to emotions, thoughts and experiences, entailing the use of a qualitative research method. Nevertheless, this thesis aims to determine the impact or outcomes of a particular behavior, called vulnerability, on leadership effectiveness in a specific setting, namely GVTs.

As a result, it is argued that quantitative research is more appropriate in this case. Yilmaz (2013, p. 313) claims that quantitative research requires previously constructed instruments or response categories to ensure a high degree of generalization.

### 3.3. Research Design

In the current study, the survey was randomly distributed. Participants were recruited through invitations on LinkedIn and approximately 400 individuals were contacted. These users were sent a link to a survey. The first part of the survey included various demographic questions and was developed to ensure that only formal leaders in GVTs and subordinates in GVTs participated.

In total, 106 individuals took part. They were encouraged to participate in this research study and asked to forward the survey to their team members if they worked in a GVT. There were no credits or other incentives offered. Only those who fulfilled the requirements, meaning that they need to be currently working in a GVT, were used in the current study (56.6%).

While understanding the limitations of this sampling methodology, such as self-selection bias, this approach was selected to ensure minimal interruption of participants.

*Table 4: Participants Demographics*

<b>Gender</b>		
	Male	60%
	Female	40%
	Prefer not to answer	0%
<b>Age</b>		
	21 – 30 years	62.3%
	31 – 40 years	26.2%
	41 – 50 years	6.6%
	51 – 60 years	4.9%
<b>Ethnicity</b>		
	White	82%
	Hispanic, Latino or Spanish origin	4.9%
	Black or African American	3.3%
	Asian	9.8%
<b>Citizenship</b>		
	Switzerland	68.9%
	Europe	19.7%
	Australia-Oceania	1.6%
	North America	9.8%

*Source: Survey*

The information was gathered through an online survey that aimed to assess leaders' and subordinates' ability to demonstrate vulnerability and their perceptions of trust, quality of communication, job satisfaction and organizational commitment and team

performance, indicating leadership effectiveness. PLE was gathered only among subordinates, excluding formal leaders. The survey had a total of 31 questions. Other than the demographic attributes, most of the questions were measured, applying a 5-point Likert scale and using the best choice method. Furthermore, one open question was included to give respondents the possibility to elaborate on their opinions regarding vulnerability in the context of leadership effectiveness and assess the general attitude towards vulnerability through qualitative evaluation.

### **3.3.1. Measurements**

**Gender:** Gender is argued to affect chosen leadership style (Ayman, 1993, p. 153) and thus, also demonstrated vulnerability. Even though the influence of gender on leadership styles goes beyond the current study, it was included as a control variable to mitigate possible effects. Due to the small sample size, controlling for culture was neglected.

**Vulnerability:** In the present study, demonstrated vulnerability of participants, including formal leaders and subordinates, was measured by the following statements, “I am willing to let my guard down with others, even in situations where I feel like I should protect myself and only show strength.” / “I practice nonjudgment by not judging others when they are asking for what they need or asking for help.” / “I stay aligned with my values when facing tough decisions.”

Responses are scored on a 5-point Likert scale ranging from (1 = not like me at all) to (5 = very much like me). Even though other measures of vulnerability in leadership exist, these other measures did not fully capture the construct as operationalized in the current study. Therefore, the items were derived from and inspired by Brown’s Daring Leadership Assessment (2021), which aims to assess a person’s courageous behavior, including the risk-taking aspect of vulnerability with emotional exposure, empathy as an outcome of vulnerability and integrity, representing the alignment with one’s values.

**Trust:** The level of trust was measured by the items “We have complete confidence in each other’s ability to perform tasks.” / “In our team, we discuss and deal with issues or problems openly.” / “People in our team usually tell the truth, even when they know they will be better off by lying.”

Responses are scored on a 5-point Likert scale ranging from (1 = very inaccurate) to (5 = very accurate). In order to achieve valid results, these three items were derived from Costa and Anderson (2011, p. 124), aiming to conceptualize the concept of trust within perceived trustworthiness, cooperative behavior and propensity to trust.

**Communication:** The quality of communication was measured by the items “I perceive the overall communication within our team as transparent and I also believe that I communicate transparently” / “When disagreements arise in our team, members try to communicate directly with those they have the problems with” / “I believe that all team members use an appropriate tone of voice.”

Responses are scored on a 5-point Likert scale ranging from (1 = very inaccurate) to (5 = very accurate). Even though other measurements of communication quality measures exist, these items were deemed to be most appropriate for the current study and in the context of GVTs. They were derived from Sullivan and Feltz (2003, pp. 1701-1712), aiming to conceptualize the concept of communication in the context of efficient GVTs, including how communication is perceived, conflict resolution and appropriateness.

**Job Satisfaction:** The leaders’ and subordinates’ satisfaction were measured by the items “In our team, I get the chance to do something that makes use of my abilities.” / “I like the feeling of accomplishment I get from the job.” / “I am able to do things that do not go against my conscience.”

Responses are scored on a 5-point Likert scale ranging from (1 = very inaccurate) to (5 = very accurate). There are various ways to measure job satisfaction. Nevertheless, these items were derived from one of the most common questionnaires in this regard, the Minnesota Satisfaction Questionnaire (MSQ) (Weiss, Davis, & England, 1967), aiming to conceptualize job satisfaction, including purpose, achievement and morale.

**Organizational Commitment:** Organizational commitment was measured by the items “Our organization has a great deal of personal meaning for me.” / “It would be very hard for me to leave our organization right now, even if I wanted to.” / “Our organization deserves my loyalty.”



Responses are scored on a 5-point Likert scale ranging from (1 = very inaccurate) to (5 = very accurate). Even though other measurements of organizational commitment exist, these items were considered to be most appropriate for the current study. They were derived from the study of Lee, Allen, Meyer and Rhee (2001, pp. 602-603), aiming to conceptualize commitment, measuring the personal meaning of the organization, the emotional attachment of the individual as well as its loyalty towards the organization.

**Team Performance:** Team performance was measured by the items “The team meetings are usually conducted very efficiently.” / “Our team always meets our deadlines” / “Our team always fulfills its objectives.”

Responses are scored on a 5-point Likert scale ranging from (1 = never) to (5 = always). There are various ways to assess performance. However, given the variety of possibilities, the items were derived from the general idea of subjective observations, according to Dhar and Mishra (2001, p. 255). The items include the variable of efficient time management, reliability of the team and the extent to which goals are fulfilled.

**Perceived Leadership Effectiveness (PLE):** To assess the effectiveness of the respective leader of the specific subordinate, a separate survey part only for members was created. Ehrhart and Klein (2001) created a six-point scale to assess leadership effectiveness. Subordinates are asked to rate their leader on six aspects of leadership effectiveness.

Thus, the subordinate’s opinion of PLE was measured by the following items derived from Ehrhart and Klein (2001). “Are you able to work for the leader with a high degree of efficiency?” / “Do you like to work for the leader?” / “Do you get along with the leader?” / “Do you appreciate the leader?” / “Do you see your work style consistent with the leader?” / “Do you share the leader’s values and ideas?”

Responses are scored on a 5-point Likert scale ranging from (1 = never) to (5 = always). This measurement was considered most appropriate and feasible within the context of a survey. Within this measurement, only subordinates were asked to assess their leader’s effectiveness. The six items were evaluated as one single variable on an aggregated level.

**General Attitude towards Vulnerability in GVTs:** Finally, the open question “Do you believe that demonstrating vulnerability can have an impact on the team dynamics and the effectivity of its leader? If so, why?” was included, aiming to collect various opinions on this topic from team members as well as leaders in order to evaluate the general attitude towards vulnerability.

### 3.3.2. Criteria for Statistical Analysis

Criteria for statistical analysis had to be defined to evaluate the contribution of vulnerability and the corresponding hypotheses. Multicollinearity, significance, reliability and goodness of fit were chosen as criteria and the resulting data were analyzed using RStudio. The criteria chosen will be explained in the following section.

**Multicollinearity:** The degree to which two or more variables are correlated is known as multicollinearity. It is argued that it has strong predictive power on the conclusions drawn about the individual predictors of leadership effectiveness.

Correlations between variables greater than .70 indicate strong multicollinearity and moderate multicollinearity is indicated by correlations between variables greater than .30 (Meyers, Gamst, & Guarino, 2017, p. 189). Multicollinearity was demonstrated using the Pearson correlation (r) test.

**Significance:** According to Meyers et al. (2017, p. 22), statistical significance indicates the probability that an impact was caused by accident. When a finding is statistically significant, this means that there is confidence that the result is meaningful. Thus, it is used to justify the plausibility of the null hypothesis, which states that the data are merely the product of chance.

According to Willard (2020, pp. 118-129), this measure is called the p-value, usually denoted by the Greek letter alpha. According to the importance of rejecting the null hypothesis, an alpha ranges from .80 to .99, implying that the likelihood of the finding being true is between 80 percent and 99 percent. In the current study, an alpha of .05 and .01 is being used, meaning that the findings are valid with a probability of 95 percent and 99 percent, respectively.

**Reliability:** In statistics, reliability is defined as the likelihood that the results will be consistent when repeated. While there are several methods for determining reliability, the most widely used is Cronbach's alpha of .70 or higher (Kline, 2015, p. 91). However, a Cronbach's alpha of .60 is acceptable, which will therefore be used in the current study.

**Goodness of Fit:** Indicators of goodness-of-fit determine whether the model under test fits the data and should be accepted. In contrast to the statistics mentioned above, theorists disagree on what constitutes a good fit criterion (Kline, 2015, p. 276).

Nevertheless, given the study's data, the model's moderate complexity, the relatively small sample size and the use of RStudio, the Chi-square test was chosen, along with its p-value (p) and the chi-square - degree of freedom ratio.

Primarily due to the small sample size, the Fisher exact test was included as well. The Fisher exact test (exact Chi-square test) is a significance test for independence in contingency tables. However, in contrast to the Chi-square independence test, it has no sample size requirements and delivers reliable results even with fewer observations (Fisher, 1992, pp. 66-70).

According to Kline (2015, pp. 270-283), the Chi-square test of independence is widely used to decide whether two categorical variables have a significant relationship. The null hypothesis for this test is that the two variables (i.e., vulnerability and trust) have no relationship. The alternative hypothesis, on the other hand, is that there is a correlation.

The p-value of the exact chi-square should be less than .05 to allow a 95 percent confident inference about the hypothesis. Furthermore, the chi-square - degree of freedom ratio must be under four (Kline, 2015, pp. 270-283).

## **4. Results, Findings and Discussion**

The following section presents and discusses the results of the questionnaire data analysis in three main parts: (1) perceptions of vulnerability in GVTs, (2) leadership effectiveness in GVTs, (3) Vulnerability on leadership effectiveness in GVTs.

Table 21 summarizes the descriptive statistics and correlation analysis of the mean values of the vulnerability and leadership effectiveness variables (LEV) measured in this research. Table 21 can be found in Appendix 8.2. As mentioned in Chapter 3.3.1, gender was included as a control variable. Due to the minor variation of ethnicity, culture was neglected as a control variable.

Vulnerability is slightly more demonstrated among all females (scoring 4.01 on average) than males (scoring 3.98 on average). Furthermore, subordinates are less likely to demonstrate vulnerability (scoring 3.93) than leaders (scoring 4.14 on average). Comparing the scores of females and males, the influence of gender can be neglected for this study.

The obtained questionnaire results on attitudes towards vulnerability, including the formulated hypothesis, are presented first. In a second step, the sub-variables of vulnerability and trust will be explored and the relationship between vulnerability and trust examined.

Thirdly, the leadership effectiveness scores - the quality of communication, job satisfaction, organizational commitment and team performance - are evaluated individually concerning trust. The vulnerability demonstrated of the individual team member is then compared to the leadership effectiveness of the specific team leader of that individual.

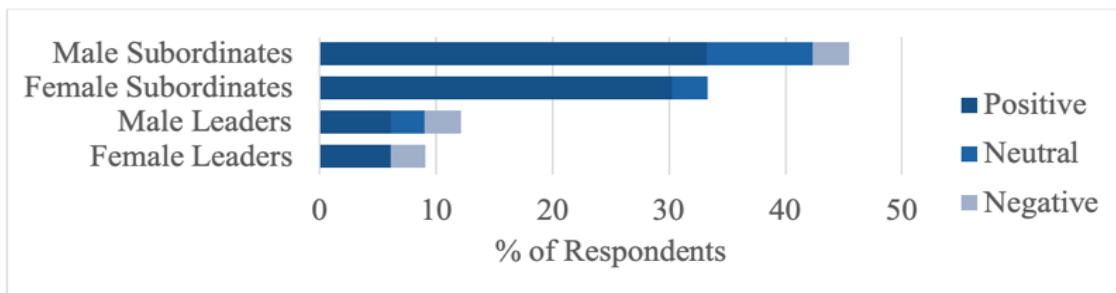
Finally, the central research question of whether vulnerability impacts and contributes to leadership effectiveness in the context of GVTs is analyzed and discussed. The limitations of this research report are presented in Chapter 5. Additionally, the subsequent four hypotheses will be, with the help of the obtained questionnaire data, tested and discussed throughout Chapter 4.

