

Accelerated success through leadership: A narrative study of female aviation executives' stories
of leadership development

by

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B.S., Kansas State University, 2007

B.S., Kansas State University, 2007

M.S., Kansas State University, 2015

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

Leadership Communication

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Abstract

Women have a long history of involvement in aviation, yet they remain significantly underrepresented in the industry, particularly in senior leadership roles. Moreover, the limited number of women in the aviation pipeline, as seen in the low percentages of female FAA certificate holders, suggests that immediate progress in senior leadership numbers is unlikely. This study explores the experiences and perspectives of female aviation executives, aiming to shed light on their leadership development journeys. It considers factors contributing to their career advancement, the practices shaping the aviation industry's leadership landscape, and recommendations for effective leadership programs.

Using an arts-based narrative approach, semi-structured interviews, and photovoice, this research uncovers ten key themes that emerged from the narratives of these executives. The findings emphasize the dynamic nature of leadership development, encompassing personal actions, industry practices, and structured training opportunities. Female aviation executives actively pursue self-improvement, embrace challenges, and engage in daily leadership interactions. Formal training initiatives play a pivotal role in enhancing these ongoing development efforts. This study presents a flight journey narrative structure, mirroring the executives' experiences in three legs, each representing a distinct aspect of leadership development. The model of aviation leadership development derived from the findings provides a comprehensive view of the practices at each leg of the journey.

Addressing the gender gap in aviation leadership is not only a matter of equity but also has far-reaching implications for industry performance and meeting workforce needs. This research offers valuable insights for aviation companies, educational institutions, trade organizations, and government agencies seeking to support women's advancement in aviation

and harness the industry's untapped potential. By fostering an inclusive culture and implementing intentional leadership programs, the aviation industry can fully engage the talent and perspectives that women bring, benefiting both individuals and the entire industry.

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Approved by:

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Dedication

To the little joys of my life – Lillian, Katelyn, and William, may you be forever dreamers, imagining beyond impossible and inspiring those around you to do the same. I love you!

And to my moon – Kenton, always there and lighting the way in the darkness. I am forever grateful to be your partner in life. Cheers to more front porch sitting, ping-pong battles, and years of exploring this world together. Love really is all you need!

Chapter 1 - Introduction

The Need for Women in Leadership

Women's involvement in aviation spans history; however, they remain significantly underrepresented across the aviation field and in senior aviation leadership positions. According to a FlightGlobal survey, only seven of the top 100 airline group CEOs are women, and COOs are just as rare (Harper, 2022). Aerospace and defense numbers are slightly higher where female CEOs represent 19% of the total CEOs in the industry (Korn Ferry, 2020). Unfortunately, there is little accessible data regarding the number of women CEOs and C-suite members in the aviation industry, including commercial airlines, business aviation, and other industry organizations. However, women's representation in these roles is similar across other industries; for example, a 2021 report from LeanIn.org and McKinsey & Company reported that only 21% of C-suite leaders at U.S. companies are women.

The limited number of women in the aviation pipeline suggests that the industry will not see a large increase in senior leadership numbers in the immediate future. One representation of the workforce pipeline is the number of women who currently hold Federal Aviation Administration (FAA) active pilot certificates (7%) and aviation mechanic certificates (2.6%) (FAA, 2021). Over the last 60 years, the number of women certificate holders has remained relatively flat, only increasing by 4.5% for private pilots and 2.5% for mechanics (Lutte, 2021). That equates to a rate of approximately 0.08% per year for private pilots and 0.04% per year for mechanics over the last six decades. At this minimal steady rate, it will take over 537 years for women pilots and 1,075 years for women mechanics to reach 50% of the respective aviation population. Also, women are continually underrepresented in other aviation positions, including

air traffic controllers (26%), flight dispatchers (18%), and aerospace engineers (less than 9%) (Korn Ferry, 2020, p.7).

To increase the number of women in the aviation career pipeline, there is a need to focus on developing and advancing women as *aviation leaders*. In this study, an aviation leader is defined as a person holding an aviation management role, whose actions positively influence and inspire the thoughts and behaviors of others. Currently, women in the workforce pipeline are not promoted at the same rates as their male counterparts. Krivkovich et al.'s (2022) report on Women in the Workplace identified that the biggest obstacle in women's pathways to senior leadership positions happens at the first step of promotion to manager. The study reported "for every 100 men promoted from entry level to manager, only 87 women are promoted" (Krivkovich et al., 2022, p. 9). The 2021 Lift Off to Leadership study shared similar findings, describing how "a third of the women report taking longer to reach leadership positions relative to their peer group. By comparison, 92 percent of the men surveyed advance more quickly or at the same pace as their peer group" (Wyman & IAWA, 2021, p. 13).