- H1:** The attitude towards vulnerability in the context of GVTs is generally positive and vulnerability is believed to influence leadership effectiveness positively.
- H2:** Trust does not develop without a certain level of demonstrated vulnerability and vice versa and the two are therefore positively correlated with each other.
- H3:** Trust is expected to be one of the most important factors for leadership effectiveness in a GVT and thus to correlate with the four identified individual effectiveness variables.
- H4:** Subordinates demonstrating vulnerability are expected to work in effective GVTs.

### 4.1. Perception of Vulnerability in GVTs

Given the connections found of vulnerability in the context of leadership effectiveness theories, this supports the argument that vulnerability should influence leadership effectiveness in GVT positively. Nevertheless, to outline the contribution of vulnerability and support the final research question, it is essential to understand the typical attitude towards demonstrated vulnerability in GVTs.

Figure 3: Distribution of Perceptions of Vulnerability in GVTs



Source: RStudio / Survey

55% of the respondents revealed their opinion towards vulnerability by answering the question, “Do you believe that demonstrating vulnerability can have an impact on the team dynamics and the effectivity of its leader? If so, why?”. The data obtained included 33 observations, in which 26 subordinates and 7 leaders elaborated on the idea.

The general attitude towards demonstrated vulnerability in global GVTs is positive. 76% believe that vulnerability has a positive effect in a GVT, whereas 15% have a neutral attitude and 9% believe it negatively affects them. Detailed information on the answers can be found in Appendix 8.6.

#### **4.1.1. Negative Perceptions**

The opposing parties see vulnerability as a weakness and risk and claim that vulnerability will negatively impact trust. It is argued that individuals may take advantage out of the situation if vulnerability is shown.

#### **4.1.2. Neutral Perceptions**

Neutral opinions are best summarized with the statement: “It depends.” They believe that demonstrating vulnerability can have positive or negative influences depending on different factors such as the level of emotional exposure when demonstrating vulnerability and the individuals and their attitudes towards vulnerability in the specific team.

#### **4.1.3. Positive Perceptions**

Positive attitudes include a variety of believed outcomes of vulnerability in a GVT. The opinion that vulnerability has a positive effect on trust and open communication, leading to performance and effectiveness through alignment, is most prominent. Furthermore, vulnerability is associated with authenticity, honesty, transparency and the ability to be self-aware and being human.

Vulnerability is also stated as being a tool to identify possible shortcomings and initiate change. It is further believed that vulnerability in GVTs has a positive influence on relationship building. Additionally, demonstrated vulnerability positively influences a supportive and safe environment without shame.

Therefore, hypothesis one can be accepted. Demonstrated vulnerability is generally perceived as having a positive impact on the team effectiveness in GVTs and it is generally believed that vulnerability positively influences leadership effectiveness.

### **4.2. Leadership Effectiveness in GVTs**

Throughout the literature, it is evident that trust plays a crucial role in leadership effectiveness. Furthermore, vulnerability is claimed to be an essential driver in forming trust, indicating a strong positive correlation between the two.

Table 5 depicts the percentage responses of the three variables representing vulnerability in this study – emotional exposure, empathy and integrity - measuring the overall demonstrated vulnerability among participants. Table 6 summarizes the descriptive statistics of the same variables listed above.

Table 5: Descriptive Analysis; Demonstrated Vulnerability

Variable	#	Response	%
<b>Emotional Exposure</b>  I am willing to let my guard down with others, even in situations where I feel like I should protect myself and only show strength.	1	Strongly disagree	.0
	2	Disagree	28.3
	3	Undecided	31.7
	4	Agree	31.7
	5	Strongly agree	6.7
<b>Empathy</b>  I practice nonjudgment by not judging others when they are asking for what they need or asking for help.	1	Strongly disagree	.0
	2	Disagree	3.3
	3	Undecided	8.3
	4	Agree	45.0
	5	Strongly agree	41.7
<b>Integrity</b>  I stay aligned with my values when facing tough decisions.	1	Strongly disagree	.0
	2	Disagree	.0
	3	Undecided	5.0
	4	Agree	33.3
	5	Strongly agree	56.7

Source: RStudio / Survey

Table 6: Vulnerability Questionnaire Score

	n	M*	SD	CV
<b>1 Vulnerability (AgLV)</b>	60	3.99	.54	.14
<b>2 Emotional Exposure</b>	60	3.17	.92	.29
<b>3 Empathy</b>	60	4.27	.76	.02
<b>4 Integrity</b>	60	4.55	.59	.03

Source: RStudio / Survey

With a mean score of 3.17 and 38.4% of the participants agreeing that they are willing to let their guard down, the following can be concluded. Even though perceptions of demonstrated vulnerability are generally positive and are believed to contribute to various aspects in a GVT positively, individuals are somewhat not ready to show vulnerability themselves. Furthermore, with a mean score of 4.27 and 86% agreeing on practicing non-judgment, it can be said that most people can practice empathy actively.

Lastly, it can be concluded that most individuals stay aligned with their values when facing tough decisions, evident with a mean score of 4.55 and 90% of respondents agreeing on that statement.

Aggregated level variables (AgLV) data representing the variable “vulnerability” with a mean score of 3.99, a standard deviation of .54 and a coefficient of variation of .14 is further used for comparison and correlation analysis. Including all three items, 71% of participants agree on being vulnerable.

Table 7 depicts the percentage responses of the three variables representing trust in this study – perceived trustworthiness, cooperative behavior and propensity to trust - measuring the overall level of trust in GVTs. Table 8 summarizes the descriptive statistics of the same variables listed above.

*Table 7: Descriptive Analysis; Trust*

Variable	#	Response	%
<b>Perceived Trustworthiness</b>  We have complete confidence in each other’s ability to perform tasks.	1	Strongly disagree	.0
	2	Disagree	6.7
	3	Undecided	18.3
	4	Agree	58.3
	5	Strongly agree	15.0
<b>Cooperative Behavior</b>  In our team we discuss and deal with issues or problems openly.	1	Strongly disagree	.0
	2	Disagree	6.7
	3	Undecided	15.0
	4	Agree	38.3
	5	Strongly agree	38.3
<b>Propensity to Trust</b>  People in our team usually tell the truth, even when they know they will be better off by lying.	1	Strongly disagree	.0
	2	Disagree	8.3
	3	Undecided	18.3
	4	Agree	40.0
	5	Strongly agree	30.0

*Source: RStudio / Survey*

*Table 8: Trust Questionnaire Score*

	n	M*	SD	CV
<b>5 Trust (AgLV)</b>	60	3.97	.65	.16
<b>6 Perceived Trustworthiness</b>	60	3.85	.78	.20
<b>7 Cooperative Behavior</b>	60	4.1	.9	.23
<b>8 Propensity to Trust</b>	60	3.95	.91	.23

*Source: RStudio / Survey*

With a mean score of 3.85 and 73% of the participants having confidence in each other, it can be concluded that perceived trustworthiness is mainly given throughout GVTs. Furthermore, with a mean score of 4.1 and 77% agreeing on collaborative



practices, cooperation throughout GVTs is evident. Lastly, the propensity to trust in GVTs is considered high, with a mean score of 3.95 and 70% agreeing on people telling the truth.

AgLV data representing the variable “trust” with a mean score of 3.97, a standard deviation of .65 and a coefficient of variation of .16 is further used for comparison and correlation analysis. Including all three items, 73% of participants agree on a reasonable level of trust within their team.

#### 4.2.1. Vulnerability and Trust

As outlined earlier, various statistical criteria were defined, namely: chi-square, degree of freedom, probability, exact chi-square, Cronbach’s alpha and Pearson correlation. As portrayed in Table 9, all indexes’ corresponding criteria are fulfilled aside from the Pearson correlation ( $\beta < .30$ ). Slightly against the expectation of a strong positive relationship, vulnerability impacts trust relatively weak ( $\beta = .29, p < .05$ ).

However, given the statistical significance, the reliability index (Cronbach’s  $\alpha = .62$ ), which is acceptable, the probability as well as the exact p-value of the Chi-square test, the null hypothesis can be rejected. Vulnerability and trust positively correlate and the connection of the two constructs is statistically validated.

Table 9: Goodness of Fit Statistics; Vulnerability and Trust

Index	Score	Criteria
<b>Chi-Square</b>	79.26	The smaller the better
<b>Probability</b>	.02	< .05
<b>Exact Probability</b>	.01	< .05
<b>Degree of Freedom</b>	56	none
<b>Chi-Square/DF</b>	1.42	< 4
<b>Cronbach’s Alpha</b>	.62	> .06
<b>Pearson Correlation</b>	.29**	> .30

\*\* Pearson Correlation is significant at the .05 level (2-tailed).

Source: RStudio / Survey

Thereupon, hypothesis two can be accepted. The acceptance of hypothesis two will allow to analyze the two constructs individually and assess the influence of demonstrated vulnerability through the evaluation of the impact of trust on leadership effectiveness. Further information on percentage responses of the three variables each, representing “quality of communication,” “job satisfaction,” “organizational commitment” and team performance” can be found in Appendix 8.3.

The sub-variables were not evaluated individually since this is beyond the scope of the current study. Table 10 summarizes the descriptive statistics of all LEVs. With a general mean score of above 3.7 throughout all AgLV and average AgLV data scores of 72% agreeing on high-quality communication, 82% agreeing on being satisfied in their job, 57% being committed and 64% claiming to perform and a relatively low coefficient of variance, it can be concluded that leadership effectiveness in GVTs is given in approximately two-thirds of the cases (69%).

Table 10: Questionnaire Scores of Individual LEVs

	<b>n</b>	<b>M*</b>	<b>SD</b>	<b>CV</b>
<b>9 Quality of Communication (AgLV)</b>	60	4.01	.71	.18
<b>13 Job Satisfaction (AgLV)</b>	60	4.35	.59	.14
<b>17 Organizational Commitment (AgLV)</b>	60	3.7	.86	.23
<b>21 Team Performance (AgLV)</b>	60	3.79	.64	.17

Source: RStudio / Survey

Table 11 depicts the correlations among the individual LEVs, including leaders and subordinates. For this analysis, only the AgLV data is used. It is expected that all LEVs correlate positively, given the fact that all variables represent leadership effectiveness.

Table 11: Correlation Analysis of Individual LEVs

		<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
<b>3 Quality of Communication</b>	Pearson Correlation	1			
	Sig. (2tailed)				
	N	60			
<b>4 Job Satisfaction</b>	Pearson Correlation	.46*	1		
	Sig. (2tailed)	.000			
	N	60	60		
<b>5 organizational Commitment</b>	Pearson Correlation	.41*	.68*	1	
	Sig. (2tailed)	.001	.000		
	N	60	60	60	
<b>6 Team Performance</b>	Pearson Correlation	.32**	.32**	.22	1
	Sig. (2tailed)	.013	.014	.086	
	N	60	60	60	60

\* Correlation is significant at the .01 level (2-tailed). // \*\* Correlation is significant at the .05 level (2-tailed).

Source: RStudio / Survey

Slightly against the expectation, only three relationships can be classified as moderately correlated and highly significant.

These are: quality of communication with job satisfaction ( $\beta = .46, p < .01$ ), quality of communication with organizational commitment ( $\beta = .41, p < .01$ ) and job satisfaction with organizational commitment ( $\beta = .68, p < .01$ ). However, team performance significantly moderately correlates with the quality of communication ( $\beta = .32, p < .05$ ) as well as job satisfaction ( $\beta = .32, p < .05$ ). Interestingly, the relationship between team performance and organizational commitment is weak and not significant ( $\beta = .22$ ). Therefore, it can be concluded that performance is not necessarily dependent on an employee’s organizational commitment.

#### 4.2.2. Trust and OLE

Hypothesis three in the current research claims that trust is expected to be one of the most critical factors for leadership effectiveness in a GVT and thus correlates with the four identified individual effectiveness variables. Table 12 summarizes the AgLV data correlation and significance scores and shall serve as a guiding framework. Furthermore, the statistical methods chi-square, degree of freedom and the exact Chi-square test and Cronbach’s alpha were also applied.

Table 12: Correlation Analysis of Trust and Individual LEVs

		<b>2</b>
<b>2 Trust</b>	Pearson Correlation	1
	Sig. (2tailed)	
	N	60
<b>3 Quality of Communication</b>	Pearson Correlation	.55*
	Sig. (2tailed)	.000
	N	60
<b>4 Job Satisfaction</b>	Pearson Correlation	.40*
	Sig. (2tailed)	.002
	N	60
<b>5 Organizational Commitment</b>	Pearson Correlation	.27**
	Sig. (2tailed)	.037
	N	60
<b>6 Team Performance</b>	Pearson Correlation	.34*
	Sig. (2tailed)	.008
	N	60

\* Correlation is significant at the .01 level (2-tailed). // \*\* Correlation is significant at the .05 level (2-tailed).

Source: RStudio / Survey

As portrayed in Table 12, all variables show a positive correlation which is as expected. Whereas the relationship between trust and the quality of communication

( $\beta = .55, p < .01$ ) as well as the relationship between trust and job satisfaction ( $\beta = .40, p < .01$ ), are considered to be moderate as well as highly significant, the correlations between trust and organizational commitment ( $\beta = .27, p < .05$ ) is rather weak. Trust and team performance correlates moderately and significantly ( $\beta = .34, p < .01$ ).

Table 13: Goodness of Fit Statistics; Trust and LEVs

Index	3	4	5	6	Criteria
Chi-Square	85.96	114.91	108.5	59.12	The smaller the better
Probability	.03	.00	.00	0.36	< .05
Exact Probability	.02	.00	.00	0.65	< .05
Degree of Freedom	64	56	72	56	none
Chi-Square/DF	1.34	2.05	1.5	1.05	< 4
Cronbach Alpha	.75	.68	0.74	0.68	> .06

Source: RStudio / Survey

Table 13 provides an overview of all indexes used to determine if there are non-random associations between the two categorical variables (i.e., trust and quality of communication). It can be concluded, with a confidence of 95% that the level of trust has a moderate positive influence on the quality of communication ( $\beta = .55, p < .01$ ) and on the job satisfaction of each individual ( $\beta = .40, p < .01$ ) and a weak positive influence on organizational commitment ( $\beta = .27, p < .05$ ). Given the fact that all connections are significant (Table 21) and the acceptable reliability index throughout all data presented (Cronbach's  $\alpha = > .06$ ), as well as the probability as well as exact probability below ( $p < .05$ ), the null hypothesis, claiming that there is no relationship, can be rejected in the following relationships:

- Trust and Quality of Communication
- Trust and Job Satisfaction
- Trust and Organizational Commitment

Contrarily surprising is that the positive correlation between trust and team performance cannot be statistically validated, as the null hypothesis needs to be accepted. Although the positive correlation is significant, as shown in Table 21 ( $\beta = .34, p < .05$ ), the Chi-square test as well as the exact Chi-square test indicate no relationship between the two variables ( $p = > .05$ ).

As illustrated in Table 13, the chi-square p-values exceed the criteria. Thus, hypothesis three can only be partially confirmed.

Nevertheless, as the quality of communication, job satisfaction, organizational commitment and team performance are considered to represent leadership effectiveness in the current study, the AgLV data of all listed variables was used to evaluate the overall impact of trust.

*Table 14: AgLV Trust and AgLV OLE Questionnaire Score*

	<b>n</b>	<b>M*</b>	<b>SD</b>	<b>CV</b>
<b>5 Trust (AgLV)</b>	60	3.97	.65	.16
<b>26 Leadership Effectiveness (AgLV)</b>	60	3.96	.52	.13

*Source: RStudio / Survey*

As shown in Table 14, AgLV data representing the overall leadership effectiveness (OLE) in GVTs indicate a relatively high level of leadership effectiveness with a mean score of 3.96. It can be concluded that leadership effectiveness in GVTs is given in approximately two-thirds of the cases (69%), as already illustrated earlier.

*Table 15: Goodness of Fit Statistics; AgLV Trust and OLE*

<b>Index</b>	<b>Score</b>	<b>Criteria</b>
<b>Chi-Square</b>	210.97	The smaller the better
<b>Probability</b>	.00	< .05
<b>Exact Probability</b>	.00	< .05
<b>Degree of Freedom</b>	144	none
<b>Chi-Square/DF</b>	1.47	< 4
<b>Cronbach's Alpha</b>	.85	> .06
<b>Pearson Correlation</b>	.34*	> .30

\*\* Pearson Correlation is significant at the .05 level (2-tailed).

*Source: RStudio / Survey*

### **4.3. Vulnerability and Leadership Effectiveness in GVTs**

Considering the discussed contagiousness of vulnerability among individuals and its impact on leadership effectiveness as discussed through various models in the current research, it can be hypothesized that vulnerability demonstrated by a team member should positively correlate with the leader's effectiveness of the team.

### 4.3.1. Vulnerability and PLE

For the first part of the analysis, only the collected data regarding demonstrated vulnerability and their perception of their leader's effectiveness of subordinates was used. Further information on percentage responses of the six variables representing PLE can be found in Appendix 8.4.

These were not evaluated individually, as the six items are only valid on an aggregated level. Table 16 summarizes the descriptive statistics vulnerability of subordinates and PLE.

Table 16: AgLV Vulnerability and AgLV PLE of Subordinates Questionnaire Score

	<b>n</b>	<b>M*</b>	<b>SD</b>	<b>CV</b>
<b>1 Vulnerability of Subordinates (AgLV)</b>	43	3.94	.56	.14
<b>25 PLE (AgLV)</b>	43	4.05	.56	.14

Source: RStudio / Survey

Notable is the minimal difference of the mean score and standard deviation of vulnerability of subordinates compared to the demonstrated vulnerability of all participants, including leaders (Table 6). Thus, it can be said that demonstrated vulnerability of subordinates and leaders are not significantly different within GVT's.

Table 17: Goodness of Fit Statistics; Subordinates Vulnerability and PLE

<b>Index</b>	<b>Score</b>	<b>Criteria</b>
<b>Chi-Square</b>	102.27	The smaller the better
<b>Probability</b>	.09	< .05
<b>Exact Probability</b>	.02	< .05
<b>Degree of Freedom</b>	84	none
<b>Chi-Square/DF</b>	1.22	< 4
<b>Cronbach's Alpha</b>	.78	> .06
<b>Pearson Correlation</b>	.36**	> .30

\*\* Pearson Correlation is significant at the .05 level (2-tailed).

Source: RStudio / Survey

As portrayed in Table 17, all indexes' corresponding criteria are fulfilled apart from the chi-square probability ( $p > .05$ ). As expected, the positive correlation ( $\beta = .36$ ,  $p < .05$ ) is considered as a moderate positive correlation. However, given the statistical significance, the reliability index (Cronbach's  $\alpha = .78$ ), as well as the exact probability of the Chi-square test ( $p = 0.02$ ), the null hypothesis can be rejected.

As the sample size is even smaller considering that only subordinates were included in this test, the exact probability (exact Chi-square test) is more reliable, as the chi-square probability is considered an approximation should be avoided when having small sample sizes.

Therefore, hypothesis four can be accepted – there is a positive correlation of subordinates demonstrating vulnerability working for an effective leader, which is statistically validated.

#### 4.3.2. Vulnerability and OLE

For a final indication on the impact of vulnerability directly on leadership effectiveness, including all data, Table 21 summarizes the descriptive statistics vulnerability of subordinates and OLE.

Table 18: AgLV Vulnerability and AgLV OLE Questionnaire Score

	n	M*	SD	CV
<b>1 Vulnerability (AgLV)</b>	60	3.99	.54	.14
<b>26 Leadership Effectiveness (AgLV)</b>	60	3.96	.52	.13

Source: RStudio / Survey

Table 19: Goodness of Fit Statistics; AgLV Vulnerability and OLE

Index	Score	Criteria
<b>Chi-Square</b>	134.91	The smaller the better
<b>Probability</b>	.28	< .05
<b>Exact Probability</b>	.40	< .05
<b>Degree of Freedom</b>	126	none
<b>Chi-Square/DF</b>	1.07	< 4
<b>Cronbach's Alpha</b>	.84	> .06
<b>Pearson Correlation</b>	.44*	> .30

\*\* Pearson Correlation is significant at the .05 level (2-tailed).

Source: RStudio / Survey

As shown in Table 22, the indexes' corresponding criteria, including the chi-square p-value and the exact chi-square probability, are not fulfilled ( $p > .05$ ). The assumption that demonstrated vulnerability directly impacts leadership effectiveness is not supported when including leaders and subordinates in the evaluation.

Even though the demonstrated vulnerability of subordinates and leaders are not significantly different within GVT's, it can be concluded that demonstrated vulnerability leads to differentiated outcomes when comparing leaders to subordinates.

#### **4.4. Discussion of Results**

This analysis supports the theory that vulnerability contributes positively to leadership effectiveness overall. Nevertheless, the contribution of vulnerability on leadership effectiveness in GVTs seems to depend on different aspects and also seems to be limited.

The results of Chapter 4.1 indicate a mainly positive attitude towards vulnerability among GVTs and support hypothesis 1, stating that the attitude towards vulnerability in the context of GVT is generally positive and vulnerability is believed to influence leadership effectiveness positively. They also do not support the fact that vulnerability is generally seen as a weakness and that leaders are always meant to be authoritarian, perfect and invulnerable (Brown, 2015, p. 2, 2018, p. 70; Clare, 2018, p. 64).

The positive attitudes towards vulnerability found are in line with the concepts of vulnerability as outlined by Brown (2015, 2018) and Coyle (2018), who mention various associations of vulnerability, including the aspect of trust, honesty, transparency, humanity, self-awareness, empathy and connection as well as vulnerability as a means of communication.

Furthermore, one of the prominent associations of vulnerability with seeing an individual as being human supports the social identity theory of Hogg (2001, p. 196), on which Van Knippenberg (2011, p. 1087) based his argument that leadership effectiveness is dependent on followers' perception of the leader as a group member. In line with the optimistic view of vulnerability, all the elements listed lead to better team performance overall and improved leadership effectiveness.

Neutral associations of vulnerability with leadership effectiveness can be aligned with the theory of behavioral complexity (Hooijberg et al., 1997, p. 403), in which leaders exhibit various behaviors. This paradoxical viewpoint acknowledges that the capacity to execute multiple, contradictory leadership behaviors (i.e., demonstrating vulnerability, demonstrating strength) in a given situation may be a more significant indicator of effective leadership (Denison et al., 1995, pp. 524-540).

Opposing associations of vulnerability in leadership could be because the term first appeared in the context of disasters and negative factors in other areas and sectors, as described in Chapter 2.3.



The typical attitude of members in GVTs of a positive influence of vulnerability on leadership effectiveness (76%) implies that vulnerability should be displayed more often. However, only 38.4% are willing to “let their guard down.”

This indicates that individuals are afraid to open up and be vulnerable, as this is always associated with taking a risk. Therefore, demonstrating vulnerability depends strongly on the individual’s perception and personality, which could be an obstacle in deciding for or against vulnerability.

Interestingly, among the subordinates who answered the question, none indicated that they believe vulnerability harms GVTs, suggesting that the perception of vulnerability in GVTs is also dependent on one’s position within the GVT. Assuming that it is riskier for a team leader to show vulnerability than for a subordinate, these results are valid. The contribution of vulnerability seems to depend on the perception of each individual in the GVT. Thus, it is necessary to understand the team’s attitude towards vulnerability, as it could contribute strongly positively or negatively.

The significant positive correlation found between vulnerability and trust supports Brown’s (2018, p. 83) and Coyle’s (2018, p. 112) theories on the interconnection of trust and vulnerability. Furthermore, the results underline the arguments of various scholars that have established connections between vulnerability and trust (Deb & Chavali, 2010, pp. 43-60; Rousseau et al., 1998, pp. 393-404).

According to Nienaber and Romeike (2015, pp. 17-18), vulnerability is considered a critical factor in developing trust. Similar concepts to vulnerability connected to trust include Gardner et al. (2005, p. 346), who connected relational transparency to trust and Breuer et al. (2020, p. 13), who claim that VTs need to be more transparent to influence trust positively. However, given the moderately weak positive correlation ( $\beta = .29, p < .05$ ), it can be argued that vulnerability might be one factor, among others, that lead to trust in GVTs.