Why it Matters

Closing the equity gap not only impacts women individually; the whole industry benefits from women leaders, as evidenced by team and organizational performance data. "Companies in the top-quartile for gender diversity on their executive teams were 21% more likely to outperform on profitability and 27% more likely to have superior value creation" (Hunt et al., 2018, p. 1). Also, Post et al. (2021) reported in *Harvard Business Review* that companies with more women in the C-suite are more profitable and socially responsible, and they provide safer and higher-quality customer experiences. Women not only brought new perspectives but also

shifted how the C-suite thought about innovation, which enabled a broader approach and variety of strategies for creating value (Post et al., 2021).

Increasing the pipeline of women leaders also helps to meet workforce needs. The aviation industry faces a workforce shortage of both women and men pilots, mechanics, and engineers. Lang (2020) reports, “industry forecasts show that we will need over 212,000 new civilian pilots and 193,000 new maintenance technicians over the next 20 years in North America alone” (p.2). Furthermore, with rapidly growing new sectors in aviation such as electric vertical lift and takeoff (eVTOL) and advanced air mobility (AAM), the need for additional aviation talent is critical. According to the United States Bureau of Labor Statistics (2022), women comprise just under 50 percent of the overall U.S. labor force. In light of the aviation statistics noted earlier, it is clear that women represent a significant untapped resource that could alter the dynamics of the aviation industry workforce. If aviation companies, educational institutions, trade organizations, and government agencies can work together to increase the representation of women in aviation, they can assist in meeting airlines’ demand and increase the talent pool for the entire aviation industry. Thus, it is imperative for the aviation industry to develop strategies to recruit, retain, and advance women in aviation.