Notwithstanding, given its significance, hypothesis two, stating that vulnerability and trust correlate, can be accepted. The connection between the two constructs is statistically validated. However, it is important to note that the correlation found was lower than expected and challenge existing theories on vulnerability and trust when applied to the context of GVTs. As interaction in GVTs can be complicated, lengthy and limited (Horwitz et al., 2006, pp. 472-494; Johnson & Hiltz, 1990, pp. 739-764; Warkentin et al., 1997, pp. 975-996), the opportunities to foster trust through demonstrating vulnerability may be hindered.

Another possible explanation of the relatively weak correlation could be Khazanchi and Masterson's (2011, pp. 97-101) explanation, which suggests that the exchange of vulnerability should be balanced to foster optimal trust.

Furthermore, Sutton (2004, pp. 393-395) claims that emotion regulation enhances leadership effectiveness. It can be concluded that vulnerability does indeed positively influence trust and vice versa, as being vulnerable requires one party to trust the other (Brown, 2018, p. 313; Mayer et al., 1995, p. 712).

It could be argued that the balance of exposing emotions may be influenced through infrequent interaction. Additionally, vulnerability must be real and authentic, as pretended vulnerability leads to mistrust, according to Austin et al. (2014, pp. 10-13). Lastly, GVT members must have the opportunity to have meaningful interaction and show vulnerability to develop trust since otherwise, the lack of social context cues may undermine trust. Leaders must proactively seek interaction in GVTs.

The literature supports the assumption that trust is an essential driver of organizational outcomes such as communication, job satisfaction and organizational commitment and team performance, as shown by indications through various leadership effectiveness theories as well as direct implications of literature on trust on leadership effectiveness in general as well as in VTs.

Nevertheless, previous findings within these theories regarding the influence of trust on team performance as a single variable cannot be confirmed in the context of GVTs. Hypothesis three, claiming that trust is an important driver of leadership effectiveness and correlates with the four identified LEVs, is therefore partially confirmed in the context of GVTs.

OLE, including all four identified leadership effectiveness measurements in the current study, increases with trust enhancement. The findings support the assumption that trust within a GVT leads to enhanced leadership effectiveness. These results support the theory of Recardo et al. (1996, pp. 115-117), claiming that developing trust is a necessary behavior for effective leadership and Holton (2001, p. 39), who claims that trust is the basis of collaboration and thus effectiveness in a GVT.

Further examining the influence of trust on the four identified LEVs, trust seems to have a relatively strong impact on the quality of communication within a GVT ( $\beta = .55, p < .01$ ). In line with the theoretical view of relational authenticity of Ilies et al. (2005, pp. 373-394), the vulnerability space leading to trust should improve collaboration which is evident in this study.

Moreover, it supports the findings of Avolio et al. (2004a, p. 829), claiming that authentic leaders build integrity with their employees by encouraging open communication. Given the result of the relationship between vulnerability and trust evaluated earlier in this Chapter, this result also supports the argument of Coyle (2018, p. 104), who describes vulnerability as a tool for open and transparent communication and Brown (2018, pp. 230-250), who claims that courageous leadership enhances leadership effectiveness. Thus, it can be concluded that this would significantly increase leadership effectiveness within a GVT, as communication considered one of the most pronounced issues according to literature as outlined in Chapter 2.1.

In line with the findings of Scandura and Pellegrini (2008, pp. 101-110), who argued that trust is a primary driver of LMX, trust seems to be an essential driver of the relationship between leader and member, supporting the current papers finding of the influence of trust on the outcomes such as quality of communication, job satisfaction and organizational commitment.

Commitment and job satisfaction were also connected to LMX within the study of Dulebohn et al. (2012, pp. 1737-1744), including performance as a positive correlate. However, the findings of trust and team performance ( $\beta = .34, p < .05$ ) of the current study cannot be statistically validated and are therefore not alignable with the empirical work. Considering the relationship-building aspect of vulnerability and the fact that trust should enhance the leader-member relationship, trust should positively correlate to team performance.

The results also contradict the claims of Walumbwa et al. (2008, p. 106), stating that authentic leadership results in trust, which then results in job satisfaction, organizational commitment and performance. Whereas the result of the relationship between trust and job satisfaction is evident in the current study ( $\beta = .40, p < .01$ ), indicating a moderately positive impact, as well as the impact on organizational commitment ( $\beta = .27, p < .05$ ), team performance cannot be associated to trust in the context of the current study. Moreover, Peus et al. (2012, pp. 337-339) found significant positive correlations between authentic leadership and job satisfaction and team performance.

Lastly, Avolio et al. (2004b, pp. 951-968) found evidence that the transformational leadership theory, in which trust plays a crucial role, positively influences organizational commitment. Furthermore, Judge et al. (2004, pp. 755-768) linked the transformational leadership theory to satisfaction and performance.

Therefore, the results contradict the claims of the above-listed scholars and can only partially be supported with the results of the current study.

Interestingly, the findings of the current paper regarding performance could be explained by Kirkman et al. (2002, pp. 67-79), who describes trust to be an outcome of effective task accomplishment (performance), indicating a positive influence of performance on trust, rather than other way around in the context of VTs. Thus, it can be concluded that trust and, therefore vulnerability, do not influence team performance in GVTs. Given the interconnections of trust and vulnerability argued in this study, it could be stated that the findings which indicate no relationship between trust and team performance in GVT's, support the argument of Longmire and Harrison (2018, p. 908), claiming that empathy, which is considered to be an outcome of vulnerability, is a burden on strategic decision-making, impacting performance.

Evaluating the contribution of vulnerability via trust, the contribution of vulnerability seems to be limited. Vulnerability has a positive influence on trust, as shown in Chapter 4.2. Vulnerability was therefore directly opposed to OLE. Considering the literature reviewed, one may assume that the impact should be much more tangible. It can be concluded that vulnerability only contributes to a certain extent to leadership effectiveness in GVT's, excluding team performance, if it preliminarily contributed to trust formation or vice versa.

Vulnerability of the subordinates was directly examined towards the PLE of their specific leader. According to the current research, subordinates who demonstrate vulnerability work for an effective leader. The current study's findings confirm the argument that vulnerability, once demonstrated, increases mutual trust and is also contagious, leading to a better relationship between leader and member. Considering the results of Chapter 4.2, which indicate an increase in leadership effectiveness through trust (excluding team performance), these findings are valid.

However, comparing the results within Chapter 4.3, namely the relationship between vulnerability of subordinates and PLE with the relationship between the general level of vulnerability and OLE in GVTs, it can be argued that the contribution of vulnerability has a different impact on leadership effectiveness in a GVT, depending on if a leader demonstrates it or demonstrated by a subordinate.

This could be since leaders and subordinates differ in their perception of vulnerability, as shown in Chapter 4.1. Whereas subordinates have a generally positive

attitude towards vulnerability, leaders seem to be more critical in showing their true selves according to qualitative evaluation.

Empirical work on the impact of vulnerability on leadership effectiveness was not found. Therefore, it is not possible to compare these results with existing literature. However, Walumbwa et al. (2008, p. 109) found significant correlations between relational transparency, which is closely linked to vulnerability, to job satisfaction, organizational commitment and performance, implying some valuable indications for the current thesis assumption that vulnerability contributes to leadership effectiveness. Nevertheless, in the context of GVT's, also these findings regarding the team performance of Walumbwa et al. (2008, p. 116) are being challenged.

## 5. Limitations and Further Research

**Sample and Selection:** This study has some limitations that must be acknowledged. First and foremost, the data obtained is relatively homogeneous. The majority of the participants were between the ages of 21 and 30 and they were from Switzerland's German-speaking region. This entails limitations in terms of both geographic location and age. Even though data of other age groups and ethnicities was obtained and therefore findings are valid on the global aspect of the current study, the number of observations was unfortunately too sparse to develop valid findings concerning ethnicity and age. Thus, expanding the model, including possible effects of culture and different generations, would be very interesting for researchers.

Next, the sample size of the data limits the current study. Even though significant findings could be established, the evaluations regarding leaders' perception of vulnerability or single evaluations of leaders regarding their inherently demonstrated vulnerability and leadership effectiveness must be viewed cautiously. Since only one-third of the obtained data represented leaders, a reasonable population presentation may not be given.

**Evaluation Techniques:** The statistical analysis focused on bivariate correlations implied causalities or influences should be considered prudently. The directions of causalities were derived from proposals in the literature (i.e., trust and job satisfaction). Furthermore, some implied causalities, such as trust in team performance, are contradicting in the literature. Whereas some scholars claim that trust is caused by performance, others claim that team performance is caused by trust. A direct causal analysis through multilevel modeling was not conducted in this study and would be interesting for further research.

**Lack of Previous Research:** Third, vulnerability, as conceptualized in this study, is a largely unexplored field. While all survey items used for this study have been empirically validated, some research on validating variables or questions is limited, which could not be guaranteed due to a lack of data. As research on vulnerability itself is very limited, the impact of vulnerability on trust formation would be an exciting topic for further research.

Concerning emotions and trust, it might also be interesting to evaluate the dynamics of vulnerability and trust over time due to courageous leadership. Researchers may also pursue the effect of courageous leadership on the individual, team and organizational levels. As emotions can act as a catalyst for group-level outcomes, vulnerability may also act as a catalyst for organizational outcomes.

**Scope of the Study:** This study excluded the impact of personality on demonstrated vulnerability. While hypothetical connections between vulnerability and emotional intelligence as well as vulnerability and openness to experience within the FFM model were established, the personality factor was not controlled. Thus, an evaluation of the influence of personality on the readiness to demonstrate vulnerability may be worth to be researched. Including personality would deepen the insights on the contribution of vulnerability to leadership effectiveness.

Moreover, as outlined earlier in this paper, VTs usually deal with a lack of mutual trust. However, the current paper suggests that most GVT members agree on a high level of trust within their team. As comparing the level of trust in GVTs with traditional face-to-face teams goes beyond the scope of the current study, this may be a suggestion for further research. Furthermore, the assumption that trust and thus vulnerability, plays a different role in contributing to leadership effectiveness in GVTs than in other teams (not including team performance as an outcome), a direct comparative study, including GVTs, VTs and face-to-face teams, maybe an interesting topic for further research.

**Critical Question:** Leadership and its effectiveness are some of the most researched topics. Nevertheless, with the emergence of self-managed teams with the collective responsibility to plan, manage and execute tasks independently to achieve a common goal and the trend of hierarchies becoming flat, the question of whether leadership will be required in the future has been raised. This is a question that only time can answer.

## 6. Conclusion

This study provides insights into how vulnerability is related to leadership effectiveness in GVTs and how vulnerability influences leadership effectiveness via trust.

The research empirically validates that the two constructs of vulnerability and trust are interrelated and influence each other and shows insight on (1) perceptions of vulnerability in GVTs and significant results in two areas: (2) trust and leadership effectiveness in GVTs, (3) vulnerability on leadership effectiveness in GVTs.

At the theoretical level, derived from several leadership theories that include trust and similar concepts such as vulnerability as a major component of leadership effectiveness, insights were gained into the foundations on which the multidimensional construct of vulnerability as a driver of trust is built.

The findings show that trust, most likely among other things, is a critical intercorrelate of vulnerability and that one cannot be achieved in the absence of the other. This raised the question if the level of leadership effectiveness is compromised, which part - vulnerability or trust - is more susceptible, which further extended the understanding and mechanisms of existing theory and allowed the model to be examined in terms of the two constructs.

In the empirical part, support was found for the assumption that vulnerability, even though widely regarded as a weakness, has a positive effect on team dynamics and thus on leadership effectiveness, including job satisfaction, organizational commitment and communication, excluding team performance in the context of GVTs.

Nevertheless, the results also showed that the two intercorrelated constructs, vulnerability and trust, provided different results when opposed to OLE, which is an interesting finding. It implies that although vulnerability is shown as a behavior, trust is not necessarily its outcome and vice versa, one may appear without the other. Based on these findings, it has been suggested to study further the impact of vulnerability on trust or vice versa. A better understanding of these interconnections would enable vulnerability to be used more effectively as a leadership tool.

The decisive result of this research study is the proven importance of trust in the quality of communication in GVTs. More specifically, the evidence that vulnerability plays a role in building a cohesive, trusting community and, therefore, can contribute to the effectiveness of leadership in a GVT, even though not performance.



Nevertheless, its contribution is limited as the first step towards vulnerability and trust would be to overcome that barrier of opening up. The next factor would be the degree of emotional exposure within the team. It can be highly dependent on the individual, the team member's position and the team itself if it contributes positively or negatively to the team dynamics.

Finally, a methodological conclusion from the data is inescapable: while vulnerability, i.e., courageous leadership, is highly welcomed in GVT's, trust is the driving force that can increase leadership effectiveness.

## 7. References

- Andres, H. P. (2002). A comparison of face-to-face and virtual software development teams. *Team Performance Management: An International Journal*, 8(1), 39-48.
- Austin, E. J., Saklofske, D. H., Smith, M., & Tohver, G. (2014). Associations of the managing the emotions of others (MEOS) scale with personality, the dark triad and trait EI. *Personality and Individual Differences*, 65, 8-13.
- Avolio, B. J. (2011). *Full range leadership development*. Thousand Oaks, California: Sage Publications.
- Avolio, B. J., & Gardner, W. L. (2005). Authentic leadership development: getting to the root of positive forms of leadership . *The Leadership Quarterly*, 16(3), 315–338.
- Avolio, B. J., Gardner, W. L., Walumbwa, F. O., Luthans, F., & May, D. R. (2004a). Unlocking the mask: a look at the process by which authentic leaders impact follower attitudes and behaviors. *The Leadership Quarterly*, 15(6), 801-823.
- Avolio, B. J., Kahai, S., & Dodge, G. E. (2001). E-Leadership: implications for theory, research and practice. *The Leadership Quarterly*, 11(4), 615-668.
- Avolio, B. J., Zhu, W., Koh, W., & Bhatia, R. (2004b). Transformational leadership and organizational commitment: mediating role of psychological empowerment and moderating role of structural distance. *Journal of Organizational Behavior*, 25(8), 951-968.
- Ayman, R. (1993). Leadership Perception: The role of gender and culture. In R. M. Chemes, & R. Ayman, *Leadership theory and research*. New York: Academic Press.
- Baron, R. A. (1989). Personality and organizational conflict: effects of the type a behavior pattern and self-monitoring. *Organizational Behavior and Human Decision Processes*, 44(2), 281-296.
- Barrick, M. R., & Mount, M. K. (1991). The big five personality dimensions and job performance: a meta-analysis. *Personnel Psychology*, 44(1), 1-26.
- Bass, B. M. (1990). From transactional to transformational leadership: learning to share the vision. *Organizational Dynamics*, 18(3), 19-31.
- Bass, B. M. (1995). Theory of transformational leadership redux. *The Leadership Quarterly*, 6(4), 463-478.

- Bass, B. M. (1998). The transformational model of leadership. In R. H. Gill, *Leading organizations: Perspectives for a new era*. Thousand Oaks, California: Sage Publications.
- Bass, B. M., & Stogdill, R. M. (1990). *Bass & Stogdill's handbook of leadership: theory, research, and managerial applications*. 3rd edition. New York: Free Press.
- Birkmann, J. (2006). *Measuring vulnerability to natural hazards: towards disaster resilient societies*. Tokyo, Japan: United Nations.
- Blake, R. R., & Mouton, J. S. (1964). *The managerial grid*. Houston, Texas: Gulf Publishing.
- Blum, R. W., McNeely, C., & Nonnemaker, J. (2002). Vulnerability, risk, and protection. *Journal of Adolescent Health, 31*(1), 28-39.
- Boal, K. B., & Hooijberg, R. (2000). Strategic leadership research. *The Leadership Quarterly, 11*(4), 515-549.
- Bohl, K. W. (2019). Leadership as phenomenon: reassessing the philosophical ground of leadership studies. *Philosophy of Management, 18*(3), 273–292.
- Breuer, C., Hüffmeier, J., Hibben, F., & Hertel, G. (2020). Trust in teams: a taxonomy of perceived trustworthiness factors and risk-taking behaviors in face-to-face and virtual teams. *Human Relations, 73*(1), 3-34.
- Brewer, J. (2020). Anxiety Is contagious. here's how to contain it. *Harvard Business Review*.
- Brown, B. (2015). *Daring Greatly: How the courage to be vulnerable transforms the way we live, love, parent, and lead*. London: Penguin Books Ltd.
- Brown, B. (2018). *Dare to lead: brave work. tough conversations. whole hearts*. New York: Random House.
- Brown, B. (2021, May 4). *Daring leadership assessment | dare to lead*. Retrieved from Daretolead.brenebrown.com: <https://daretolead.brenebrown.com/assessment/>.
- Burns, J. M. (2012). *Leadership*. New York: Open Road Integrated Media.
- Cameron, E., & Green, M. (2019). *Making sense of change management: a complete guide to the models, tools and techniques of organizational change*. 5th edition. London: Kogan Page.
- Carmel, E. (2002). Global software teams: opportunities and challenges of technology-enabled work. *Perspectives on Work, 6*(2), 6-8.
- Carroll, S. J., & Gillen, D. I. (1987). Are the classical management functions useful in describing managerial work? *Academy of Management Review, 12*(1), 38-51.

- Carter, J. C. (2009). Transformational leadership and pastoral leader effectiveness. *Pastoral Psychology, 58*(3), 261-271.
- Cascio, W. F. (2000). Managing a virtual workplace. *The Academy of Management Executive, 14*(3), 81-90.
- Chambers, R. (2006). Vulnerability, coping and policy. *IDS Bulletin, 37*(4), 33-40.
- Clare, H. (2018). Vision and vulnerability: thoughts on leadership and conservation. *Studies in Conservation, 63*(1), 64-69.
- Cooper, J. F., & Nirenberg, J. (2004). Leadership effectiveness. In Goethals, G. R., Sorenson, G. J., Burns, J. M. *Encyclopedia of leadership* (pp. 450–457). Thousand Oaks, California: Sage Publications
- Costa, A. C., & Anderson, N. (2011). Measuring trust in teams: development and validation of a multifaceted measure of formative and reflective indicators of team trust. *European Journal of Work and Organizational Psychology, 20*(1), 119-154.
- Couris, J. D. (2020). Vulnerability: the secret to authentic leadership through the pandemic. *Journal of Healthcare Management, 65*(4), 248-251.
- Coyle, D. (2018). *The culture code: the secrets of highly successful groups*. New York: Bantam Books.
- Crampton, C. (2001). The Mutual knowledge problem and its consequences for dispersed collaboration. *Organization Science, 12*(3), 346-371.
- Daim, T. U., Ha, A., Reutiman, S., Hughes, B., Pathak, U., Bynum, W., & Bhatla, A. (2012). Exploring the communication breakdown in global virtual teams. *International Journal of Project Management, 30*(1), 199-212.
- Deb, M., & Chavali, K. (2010). Significance of trust and loyalty during financial crisis: a study on customer behavior of indian banks. *South Asian Journal of Management, 17*(1), 43-60.
- Denison, D. R., Hooijberg, R., & Quinn, R. E. (1995). Paradox and performance: toward a theory of behavioral complexity in managerial leadership. *Organization Science, 6*(5), 524-540.
- Deshwal, V., & Mohammed, A. A. (2020). A systematic review of various leadership theories. *International Journal of Commerce, 8*(1), 38-43.
- Dhar, U., & Mishra, P. (2001). Leadership effectiveness: a study of constituent factors. *Journal of Management Research, 1*(4), 254-266.

- Dienesch, R. M., & Liden, R. C. (1986). Leader-member exchange model of leadership: a critique and further development. *The Academy of Management Review*, *11*(3), 618-634.
- Doyle, A. (2021, March 18). *Important leadership skills for workplace success*. Retrieved from Thebalancecareers.com: <https://www.thebalancecareers.com/top-leadership-skills-2063782>
- Drucker, P. F. (1988). Coming of the new organization. *Harvard Business Review*.
- Druckman, D., Singer, J. E., & Van Cott, H. P. (1997). *Enhancing organizational performance*. Washington: National Academy Press.
- Dulebohn, J. H., Bommer, W. H., Liden, R. C., Brouer, R. L., & Ferris, G. R. (2012). A meta-analysis of antecedents and consequences of leader-member exchange: integrating the past with an eye toward the future. *Journal of Management*, *38*(6), 1715-1759.
- Eagly, A. H. (2005). Achieving relational authenticity in leadership: Does gender matter? *The Leadership Quarterly*, *16*(3), 459-484.
- Ehrhart, M. G., & Klein, K. J. (2001). Predicting followers' preferences for charismatic leadership: the influence of follower values and personality. *The Leadership Quarterly*, *12*(2), 153-179.
- Fan, K.-T., Chen, Y.-H., Wang, C.-W., & Chen, M. (2014). E-leadership effectiveness in virtual teams: motivating language perspective. *Industrial Management & Data Systems*, *114*(3), 421-437.
- Fidel, R. (1993). Qualitative methods in information retrieval research. *Library and Information Science Research*, *15*(3), 219-247.
- Fiedler, F. E. (1981). *A theory of leadership effectiveness*. New York: McGraw-Hill.
- Fineman, M. A. (2008). The vulnerable subject: anchoring equality in the human condition. *Yale Journal of Law and Feminism*, *20*(1), 177-191.
- Fisher, R. A. (1992). Statistical methods for research workers. In S. Kotz Norman, & L. Johnson, *Breakthroughs in statistics* (pp. 66-70). New York: Springer
- Gardner, J. W. (1993). *On leadership*. New York: Free Press.
- Gardner, W. L., Avolio, B. J., Luthans, F., May, D. R., & Walumbwa, F. (2005). "Can you see the real me?" a self-based model of authentic leader and follower development. *The Leadership Quarterly*, *16*(3), 343-372.
- George, J. M. (2000). Emotions and leadership: the role of emotional intelligence. *Human Relations*, *53*(8), 1027-1055.

- Gilson, L. L., Maynard, M. T., Vartiainen, M., Hakonen, M., & Young, N. C. (2014). Virtual teams research: 10 years, 10 themes, and 10 opportunities. *Journal of Management, 41*(5), 1313–1337.
- Goleman, D. (1995). *Emotional intelligence: why it can matter more than IQ*. Los Angeles, California: Audio Renaissance Tapes.
- Goleman, D. (2009). *Emotional intelligence: why it can matter more than IQ*. Soho Square, London: Bloomsbury Publishing
- Graen, G. B., & Uhl-Bien, M. (1995). Relationship-based approach to leadership: development of leader-member exchange (lmx) theory of leadership over 25 years: applying a multi-level-multi-domain perspective. *The Leadership Quarterly, 6*(2), 219-247.
- Guirdham, M. (2002). *Interactive behaviour at work*. 3rd edition. Harlow: Prentice Hall.
- Gust-Thomason, S., & Yantis, J. T. (1998). Assessment of team leadership effectiveness within self-managed teams. *Community College Journal of Research and Practice, 22*(2), 159-167.
- Hacker, J. V., Johnson, M., Saunders, C., & Thayer, A. L. (2019). Trust in virtual teams: a multidisciplinary review and integration. *Australasian Journal of Information Systems, 23*(1), 1-36.
- Hackman, J. R., Walton, R. E., & Goodman, P. S. (1986). Leading groups in organizations. In P. S. Goodman, *Designing effective work groups*. San Francisco, California: Jossey-Bass.
- Handy, C. (1995). Managing the Dream. In S. Chawla, & J. Renesch , *Learning organizations: developing cultures for tomorrow's workplace*. New York: Productivity Press.
- Hemphill, J. K., & Coons, A. E. (1957). Development of the leader behavior description questionnaire. In R. M. Stodgill , & A. E. Coons, *Leader Behavior: its description and measurement*. Columbus, Ohio: Bureau of Business Research.
- Hersey, P., & Blanchard, K. H. (2013). *Management of organizational behavior: leading human resources*. Boston: Pearson.
- Hill, C. L., & Updegraff, J. A. (2012). Mindfulness and its relationship to emotional regulation. *Emotion, 12*(1), 81-90.
- Hiltz, S. R., & Turoff, M. (1985). Structuring computer-mediated communication systems to avoid information overload. *Communications of the ACM, 28*(7), 680-689.