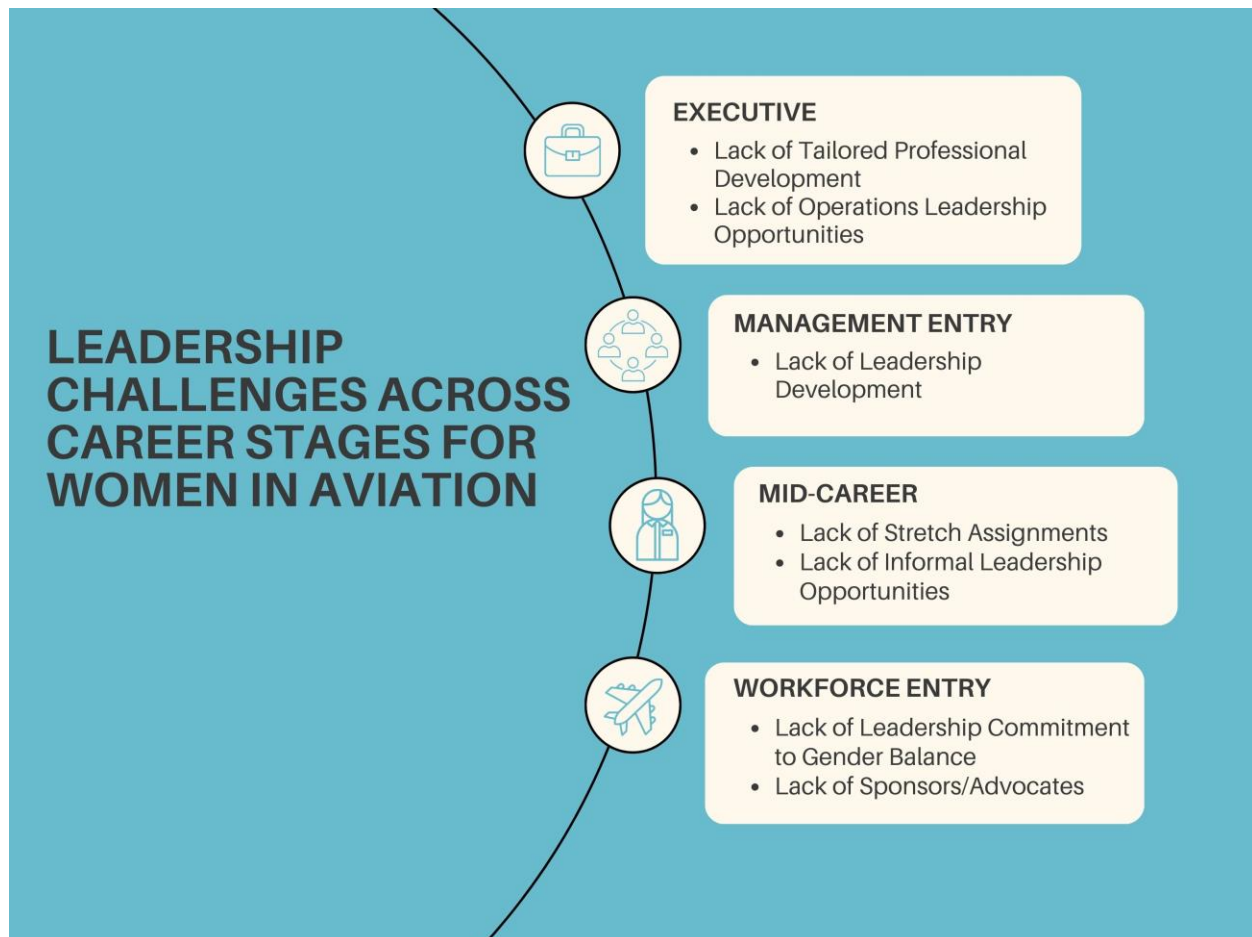
Background to the Problem

Lack of Leadership Development

As previously noted, women are not promoted at the same rate as men to leadership positions (Krivkovich et al., 2022; Wyman, 2021). While many potential factors contribute to this reoccurring issue, it seems important to look more closely at women’s experiences of leadership development. Figure 1.1 reflects findings from the Women in Aviation Advisory Board Report, *Breaking Barriers for Women in Aviation: Flight Plan for the Future* (2022). The

figure illuminates how the lack of leadership opportunities, lack of leadership development, and lack of tailored professional development are compounding barriers identified from mid-career to management entry to executive positions.

Figure 1.1. Leadership Challenges Across Career Stages for Women in Aviation



Note. Adapted from Women in Aviation Advisory Board (2022) Barriers Timeline Model

More specifically, women’s mid-career barriers include a lack of informal leadership opportunities and stretch assignments. Informal leadership opportunities in this report refer to engagement in leadership opportunities outside of one’s required or formal position or title. Stretch assignments can be described as a project or task that is beyond one’s current level of knowledge or skill, which creates a developmental *stretch* from which to learn and grow (WIAAB, 2022). During management entry, women experience a lack of leadership

development (WIAAB, 2022), and these challenges continue at each stage of a woman's career advancement. Leadership development is interlinked with professional development, including activities like ongoing technical training, mentoring, networking, conference attendance, and continuing education (WIAAB, 2022). Advancing to the executive level has been hindered by the absence of customized professional growth opportunities, including professional development programs to specifically address differences women may face, such as navigating a male-dominated culture, overcoming gender biases, learning to speak up and be heard, seeking allies, advancing into leadership positions, finding support networks, taking risks, building confidence, and improving visibility and exposure (WIAAB, 2022). Additionally, there is a lack of operations leadership opportunities for women, including leadership roles in operations that lead to promotion and leadership advancement (WIAAB, 2022). The challenges identified at each career stage could be addressed with intentional leadership development processes and/or programs focused on creating leadership opportunities and conditions for leadership development for women.

The Impact of Cultural Factors

There are many internal and external cultural factors impacting the underrepresentation of women in aviation and their progression to senior leadership positions. Internal factors often seem invisible, or implicit, and include attitudes, beliefs, and values. External factors are more explicit and can be observed through organizational structures, policies, and actions. These internal and external factors, however unintentional they may be, are impacting women throughout their careers and limiting the future of aviation (WIAAB, 2022). These cultural factors shape the experiences and opportunities available to women in the field.

Internally, the culture within the aviation industry harbors subtle, yet profound, attitudes, beliefs, and values that contribute to gender imbalance. These elements are often hidden from plain view but wield significant influence. Attitudes within the industry may perpetuate traditional gender roles or biases, affecting how women are perceived and treated. Beliefs about the capabilities and suitability of women in aviation can also hinder their advancement, as can deeply ingrained values that prioritize certain traits or behaviors, often associated with masculinity, over others. Current aviation culture impacts women at all stages in their aviation journey from recruitment to retention and advancement. Women are actively seeking companies committed to creating an inclusive culture. Krivkovich et al.'s (2022) *Women in the Workplace* report explained that “women leaders are significantly more likely than men leaders to leave their jobs because they want more flexibility or because they want to work for a company that is more committed to employee well-being and diversity, equity, and inclusion” (p.15).

Externally, the culture of aviation is also manifest in more observable and tangible ways. Organizational structures within aviation companies, including hierarchies and reporting lines, can either facilitate or impede women's progress. Policies related to hiring, promotions, and diversity initiatives play a pivotal role in addressing or perpetuating gender disparities. Actions taken by organizations, such as mentorship programs (WIAAB, 2022) or the enforcement of gender-neutral recruitment practices, can significantly impact women's career trajectories in aviation. Moreover, rituals and ceremonies within the industry, such as award ceremonies or recognition events, may inadvertently reinforce gender stereotypes or exclusionary practices. Symbols and imagery associated with aviation can send powerful messages about who belongs in the industry and who does not. Even dress codes and language used in aviation can reflect and perpetuate the existing culture, making it either more inclusive or exclusive (WIAAB, 2022).

The Lift Off to Leadership report (2021) echoes these findings and emphasizes how the prevailing culture within the aviation industry fails to create an environment where women can thrive. Relative to their male counterparts, women in aviation often report more negative experiences, encounter slower career advancement, and face fewer opportunities to assume senior roles that directly contribute to an organization's success (Wyman & IAWA, 2021, p.5). A look at broader success across industries, a few professions where female representation has risen the fastest in the last 20 years include physical scientists (17% increase), pharmacists (15% increase), and physicians and surgeons (14% increase) (Cheng & Kopf, 2019). While it is difficult to identify a direct link to the increase, Cheng & Kopf (2019) attribute a relation to these occupations offering flexibility in schedules and being family friendly.

In summary, the underrepresentation of women in aviation and their struggle to attain senior leadership positions is deeply rooted in the industry's culture. This culture encompasses internal aspects, such as attitudes, beliefs, and values, as well as external aspects, including organizational structures, policies, rituals, ceremonies, symbols, dress codes, and language. Addressing these cultural factors is essential for achieving gender equality and unlocking the full potential of women in aviation. To build an aviation system for women, I looked to the success stories of women executives with years of experience leading their sector of the industry. This study focused on women currently employed in aviation professions and sought to understand their experiences, as well as share best practices of leadership and professional development programs. There is little research on aviation women leaders and their leadership development experiences throughout their careers. Data is needed to develop leadership programs and industry activities designed to encourage female interest and persistence in aviation fields, as well as to

equip the aviation industry and organizations with the practices needed to support women as they seek advancement in their careers.

Definition of Terms

To provide consistency of interpretation and greater understanding, this section presents definitions of industry terms and key concepts used in the study.

Aeronautical Decision Making

A pilot's mental process to determine the best course of action based on a set of circumstances (Federal Aviation Administration, 2003). Pilots can improve their decision-making in areas such as personal responsibility, communication, workload management, resource use, and situational awareness (Jeppesen Sanderson, Inc., 2002).

Aviation Community

The aviation community includes all people involved in the aviation industry including both public and private sectors. This includes everyone from employees at aviation businesses to aviation trade organizations to aviation volunteers and enthusiasts.

Aviation Industry

The aviation industry includes the activities involved in manufacturing and operating aircraft including sectors of general aviation, commercial aviation, military aviation, and uncrewed aircraft systems (UAS).

Aviation Leader

For this report, an aviation leader is defined as a person holding an aviation management role, whose actions positively influence and inspire the thoughts and behaviors of others.

Center of Gravity

An airplane's center of gravity (CG) is where the entire weight of the aircraft is the most concentrated (Jeppesen Sanderson, Inc., 2002). As the airplane moves along its axes, it is referenced from the CG point. In essence, all movement references around the CG.

Crew Resource Management

Effective use of all available resources including human resources, hardware, and information (Jeppesen Sanderson, Inc., 2002). Human resources include people working in aviation such as flight crew, dispatchers, air traffic control, maintenance personnel, and anyone else who could assist in specific aviation situations. CRM enables the team to manage risks and make timely decisions.

Flight Following

Flight following is an optional service that a pilot can seek from a radar advisory service with a person on the other end of the radio to talk with for guidance along their flight route. The primary purpose of flight following is to alert you to possible conflicting traffic (Jeppesen Sanderson, Inc., 2002). If their workload allows, they also provide other important information such as weather updates in the area or other obstacles along a pilot's route. Air Traffic Control (ATC) radar facilities can also provide navigational guidance (such as telling a pilot which direction to turn) in an advisory nature to support the pilot's decision on completing a safe flight to their destination (Jeppesen Sanderson, Inc., 2002).

Headwind Component

Airplane takeoff distances are impacted by the speed and direction of surface winds. The headwind component is the portion of the wind coming directly at the airplane. While headwinds can be seen in a negative light, when an airplane is taking off a strong headwind is beneficial as

it will reduce the speed required and the length of runway needed to start flying (Jeppesen Sanderson, Inc., 2002).

Informal leadership opportunities

In this report, informal leadership opportunities refer to engagement in leadership opportunities outside of one's required or formal position or title.

Leadership

There are many definitions of leadership. This study draws from Komives et al.'s (2013) definition of leadership as a relational and ethical process where people collaborate to achieve positive change. It emphasizes that leadership is a social and relational endeavor rather than an individual trait (Day & Liu, 2019; Drath, 2001; Uhl-Bien, 2006). This research does not limit its investigation to the only behaviors and ideas of formal leaders; it also explores the processes and practices of organizations through people's interactions (Crevani et al., 2010).