- Hofstede, G. (2001). *Culture's consequences: comparing values, behaviors, institutions, and organizations across nations*. Thousand Oaks, California: Sage Publications.
- Hofstee, W. K. (1994). Will the true trait theorist please stand up? *Psychological Inquiry*, 5(2), 134-137.
- Hogg, M. A. (2001). A social identity theory of leadership. *Personality and Social Psychology Review*, 5(3), 184-200.
- Holton, J. A. (2001). Building trust and collaboration in a virtual team. *Team Performance Management: An International Journal*, 7(3/4), 36-47.
- Hooijberg, R. (1996). A multidirectional approach toward leadership: an extension of the concept of behavioral complexity. *Human Relations*, 49(7), 917-946.
- Hooijberg, R., Hunt, J. G., & Dodge, G. E. (1997). Leadership complexity and development of the leaderplex model. *Journal of Management*, 23(3), 375-408.
- Horwitz, F. M., Bravington, D., & Silvis, U. (2006). The promise of virtual teams: identifying key factors in effectiveness and failure. *Journal of European Industrial Training*, 30(6), 472-494.
- House, R. J., & Mitchell, T. R. (1977). Path-goal theory of leadership. In J. W. Newstrom, *Human behavior at work: organizational behavior*. 5th edition. New York: McGraw-Hill.
- House, R. J., & Shamir, B. (1993). Toward the integration of transformational, charismatic, and visionary theories. In M. M. Chemers, & R. Ayman, *Leadership theory and research: perspectives and directions*. Washington: Academic Press.
- Howell, J. M., & Frost, P. J. (1989). A laboratory study of charismatic leadership. *Organizational Behavior and Human Decision Processes*, 43(2), 243-269.
- Humphrey, R. H. (2002). The many faces of emotional leadership. *The Leadership Quarterly*, 13(5), 493-504.
- Hunt, J. G. (1991). *Leadership: A new synthesis*. Newbury Park, California: Sage Publications.
- Hutcheon, E., & Lashewicz, B. (2014). Theorizing resilience: critiquing and unbounding a marginalizing concept. *Disability & Society*, 29(9), 1383-1397.
- Ilies, R., Morgeson, F. P., & Nahrgang, J. D. (2005). Authentic leadership and eudaemonic well-being: understanding leader-follower outcomes. *The Leadership Quarterly*, 16(3), 373-394.

- Jackowska, M., & Lauring, J. (2021). What are the effects of working away from the workplace compared to using technology while being at the workplace? assessing work context and personal context in a global virtual setting. *Journal of International Management*, 27(1).
- Jarvenpaa, S. L., & Leidner, D. E. (2006). communication and trust in global virtual teams. *Journal of Computer-Mediated Communication*, 3(4).
- Jimenez, A., Boehe, D. M., Taras, V., & Caprar, D. V. (2017). Working across boundaries: current and future perspectives on global virtual teams. *Journal of International Management*, 23(4), 341-349.
- Johnson, B., & Christensen, L. (2014). *educational research: quantitative, qualitative, and mixed approaches*. 5th edition. Thousand Oaks, California: Sage Publications.
- Johnson, K., & Hiltz, R. S. (1990). User satisfaction with computer-mediated communication systems. *Management Science*, 36(6), 739-764.
- Joinson, C. (2002). Workplace trends: managing virtual teams. *HR Magazine*, 47(6), 68-73.
- Jones, D., & Davis, S. (2020). Courageous leadership: walking your talk from wherever you are. *The Serials Librarian*, 78(1-4), 35-40.
- Judge, T. A., & Piccolo, R. F. (2004). Transformational and transactional leadership: a meta-analytic test of their relative validity. *Journal of Applied Psychology*, 89(5), 755-768.
- Judge, T. A., Bono, J. E., Ilies, R., & Gerhardt, M. W. (2002). Personality and leadership: a qualitative and quantitative review. *Applied Psychology Journal*, 87(4), 765-800.
- Kalsoom, Z., Khan, M. A., & Zuba, S. S. (2018). Impact of transactional leadership and transformational leadership on employee performance: A Case of FMCG Industry of Pakistan. *Industrial Engineering Letters*, 8(3).
- Kanter, R. (1985). Supporting innovation and venture development in established companies. *Journal of Business Venturing*, 1(1), 47-60.
- Katz, D., & Kahn, R. L. (1978). *The social psychology of organizations*. 2nd edition. New York: Wiley.
- Katzenbach, J. R., & Smith, D. K. (1993). The discipline of teams. *Harvard Business Review*.



- Kayworth, T. R., & Leidner, D. E. (2002). Leadership effectiveness in global virtual teams. *Journal of Management Information Systems*, 18(3), 7-41.
- Kesting, P., Ulhøi, J. P., Song, L. J., & Niu, H. (2016). The impact of leadership styles on innovation - a review. *Journal of Innovation Management*, 3(4), 22-41.
- Khan, Z. A., & Nawaz, A. (2016). Leadership theories and styles: a literature review. *Journal of Resources Development and Management*, 16.
- Khazanchi, S., & Masterson, S. S. (2011). Who and what is fair matters: a multi-foci social exchange model of creativity. *Journal of Organizational Behavior*, 32(1), 86-106.
- Kirckpatrick, S., & Locke, E. A. (1991). Leadership: do traits matter? *Academy of Management Executive*, 5(2), 48-60.
- Kirkman, B. L., Rosen, B., Gibson, C. B., Tesluk, P. E., & McPherson, S. O. (2002). Five challenges to virtual team success: lessons from sabre, inc. *Academy of Management Perspectives*, 16(3), 67-79.
- Kline, R. B. (2015). *Principles and practice of structural equation modeling*. New York: Guilford Press.
- Kotter, J. P. (1988). *The leadership factor*. New York: Free Press.
- Kouzes, J. M., & Posner, B. Z. (1995). *The leadership challenge: how to keep getting extraordinary things done in organizations*. San Francisco, California: Jossey-Bass.
- Ladkin, D., & Taylor, S. S. (2010). Enacting the 'true self': towards a theory of embodied authentic leadership. *The Leadership Quarterly*, 21(1), 64-74.
- Larson, J. R., & Callahan, C. (1990). Performance monitoring: how it affects work productivity. *Journal of Applied Psychology*, 75(5), 530-538.
- Lee-Kelley, L., & Sankey, T. (2008). Global virtual teams for value creation and project success: A case study. *International Journal of Project Management*, 26(1), 51-62.
- Lee, K., Allen, N. J., Meyer, J. P., & Rhee, K.-Y. (2001). The three-component model of organisational commitment: An Application to South Korea. *Applied Psychology*, 50(4), 596-614.
- Longmire, N. H., & Harrison, D. A. (2018). Seeing their side versus feeling their pain: differential consequences of perspective-taking and empathy at work. *Journal of Applied Psychology*, 103(8), 894-915.

- Lord, R., & Maher, K. J. (1991). *Leadership and information processing*. Boston: Unwin Hyman.
- Luthans, F., & Avolio, B. J. (2003). Authentic leadership development. In R. E. Quinn, J. E. Dutton, & K. S. Cameron, *Positive Organizational scholarship: foundations of a new discipline*. San Francisco, California: Berrett-Koehler.
- MacGregor, D. (1960). *The human side of enterprise*. New York: McGraw-Hill.
- Madanchian, M., Hussein, N., Noordin, F., & Taherdoost, H. (2017). Leadership effectiveness measurement and its effect on organization outcomes. *Procedia Engineering*, 181(1), 1043-1048..
- Malhotra, A., Majchrzak, A., & Rosen, B. (2007). Leading virtual teams. *Academy of Management Perspectives*, 21(1), 60-70.
- Malik, S. H. (2015). A study of relationship between leader behaviors and subordinate job expectancies: a path-goal approach. *Pakistan Journal of Commerce and Social Sciences*, 6(2), 357-371.
- Mann, R. D. (1959). A review of the relationships between personality and performance in small groups. *Psychological Bulletin*, 56(4), 241-270.
- Martins, L. L., Gilson, L. L., & Maynard, M. T. (2004). Virtual teams: what do we know and where do we go from here? *Journal of Management*, 30(6), 805–835.
- Mayer, J. D., Caruso, D. R., & Salovey, P. (1999). Emotional intelligence meets traditional standards for an intelligence. *Intelligence*, 27(4), 267-298.
- Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *The Academy of Management Review*, 20(3), 709-734.
- Meyers, L. S., Gamst, G., & Guarino, A. J. (2017). *Applied multivariate research: design and interpretation*. Los Angeles, California: SAGE Publications.
- Miles, R. E., & Snow, C. C. (1986). Organizations: new concepts for new forms. *California Management Review*, 28(3), 62-73.
- Mintzberg, H. (1973). *The nature of managerial work*. New York: Harper & Row.
- Moon, J. (2021). Effect of emotional intelligence and leadership styles on risk intelligent decision making and risk management. *Journal of Engineering, Project, and Production Management*, 11(1), 71-81.
- Morgan, L., Paucar-Caceres, A., & Wright, G. (2014). Leading effective global virtual teams: the consequences of methods of communication. *Systemic Practice and Action Research*, 27(6), 607-624.

- Morgeson, F. P., DeRue, D. S., & Karam, E. P. (2010). Leadership in teams: a functional approach to understanding leadership structures and processes. *Journal of Management*, 36(1), 5-39.
- Morris, J. (2004). The future of work: organizational and international perspectives. *The International Journal of Human Resource Management*, 15(2), 263-275.
- Morrison Smith, S., & Ruiz, J. (2020). Challenges and barriers in virtual teams: a literature review. *SN Applied Sciences*, doi: 10.1007/s42452-020-2801-5.
- Mowshowitz, A. (1997). Virtual Organization. *Communications of the ACM*, 40(9), 30-37.
- Nienaber, A.-M., & Romeike, P. D. (2015). Vulnerability and trust in leader-follower relationships. *Personnel Review*, 44(4), 567-591.
- Nohria, N., & Eccles, R. G. (1992). Face-to-face: making network organizations work. In R. G. Eccles, & N. Nohria, *Networks and organizations: structure, form, and action*. Boston: Harvard Business School Press.
- O'Hara-Devereaux, M., & Johansen, R. (1994). *Globalwork: bridging distance, culture, and time*. San Francisco, California: Jossey-Boss.
- Pescosolido, A. T. (2002). Emergent leaders as managers of group emotion. *The Leadership Quarterly*, 13(5), 583-599.
- Peters, T. J. (1992). *Liberation management: necessary disorganization for the nanosecond nineties*. London: MacMillan.
- Peus, C., Wesche, J. S., Streicher, B., Braun, S., & Frey, D. (2012). Authentic leadership: an empirical test of its antecedents, consequences, and mediating mechanisms. *Journal of Business Ethics*, 107(3), 331-348.
- Podsakoff, P. M., MacKenzie, S. B., Moorman, R. H., & Fetter, R. (1990). Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors. *The Leadership Quarterly*, 1(2), 107-142.
- Powell, A., Piccoli, G., & Ives, B. (2001). Virtual teams: a review of current literature and directions for future research. *The Data Base for Advances in Information Systems*, 35(1).
- Prentice, W. C. (2004). Understanding leadership. *Harvard Business Review*.
- Priest, R. F., & Swain, J. E. (2002). Humor and its implications for leadership effectiveness. *Humor - International Journal of Humor Research*, 15(2).

- Recardo, R. J., Wade, D., Mention, C. A., & Jolly, J. A. (1996). *Teams: who needs them and why?* Houston, Texas: Gulf Publishing.
- Rousseau, D. M., Sitkin, S. B., Burt, R. S., & Camerer, C. (1998). Not so different after all: a cross-discipline view of trust. *Academy of Management Review*, 23(3), 393-404.
- Salgado, J. F. (1997). The five-factor model of personality and job performance in the european community. *Journal of Applied Psychology*, 82(1), 30-43.
- Salovey, P., & Mayer, J. D. (1990). Emotional intelligence. *Imagination, Cognition and Personality*, 9(3), 185-211.
- Scandura, T. A., & Pellegrini, E. K. (2008). Trust and leader—member exchange: a closer look at relational vulnerability. *Journal of Leadership & Organizational Studies*, 15(2), 101-110.
- Schein, E. H. (1992). *Organizational culture and leadership*. San Francisco, California: Jossey-Bass.
- Schilke, O., Reimann, M., & Cook, K. S. (2021). Trust in social relations. *Annual Review of Sociology*, 47(10).
- Scott, C. P., & Wildman, J. L. (2015). Culture, communication, and conflict: a review of the global virtual team literature. In J. L. Wildman, & R. Griffith, *Leading global teams* (pp. 13-32). New York: Springer.
- Sekerka, L. E., Bagozzi, R. P., & Charnigo, R. (2009). Facing ethical challenges in the workplace: conceptualizing and measuring professional moral courage. *Journal of Business Ethics*, 89(4), 565-579.
- Siegel, J., Dubrovsky, V., Kiesler, S., & McGuire, T. W. (1986). Group processes in computer-mediated communication. *Organizational Behavior and Human Decision Processes*, 37(2), 157-187.
- Smith, P. B., Misumi, J., Teyeb, M., Peterson, M., & Michael, B. (1989). On the generality of leadership style measures across cultures. *Journal of Occupational Psychology*, 62(2), 97-109.
- Snow, C. C., Snell, S. A., Davison, S. C., & Hambrick, D. C. (1996). Use transnational teams to globalize your company. *Organizational Dynamics*, 24(4), 50-67.
- Stogdill, R. M. (1950). Leadership, membership and organization. *Psychological Bulletin*, 47(1), 1-14.