Leadership Development

In this study, leadership development refers to creating new capacities and growing leaders. For this study, leadership development is interlinked with professional development, which can include examples of ongoing technical training, mentoring, networking, conference attendance, and continuing education (WIAAB, 2022). This study expands its focus beyond individual leader development to examine the broader context in which leadership development occurs. I view leadership as a continuous process rooted in interconnected relationships and interactions, where people learn and grow through their day-to-day experiences and special life events (Carroll, 2015).

Pilot Weather Reports (PIREPs)

Pilot Weather Reports (PIREPS) are reports filed by a pilot who is en route and experiencing weather conditions (Federal Aviation Administration, 2003). These reports provide valuable information about current conditions and offer insight for other pilots who may be entering the same area of flight. Pilots use this timely and specific information in combination with other reports to develop an understanding of what is happening and to assist in their own evaluation when deciding the best path for a successful flight.

Preflight

Preflight involves preparing for a flight prior to takeoff. This is a planning process that can start days in advance of a flight and includes activities such as planning flight routes, checking weather, calculating performance, and inspecting the aircraft.

Positive Dynamic Stability

After a disturbance, such as an updraft, positive dynamic stability refers to the tendency of an aircraft to return to its stable position over a period of time through a series of successively smaller oscillations (Jeppesen Sanderson, Inc., 2002).

Positive Transfer of Learning

When a student learns a maneuver or skill that aids in learning another maneuver. The transfer of the skills learned in practice positively impacts the student experience and progress (Federal Aviation Administration, 1999).

Stretch Assignments

Stretch assignments are projects or tasks that are beyond one's current level of knowledge or skill and can serve to stretch you developmentally in order to learn and grow (WIAAB, 2022).

Transition Training

Pilots planning to develop their skills further and fly a different kind of airplane than what they have received training in can go through a transition training program to become proficient. In aviation, this can mean learning a high-performance airplane or complex airplane, transitioning from an aircraft with one engine to an aircraft with many engines, or switching to a plane with different landing gear configuration. Transition training teaches the pilot what is different about the aircraft and how the characteristics of the new aircraft differ from the aircraft experience the pilot already has experience with (FAASTeam, 2022).

True Heading

A pilot needs to account for a wind correction angle and apply this to their true course to understand their true heading (Jeppesen Sanderson, Inc., 2002). If wind correction is not applied pilots will not have their true heading and they can be miles off from their intended destination.

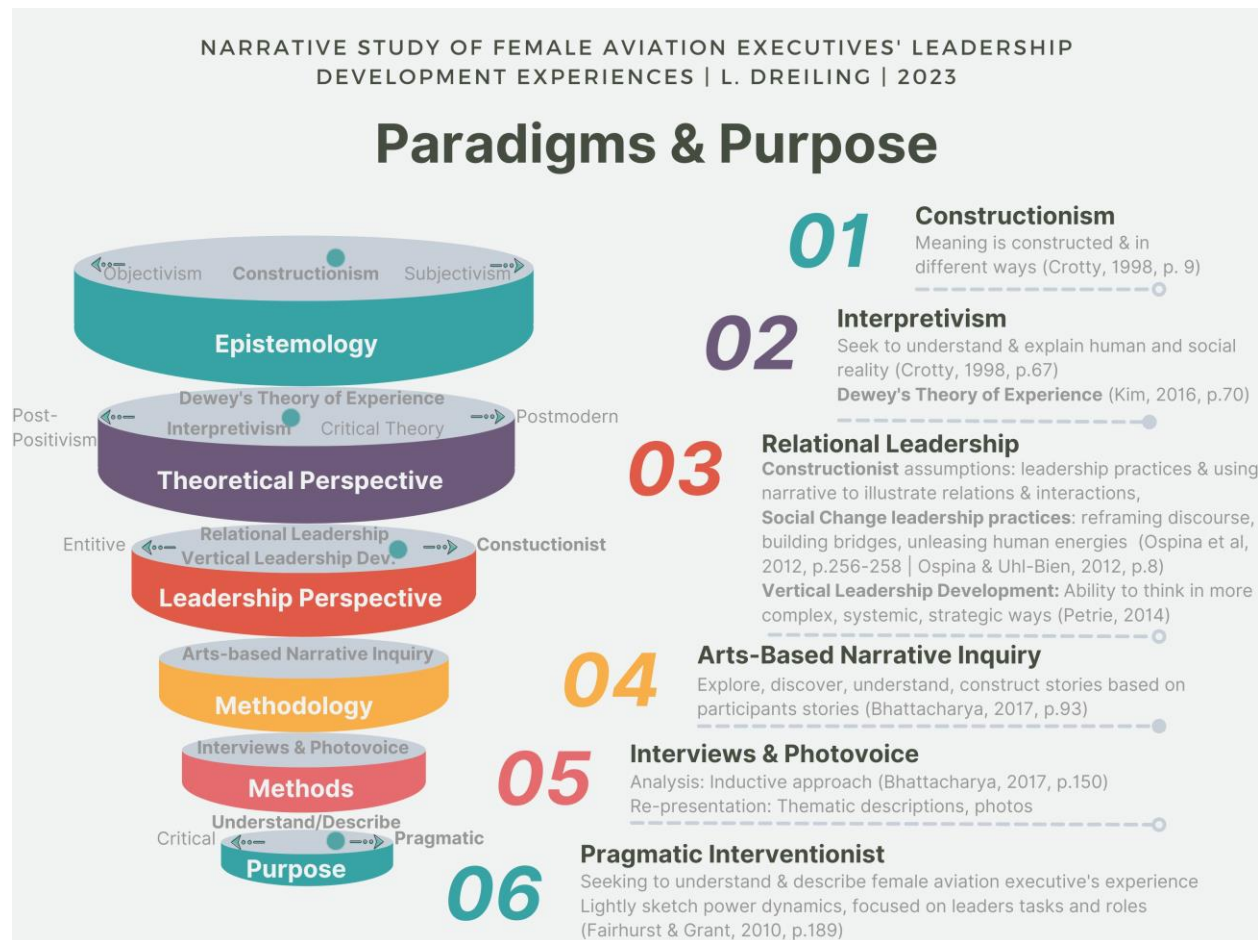
Upset Training

Upset training helps pilots explore ways to mitigate, recover, and be more proficient when faced with the intense situation of an upset airplane (FAASTeam, 2022). An airplane is considered upset when it exceeds parameters in normal flight operations or training.

Theoretical Framework

This study was situated within assumptions of constructionism and interpretivism, informed by relational and practice-oriented leadership theories to make meaning of women aviation leaders' stories of experience. Figure 1.2 illustrates the alignment across my research design, from my paradigm to my purpose. The lenses at each layer form a funnel representing how the study shaped my perspectives and framework, engaged research methods, and purpose.

Figure 1.2. Paradigms & Purpose



Epistemology

The broadest top lens reflects my epistemological commitment of constructionism. From this lens, knowledge and meaning are socially constructed, and the ways of constructing meaning may differ from person to person based on social context and the interaction of people and their world (Crotty, 1998). This perspective impacted my choices of shared research and co-creating with the participants. I also acknowledge that, from a constructionist view, this study was dependent on collaboration between the participant and myself and how much of their stories they were willing to share (DeMarrais & Lapan, 2004).

Theoretical Perspective

Next, the theoretical perspective of interpretivism offered a lens to further understand and explain the human and social realities of the experiences of women in aviation (Crotty, 1998). I also refer to John Dewey's theory of experience, specifically the principles of continuity, as I sought to understand each element of female aviation executives' experiences, expand the meaning of these experiences, and link together similar experiences (Dewey, 1997). The concept of "continuity of experience" signifies that each individual experience serves as a foundation upon which subsequent experiences are constructed and therefore also influences the nature of future experiences (Dewey, 1997). I viewed my participants' experiences in a continuity of past, present, and future, but not necessarily in a linear fashion (Kim, 2016).

Leadership Perspective

My leadership perspective draws from a relational leadership lens with constructionist assumptions focused on leadership practices and using narrative to illustrate relations and interactions (Uhl-Bien & Ospina, 2012). Relational leadership approaches share a focus on leadership beyond specific traits, behaviors, or abilities of a particular individual and instead brings attention to collective efforts and practices (Crevani, 2015; Ospina et al., 2012; Ospina & Uhl-Bien, 2012; Raelin, 2014). Relational perspectives highlight the location of leadership responsibility, meaning leadership does not lie solely with specific positions and titles, but rather can be found throughout the organization (Crevani & Endrissat, 2016). From this view, leadership researchers and practitioners are interested in understanding both the observable and the invisible elements connecting people involved in leadership processes (Ospina & Uhl-Bien, 2012).

In this study, I focused on broader systems of relationships and meaning making. The relational leadership elements informed my engaged design by allowing for interactions and space for storytelling, reflections, sensitivity, and compassion (Crevani, 2015; Ospina et al, 2012; Ospina & Uhl-Bien, 2012; Uhl-Bien, 2006). Practices of relational leadership supported community-engaged approaches. Additionally, through a relational lens, there were opportunities to advance communication by allowing diverse narratives, responsive listening, co-authoring, and dialogue and deliberation. In Ospina et al.'s (2012) social change leadership framework, the authors illustrate how non-profit organizations create strategic action to build collective power. Drawing from this relational model, I focused on the leadership practices of reframing discourse, bridging difference, and unleashing human energies to guide my efforts to engage community and advance communication. As I looked at the broader system of leadership practices, I sought to understand leadership practices that fostered vertical leadership development for the women in my study (Petrie, 2015). In this study, vertical development was more than advancement in leadership roles; it was the advancement in leadership thinking and practice – the capability to engage in more complex, systemic, and independent ways (Petrie, 2015).