- Stratone, M. E., & Vatamanescu, E. M. (2019). The human capital dimension within the organizational equation. gliding between virtual and traditional teams. *Management Dynamics in the Knowledge Economy*, 7(4), 447-467.
- Sullivan, P., & Feltz, D. L. (2003). The preliminary development of the scale for effective communication in team sports (SECTS). *Journal of Applied Social Psychology*, 33(8), 1693-1715.
- Sutton, R. E. (2004). Emotional regulation goals and strategies of teachers. *Social Psychology of Education*, 7(4), 379-398.
- Townsend, M., DeMarie, S. M., & Hendrickson, R. A. (1993). Virtual teams: technology and the workplace of the future. *The Academy of Management Executive*, 12(3), 17-29.
- Van Knippenberg, D. (2011). Embodying who we are: leader group prototypicality and leadership effectiveness. *The Leadership Quarterly*, 22(6), 1078-1091.
- Vecchio, R. P., & Anderson, R. J. (2009). Agreement in self-other ratings of leader effectiveness: the role of demographics and personality. *International Journal of Selection and Assessment*, 17(2), 165-179.
- Vroom, V. H., & Yetton, P. W. (1973). *Leadership and decision-making*. London: Pittsburgh Press.
- Walumbwa, F. O., Avolio, B. J., Gardner, W. L., Wernsing, T. S., & Peterson, S. J. (2008). Authentic leadership: development and validation of a theory-based measure. *Journal of Management*, 34(1), 89-126.
- Warkentin, M. E., Sayeed, L., & Hightower, R. (1997). Virtual teams versus face-to-face teams: an exploratory study of a web-based conference system. *Decision Sciences*, 28(4), 975-996.
- Weiss, D. J., Davis, R. V., & England, G. W. (1967). Manual for the minnesota satisfaction questionnaire. *Minnesota Studies in Vocational Rehabilitation*, 22(120).
- Willard, C. A. (2020). *Statistical methods: an introduction to basic statistical concepts and analysis*. 2nd edition. London: Routledge.
- Winkler, I. (2010). *Contemporary leadership theories: enhancing the understanding of the complexity, subjectivity and dynamic of leadership*. New York: Physica-Verlag.
- Wisner, B., & Luce, H. R. (1993). Disaster vulnerability: scale, power and daily life. *GeoJournal*, 30(2), 127-140.

- Wong, C. A., & Laschinger, H. K. (2013). Authentic leadership, performance, and job satisfaction: the mediating role of empowerment. *Journal of Advanced Nursing*, 69(4), 947-959.
- Yammarino, Yammarino, F. J., & Bass, B. M. (1990). Transformational leadership and multiple levels of analysis. *Human Relations*, 43(10), 975-995.
- Yilmaz, K. (2013). Comparison of quantitative and qualitative research traditions: epistemological, theoretical, and methodological differences. *European Journal of Education*, 48(2), 311-325.
- Yukl, G. (1989). Managerial leadership: a review of theory and research. *Journal of Management*, 15(2), 251-289.
- Yukl, G. (2008). How leaders influence organizational effectiveness. *The Leadership Quarterly*, 19(6), 708-722.
- Zalesnik, A. (1977). Managers and leaders: are they different? *Harvard Business Review*.

## 8. Appendices

### 8.1. Supporting Literature Preliminary Conclusion

*Table 20: Supporting Literature on Preliminary Conclusion*

1	Brown, 2018; Walumbwa et al., 2008
2	Brown 2015, 2018
3	Katz & Kahn, 1978; Mann, 1959; Peus et al., 2012
4	Own contribution
5	Avolio, 2011; Breuer et al., 2020; Brown, 2015, 2018; Coyle, 2018; Deb and Chavali, 2010; Gardner et al., 2005; Holton, 2001; Khazanchi & Masterson, 2011; Ladkin and Taylor, 2010; Mayer et al., 1995; Nienaber & Romeike, 2015; Peus et al., 2012; Rousseau et al., 1998
6	Avolio et al., 2004b; Avolio, 2011; Bass, 1998; Podsakoff et al., 1990
7	Scandura & Pellegrini, 2008
8	Avolio et al., 2004a; Avolio & Gardner, 2005; Walumbwa et al., 2008
9	Boal & Hooijberg, 2000; George, 2000; Humphrey, 2002; Mayer et al., 1999
10	Avolio et al., 2004b; Judge & Piccolo, 2004
11	Judge & Piccolo, 2004
12	Burns, 2012; Judge & Piccolo, 2004
13	Dulebohn et al., 2012; Ilies et al., 2005
14	Dulebohn et al., 2012; Ilies et al., 2005
15	Burns, 2012; Dulebohn et al., 2012; Ilies et al., 2005
16	Peus et al., 2012
17	Peus et al., 2012
18	Burns, 2012; Peus et al., 2012
19	Coyle, 2018; Ilies et al., 2005; Peus et al., 2012
20	Avolio et al., 2001; Kalsoom et al., 2018
21	Cascio, 2000; Coyle, 2018
22	Judge et al., 2002; Salgado, 1997
23	Avolio, et al., 2004b; Brown, 2018; Holton, 2001; Kirkman et al., 2002; Recardo et al., 1996
24	Ilies et al., 2005; Ladkin & Taylor, 2010; Peus et al., 2012; Sekerka et al., 2009; Walumbwa et al., 2008
25	Brown, 2018; Sutton, 2004

## 8.2. Correlation Table Overview

Table 21: Questionnaire Score Correlation and Significance Summary

	n	M*	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25					
<b>1</b>	60	3.99	.54																					<b>1</b>	<b>Demonstrated Vulnerability (AgLV)</b>								
<b>2</b>	60	3.17	.92	.74*																				<b>2</b>	Emotional Exposure								
<b>3</b>	60	4.27	.76	.77*	.30**																			<b>3</b>	Empathy								
<b>4</b>	60	4.55	.59	.60*	.11	.38*																		<b>4</b>	Integrity								
<b>5</b>	60	3.97	.65	.29**	.19	.26**	.18																	<b>5</b>	<b>Trust (AgLV)</b>								
<b>6</b>	60	3.85	.78	.2	.13	.21	.07	.69*																<b>6</b>	Perceived Trustworthiness								
<b>7</b>	60	4.1	.9	.34*	.29**	.16	.28**	.79*	.34*															<b>7</b>	Cooperative Behavior								
<b>8</b>	60	3.95	.91	.13	.01	.22	.05	.77*	.28**	.40*														<b>8</b>	Propensity to Trust								
<b>9</b>	60	4.01	.71	.25	.16	.19	.19	.55*	.32**	.40*	.50*													<b>9</b>	<b>Quality of Communication (AgLV)</b>								
<b>10</b>	60	4.18	.85	.16	.15	.08	.1	.66*	.40*	.46*	.60*	.70*												<b>10</b>	Perceived Communication								
<b>11</b>	60	3.68	.98	.23	.1	.28**	.13	.28**	.09	.11	.40*	.79*	.31**											<b>11</b>	Conflict Resolution								
<b>12</b>	60	4.17	.94	.18	.12	.08	.2	.35*	.27**	.36*	.17	.80*	.36*	.46*										<b>12</b>	Appropriate Communication								
<b>13</b>	60	4.35	.59	.26**	.13	.12	.38*	.40*	.41*	.31**	.19	.46*	.47*	.18	.42*									<b>13</b>	<b>Job Satisfaction (AgLV)</b>								
<b>14</b>	60	4.38	.69	.35*	.32**	.09	.34*	.26**	.30**	.35*	-.05	.27**	.22	.03	.37*	.70*								<b>14</b>	Sense of Purpose								
<b>15</b>	60	4.25	.86	.16	.05	.05	.29**	.37*	.26**	.32**	.26**	.52*	.45*	.28**	.47*	.82*	.49*							<b>15</b>	Sense of Achievement								
<b>16</b>	60	4.42	.85	.1	-.05	.11	.21	.24	.35*	.03	.18	.22	.34*	.08	.10	.68*	.16	.30**						<b>16</b>	Morale								
<b>17</b>	60	3.7	.86	.36*	.33**	.25	.17	.27**	.41*	.18	.05	.41*	.33**	.17	.45*	.68*	.52*	.56*	.44*					<b>17</b>	<b>Organizational Commitment (AgLV)</b>								
<b>18</b>	60	3.83	.94	.42*	.31**	.35*	.23	.23	.29**	.16	.09	.38*	.31**	.22	.36*	.63*	.39*	.43*	.55*	.90*				<b>18</b>	Personal Meaning								
<b>19</b>	60	3.43	1.06	.27**	.29**	.19	.05	.2	.37*	.17	-.05	.37*	.27**	.13	.47*	.56*	.51*	.49*	.27**	.92*	.77*			<b>19</b>	Emotional Attachment								
<b>20</b>	60	3.83	.89	.29**	.28**	.12	.21	.30**	.46*	.15	.09	.33**	.31**	.09	.36*	.65*	.49*	.57*	.39*	.85*	.64*	.67*		<b>20</b>	Loyalty								
<b>21</b>	60	3.79	.64	.44*	.26**	.38*	.32**	.34*	.29**	.38*	.11	.32**	.33**	.30**	.11	.32**	.21	.31**	.17	.22	.19	.19	.21	<b>21</b>	<b>Team Performance (AgLV)</b>								
<b>22</b>	60	3.6	1.01	.32**	.25	.14	.32**	.32**	.33*	.38*	.01	.23	.38*	.09	.07	.46*	.37*	.41*	.24	.24	.16	.23	.26**	.81*	<b>22</b>	Team Efficiency							
<b>23</b>	60	3.83	.85	.34*	.14	.41*	.19	.13	.12	.09	.1	.13	.02	.30**	-.05	.01	-.06	-.01	.07	.05	.09	-.01	.08	.78*	.38*	<b>23</b>	Team Reliability						
<b>24</b>	60	3.93	.63	.38*	.19	.39*	.23	.35*	.19	.43*	.17	.44*	.37*	.37*	.27**	.23	.14	.31**	.05	.22	.21	.24	.13	.71*	.35*	.45*	<b>24</b>	Goal Achievement					
<b>25</b>	43	4.05	.56	.36**	.42*	.29	-.04	.38**	.37**	.31**	.16	.37**	.38**	.14	.35**	.57*	.26	.48*	.45*	.62*	.58*	.49*	.54*	.24	.18	.14	.22	<b>25</b>	<b>PLE (AgLV)</b>				
<b>26</b>	60	3.96	.52	.44*	.26**	.38*	.32**	.34*	.29**	.38*	0.11	.32**	.33**	.30**	.11	.32**	.21	.31**	.17	.22	.19	.19	.21	1.00*	.81*	.78*	.71*	.24	<b>26</b>	<b>OLE (AgLV)</b>			

\* Correlation is significant at the .01 level (2-tailed). // \*\* Correlation is significant at the .05 level (2-tailed).

Source: RStudio / Survey



### 8.3. Percentage Responses of Individual LEVs

Table 22: Descriptive Analysis; Quality of Communication

Variable	#	Response	%
<b>Perceived Communication</b>  I perceive the overall communication within our team as transparent and I also believe that I communicate transparently.	1	Strongly disagree	.0
	2	Disagree	3.3
	3	Undecided	16.7
	4	Agree	33.3
	5	Strongly agree	43.3
<b>Conflict Resolution</b>  When disagreements arise in our team, members try to communicate directly with those they have the problems with.	1	Strongly disagree	.0
	2	Disagree	15.0
	3	Undecided	23.3
	4	Agree	38.3
	5	Strongly agree	21.7
<b>Appropriate Communication</b>  I believe that all team members use an appropriate tone of voice.	1	Strongly disagree	.0
	2	Disagree	8.3
	3	Undecided	11.7
	4	Agree	35.0
	5	Strongly agree	43.3

Source: RStudio / Survey

Table 23: Descriptive Analysis; Job Satisfaction

Variable	#	Response	%
<b>Sense of Purpose</b>  In our team I get the chance to do something that makes use of my abilities.	1	Strongly disagree	.0
	2	Disagree	3.3
	3	Undecided	10.7
	4	Agree	46.7
	5	Strongly agree	45.0
<b>Sense of Achievement</b>  I like the feeling of accomplishment I get from the job.	1	Strongly disagree	.0
	2	Disagree	3.3
	3	Undecided	16.7
	4	Agree	28.3
	5	Strongly agree	48.3
<b>Morale</b>  I am able to do things that do not go against my conscience.	1	Strongly disagree	.0
	2	Disagree	3.3
	3	Undecided	13.3
	4	Agree	21.7
	5	Strongly agree	56.7

Source: RStudio / Survey

Table 24: Descriptive Analysis; Organizational Commitment

Variable	#	Response	%
<b>Personal Meaning</b>  Our organization has a great deal of personal meaning for me.	1	Strongly disagree	.0
	2	Disagree	8.3
	3	Undecided	28.3
	4	Agree	31.7
	5	Strongly agree	28.3
<b>Emotional Attachment</b>  It would be very hard for me to leave our organization right now, even if I wanted to.	1	Strongly disagree	5.0
	2	Disagree	13.3
	3	Undecided	28.3
	4	Agree	36.7
	5	Strongly agree	15.0
<b>Loyalty</b>  Our organization deserves my loyalty	1	Strongly disagree	.0
	2	Disagree	5.0
	3	Undecided	33.3
	4	Agree	33.3
	5	Strongly agree	25.0

Source: RStudio / Survey

Table 25: Descriptive Analysis; Team Performance

Variable	#	Response	%
<b>Team Efficiency</b>  Our team meetings are usually conducted very efficiently.	1	Never	1.7
	2	Rarely	11.7
	3	Sometimes	33.3
	4	Often	31.7
	5	Always	21.7
<b>Team Reliability</b>  Our team always meet our deadlines.	1	Never	.0
	2	Rarely	5.0
	3	Sometimes	30.0
	4	Often	40.0
	5	Always	23.3
<b>Goal Achievement</b>  Our team always fulfils its objectives.	1	Never	.0
	2	Rarely	.0
	3	Sometimes	21.7
	4	Often	60.0
	5	Always	16.7

Source: RStudio / Survey

## 8.4. Percentage Responses of PLE by Subordinates

Table 26: Descriptive Analysis; PLE of Subordinates

Variable	#	Response	%
Are you able to work for the leader with a high degree of efficiency?	1	Never	.0
	2	Rarely	.0
	3	Sometimes	23.3
	4	Often	44.2
	5	Always	23.3
Do you like to work for the leader?	1	Never	.0
	2	Rarely	7.0
	3	Sometimes	16.3
	4	Often	46.5
	5	Always	23.3
Do you get along with the leader?	1	Never	.0
	2	Rarely	.0
	3	Sometimes	18.6
	4	Often	37.2
	5	Always	37.2
Do you appreciate the leader?	1	Never	.0
	2	Rarely	2.3
	3	Sometimes	14.0
	4	Often	41.9
	5	Always	34.9
Do you see your work style consistent with the leader?	1	Never	.0
	2	Rarely	4.7
	3	Sometimes	20.9
	4	Often	46.5
	5	Always	18.6
Do you share the leader's values and ideas?	1	Never	.0
	2	Rarely	4.7
	3	Sometimes	20.9
	4	Often	46.5
	5	Always	18.6

Source: RStudio / Survey

## 8.5. Survey Questions

### Demographic Questions

What gender do you identify as?	<input type="checkbox"/>	Male
	<input type="checkbox"/>	Female
	<input type="checkbox"/>	Prefer not to answer
What is your age?	<input type="checkbox"/>	20 year or younger
	<input type="checkbox"/>	21-30 years
	<input type="checkbox"/>	31-40 years
	<input type="checkbox"/>	41-50 years
	<input type="checkbox"/>	51-60 years
	<input type="checkbox"/>	60 years or older
Please specify your ethnicity	<input type="checkbox"/>	White
	<input type="checkbox"/>	Hispanic, Latino or Spanish origin
	<input type="checkbox"/>	Black or African American
	<input type="checkbox"/>	Asian
	<input type="checkbox"/>	American Indian or Alaska Native
	<input type="checkbox"/>	Middle Eastern or North African
	<input type="checkbox"/>	Native Hawaiian or Other Pacific Islander
	<input type="checkbox"/>	Some other race, ethnicity or origin
Where do you live currently?	<input type="checkbox"/>	Switzerland
	<input type="checkbox"/>	Europe (Other than Switzerland)
	<input type="checkbox"/>	Africa
	<input type="checkbox"/>	Asia
	<input type="checkbox"/>	Australia-Oceania
	<input type="checkbox"/>	North America
	<input type="checkbox"/>	South America

**Filter Questions**

Do you currently work in a global / international virtual team?	<input type="checkbox"/>	Yes
	<input type="checkbox"/>	No
Within this global virtual team, which role are you in?	<input type="checkbox"/>	Formal line manager / Team leader
	<input type="checkbox"/>	Team member / Subordinate

**Vulnerability**

	(1= Strongly disagree) to (5 = Strongly agree)				
I am willing to let my guard down with others, even in situations where I feel like I should protect myself and only show strength.	1	2	3	4	5
I practice nonjudgment by not judging others when they are asking for what they need or asking for help.	1	2	3	4	5
I stay aligned with my values when facing tough decisions.	1	2	3	4	5

**Trust**

	(1= Strongly disagree) to (5 = Strongly agree)				
We have complete confidence in each other's ability to perform tasks.	1	2	3	4	5
In our team we discuss and deal with issues or problems openly.	1	2	3	4	5
People in our team usually tell the truth, even when they know they will be better off by lying.	1	2	3	4	5

**Quality of Communication**

	(1= Strongly disagree) to (5 = Strongly agree)				
I perceive the overall communication within our team as transparent and I also believe that I communicate transparently.	1	2	3	4	5
When disagreements arise in our team, members try to communicate directly with those they have the problems with.	1	2	3	4	5
I believe that all team members use an appropriate tone of voice.	1	2	3	4	5

**Job Satisfaction**

	(1= Strongly disagree) to (5 = Strongly agree)				
In our team I get the chance to do something that makes use of my abilities.	1	2	3	4	5
I like the feeling of accomplishment I get from the job.	1	2	3	4	5
I am able to do things that do not go against my conscience.	1	2	3	4	5

**Organizational Commitment**

	(1= Strongly disagree) to (5 = Strongly agree)				
Our organization has a great deal of personal meaning for me.	1	2	3	4	5
It would be very hard for me to leave our organization right now, even if I wanted to.	1	2	3	4	5
Our organization deserves my loyalty	1	2	3	4	5

**Team Performance**

	(1 = never) to (5 = always)				
Our team meetings are usually conducted very efficiently.	1	2	3	4	5
Our team always meets our deadlines.	1	2	3	4	5
Our team always fulfills its objectives.	1	2	3	4	5

**Perceived Leadership Effectiveness (PLE)**

	(1= never) to (5 = always)				
Are you able to work for the leader with a high degree of efficiency?	1	2	3	4	5
Do you like to work for the leader?	1	2	3	4	5
Do you get along with the leader?	1	2	3	4	5
Do you appreciate the leader?	1	2	3	4	5
Do you see your work style consistent with the leader?	1	2	3	4	5
Do you share the leader's values and ideas?	1	2	3	4	5

**Open Question:** *“Do you believe that demonstrating vulnerability can have an impact on the team dynamics and the effectivity of its leader? If so, why?”*

---

## 8.6. Transcript of Answers

**Question:** “Do you believe that demonstrating vulnerability can have an impact on the team dynamics and the effectivity of its leader? If so, why?”

### **Negative Answers:**

- Most likely negative because some people can take advantage of the situation.
- Negative. A manager should inspire his staff, not show personal weakness in front of them unless accompanied by humorous self-depreciation.
- Negative, nobody will trust you.

### **Neutral Answers:**

- It can be positive or negative. It has to be kept under control. Being over-emotional is not a good thing.
- In Leadership, you have to balance vulnerability with being the leader. Complete vulnerability is what you are doing with friends but when you are in a leadership role, you cannot let your guard down and be completely vulnerable. Being too vulnerable can have severe consequences when it comes to leading and cross the line between leaders and subordinates. This might open up to lawsuits or harassment complaints when the subordinate decides that they no longer want to be your friend at work but it is too late because you have to open yourself up and share things you should not have. Therefore, I believe it depends on the company and team you are on if vulnerability is a good or bad thing. My advice would be to be vulnerable on certain topics but not open yourself up too much because it might backfire.
- Open dialogue is the key for better alignment and greater performance, in my opinion. That said, vulnerability is presented and expressed and shared; it is neither negative nor positive but reflects the situation/state.
- It depends on the co-workers, as long as they do not prey on your perceived inadequacies. Showing vulnerability should definitely improve team dynamics in most cases, however.
- I would say that it really depends on the leader you are working with. Some people think that showing vulnerability is a way of demonstrating debility, so in that case, it would not be a recommendation. Nevertheless, in order to work dynamically and efficiently, honesty is the best solution and if you have to show vulnerability in order to be honest, why not do it? It is part of ourselves.



**Positive Answers:**

- A positive impact: it goes both ways. If you bring yourself to work fully, you are authentic and that creates trust. If your team trusts you and believes in your potential, you become more confident and open up more.
- Positive, because it implies, “I am a person and not only an employee and part of the team.”
- Yes, it does because it creates trust and enables other members to talk openly as well.
- Very positive impact because it shows other team members that it is ok to be vulnerable sometimes - and in my opinion, it helps the open communication within the team a lot.
- Vulnerabilities can identify weaknesses that can either be improved or deliberately worked around to become stronger in the team. This strengthens the team as well as the value-added to the product.
- It can positively impact the team as it shows a certain degree of honesty towards the colleagues, which is essential to gain trust from your teammates.
- Yes, emotions are a form of communication that provides personal context for others, i.e., facilitates the interpretation of the communicated.
- It has a positive impact, enables trust and influences other people to be more open.
- Positive. Because it shows your human side and makes it easier to connect to each other.
- Yes, as it can show others that everyone struggles sometimes and there is no perfect co-worker or leader.
- Positive because then you get to talk about it make a change that reinforces the team dynamics.
- Yes, I feel better working for people who show their true self instead of masked robot people.
- In my opinion, vulnerability could bring co-workers closer together, so I would say mostly a positive effect.
- Yes, I think it has a positive impact – being vulnerable is human. It is nearly impossible to show strength at all times.
- Yes, a positive impact, it makes us more human

- Showing vulnerability can have a positive impact on team dynamics. I experienced that team leaders did not understand something but did not want to admit it. They, therefore, simply delegated the task further. One of my colleagues at the same level reported back to his supervisor that he did not understand the task. Then suddenly, everyone admitted that they did not understand the task. Everyone laughed about it and solved the problem together. I think they all then realized that it is better just to show your vulnerability than to pretend.
- Yes, it makes you feel more accessible and trustworthy
- Positive because people tend to express their opinions on certain topics, making the business environment much more productive.
- Positive. It brings members closer
- Yes. The human part is essential to bring to work as well.
- I believe that vulnerability is an integral part of the human experience. When working with other people and especially when leading a team, it is important to treat each other not only as fellow employees or colleagues but also to keep our humanity and the baggage it comes with (in a constructive way). Vulnerability is an important part of that and I believe that it can positively impact the team and its performance.
- I am sure it can positively impact the team because it shows that you are honest, transparent and aware of your skills. Therefore, your team can support you and you can still reach your goals/deadlines.
- Yes, as it provides an environment that allows one to feel appreciated and not be afraid of mistakes.
- I believe that demonstrating vulnerability allows for other team members to fill in the gaps within my organization. If one person has had a tough day or not feeling well, then other team members assist. This is vital to teamwork and getting the job at hand done more efficiently.
- I believe that demonstrating vulnerability has a positive impact on a team because the relationships built within that team will be open, honest and authentic. It earns respect and trust of employees. It also takes strength to allow yourself to be vulnerable, which I believe is a very important quality in a leader.

## 8.7. Declaration of Authorship

I hereby declare that this thesis is my own work, that it has been generated by me without the help of others and that all sources are clearly referenced. I further declare that I will not supply any copies of this thesis to any third parties without written permission by the director of this degree program.

I understand that the Zurich University of Applied Sciences (ZHAW) reserves the right to use plagiarism detection software to make sure that the content of this thesis is completely original. I hereby agree for this thesis, naming me as its author, to be sent abroad for this purpose, where it will be kept in a database to which this university has sole access. I also understand that I will be entitled at any time to ask for my name and any other personal data to be deleted.

Furthermore, I understand that pursuant to § 16 (1) in connection with § 22 (2) of the federal law on universities of applied sciences (FaHG) all rights to this thesis are assigned to the ZHAW, except for the right to be identified as its author.

Students Name:

Ramona Tran

Saint Gallen, 08.06.2021

*Place, Date*