Methodology and Methods

The next two lenses of my methodology and methods focused on arts-based narrative inquiry and the processes of conducting this type of study. By using arts-based narrative inquiry methods, I was able to explore the experiences of women in aviation leadership more fully. Bhattacharya (2017) explained that “narrative inquiry is a framework that helps researchers explore, discover, understand, and construct stories based on the participants’ recounting of their experiences” (p. 93). Narrative methods aligned with my commitment to make research more accessible and relatable to the public, leveraging the power of stories and art to educate and

connect people emotionally (Kim, 2016; Leavy, 2020). I strived to create relatable research that reaches a broader audience through art, which can educate, inspire, and foster dialogue (Leavy, 2020). By hearing women's narratives firsthand, I sought to create a comprehensive understanding of their aviation experiences and identify strategies for promoting women's advancement in the industry, thus informing the aviation sector's future direction in leadership development. The alignment of methodology and method is described more thoroughly in Chapter 3.

Purpose

Finally, the narrowest lens at the bottom of the funnel is my purpose for this study – to understand, describe, and illustrate female executives' experiences in the aviation industry. This purpose reflects what Fairhurst and Grant (2010) describe as a “pragmatic interventionist” approach to constructionist leadership research (p. 188), which acknowledges that issues of power are always present in the discussion of gender and leadership; however, the focus of this study was less on critique and more on illuminating and understanding the tasks and roles of practitioners in light of those dynamics. My framework allowed me to highlight engagement opportunities to increase the participation of women in aviation and build leadership programs to help them advance throughout their career journey.

Research Purpose and Questions

This arts-based narrative study sought to understand, describe, and illustrate the perspectives and leadership development experiences of female aviation executives. The study was guided by a central question: What are the life stories of female aviation executives who experienced leadership development or professional development during their careers? The associated sub-questions were:

1. What kinds of experiences have led females to advance in their aviation careers?
2. What do these aviation executives' stories reveal about the leadership practices of the aviation industry?
3. What can the aviation community learn from the aviation executives' stories in order to build leadership programs to support women in aviation?

Subjectivity Statement

As a facilitator and qualitative researcher, I approached this research as a constructionist and relational leader. I used arts-based narrative to explore and illustrate relations, interactions, processes, and practices of the aviation industry. I explored some power dimensions and brought forward underlying assumptions; however, my overarching goal was to support leadership development and pathways to leadership for women. I designed interactions to engage the participants and developed a partnership open to critical reflection from the participants as well as from my own analysis. Also, I constructed open-ended questions to allow for storytelling.

As a facilitator of the process, I also consider myself a part of the community I was studying. As an insider facilitator, there was a trust that was already built by being a part of the community. I could provide an insider's view of the experiences. According to Bhattacharya (2017), "many communities prefer insiders to conduct research about the communities instead of outsiders producing accounts that lead to further oppression" (p. 116). This was extremely helpful throughout the process as I was able to recruit members through my personal relationships in the industry. Also, during the discussion, we were able to have very personal and deep dialogue, because there was a foundation of trust from working together prior. During conversations, I related to their experiences and understood the language of the aviation community. As an active member of the aviation community, this research process required

continuous self-reflection and self-awareness, as I did not want to jump to conclusions based on my own experiences. The partnership between the participants and me throughout the research was reciprocal. I shared the information with the participants throughout the process and will share actionable steps with aviation organizations and companies after publication.

Significance of the Study

Women are underrepresented across aviation from career entry to executive positions. To address the identified advancement barriers including the lack of leadership development and professional development opportunities for women, it is key to first understand women's experiences. My goal of the study was to support leadership development and pathways to leadership positions for women. This study offers insight into the leadership development experiences of female aviation executives, reveals leadership practices of the aviation industry, and provides an opportunity to learn from the experiences of women leaders. I captured and amplified voices of women leaders and share their success textually and visually. The outcomes of this study can inform the development of programs and systems that support the professional development and leadership development of women in aviation throughout the lifespan of their careers. I want to create a system made by women for women, aimed at:

- increasing access and attracting females into aviation careers,
- identifying and sharing essential skills to become an aviation leader,
- retaining women in aviation career fields and supporting female aviation leaders,
- enhancing professional leadership programs for industry/organization leaders to support the development of women leaders.

Chapter 2 - Literature Review

The need for greater gender diversity in leadership positions within the aviation industry is an issue of critical importance. Women have long been a part of aviation history, but their representation remains disproportionately low in both the broader field and senior leadership roles. This disparity is evident in the alarming statistics: a mere 7% of the top 100 airline group CEOs are women, according to a FlightGlobal survey (Harper, 2022). While aerospace and defense industries show slightly better numbers, with female CEOs representing 19% of the total (Korn Ferry, 2020), the lack of accessible data makes it challenging to assess the precise extent of women's representation in key aviation leadership roles.

In order to investigate the underrepresentation of women in aviation leadership roles, this literature review aims to (a) identify and explore the relevant views of leader and leadership development, (b) describe leadership development programs in aviation, and (c) explore leadership development programs in other industries.

Organization of Review

This review is organized into several sections for clarity and comprehensiveness. It is structured to provide an understanding of leadership development, leadership development programs in the aviation industry, and a broader look at leadership development programs across industries to look for potential areas for growth based on other successful leadership programs. First, I examine the varying views of leader and leadership development and connect back to my leadership framework and application to my research. Following this, I explore leadership development programs in aviation, with a focus on the Boeing company and its leadership program. Next, the review will discuss leadership development in other industries. It will

emphasize the importance of leadership development programs and tailored professional growth opportunities to address the specific challenges women face at different stages of their careers.

Literature Search Strategy

The literature review was based on a systematic search of relevant academic studies, industry reports, and publications related to gender diversity in aviation leadership. A variety of academic databases, industry journals, and credible sources were consulted to ensure a comprehensive understanding of the issue. The search strategy included keywords such as “leader and leadership development,” “women in aviation leadership,” “leadership development for women,” “leadership development in the aviation industry,” and related terms.

By examining the current landscape, challenges, importance, and potential solutions related to women in aviation leadership, this review seeks to contribute to the ongoing dialogue about gender equity in the industry and provide insights into how the aviation sector can better harness the talents and perspectives of women in leadership positions. This study acknowledges the extensive body of research focused on women and leadership within organizational contexts (Correll, 2017; Davis & Craven, 2016; Owen, 2020; Shea & Renn, 2017). However, it recognizes the pragmatic nature of its own purpose, which was not to comprehensively cover this extensive field. Instead, this study was situated within a male-dominant industry and represents an exploratory step, aiming to bridge traditional positional leadership approaches with non-dominant, process-oriented perspectives, in pursuit of transformative changes.

Leader and Leadership Development

This study explored individual leader development, with a key focus on leadership development. Leader development refers to the development of knowledge and skills of an individual, whereas leadership development is a social process that enables individuals to

collaborate to attain collective outcomes (Leading Effectively Staff, 2020). The relationship between leader and leadership development is interconnected because companies can develop individual leaders, but that does not necessarily result in effective leadership (Day & Liu, 2019). Leadership is a social and relational process (Day & Liu, 2019; Drath, 2001; Uhl-Bien, 2006). Leadership is not understood as an individual person, but rather a set of practices that gives people a common direction (Drath et al., 2008; Guthey et al, 2019). Leadership development, therefore, should not be an isolated process, but rather a relational one – working across teams and the organization. Not only should employers look to develop the capacity of their leaders, but there also needs to be a focus on the conditions created and practices for leadership development to take place. Building from this understanding, this research does not focus solely on the actions and thoughts of formal leaders but instead also examined the processes and practices of organizations through people's interactions (Crevani et al., 2010).

For effective leadership development, learning from experiences needs to take place, and often that requires conditions created for reflection, feedback, and support (Day & Liu, 2019). Such conditions empower leaders to grow, adapt, and refine their leadership skills, ultimately contributing to the broader objectives of the organization. The success of leadership development programs hinges not only on developing individual leaders but also on cultivating an organizational culture that supports and nourishes leadership growth. This study concentrated on examining variables and attributes that are closer at hand and can be influenced, including factors like motivation for leadership, insights gained from challenging experiences, shifts in a leader's self-perception, and enhancements in collective capabilities (Day & Liu, 2019).

Furthermore, contemporary perspectives of leadership understand it as a string of connected relationships and interactions that people continually learn from and that influence

their leadership development (Carroll, 2015). According to Carroll (2015), “people learn at work and in their organization and develop throughout the day-to-day routines and special events of their lives” (p. 102). Leadership is not a destination but rather a journey (Leading Effectively Staff, 2020). This study looked not only beyond the development of an individual leader but also at a broader view of when and where leadership development happened. I approached this study with the assumption that leaders do not necessarily need to be sent to a development program in order to develop leadership (Carroll, 2015).

It was important to recognize the intricate relationship between developing individual leaders and achieving effective leadership outcomes (Day & Liu, 2019), as well as acknowledging leadership development as an ongoing process that can occur throughout daily activities (Carroll, 2015) and through leadership development programs. Simply investing in the development of individual leaders does not guarantee effective leadership within an organization. This means that, for leadership development to truly thrive, it should not be an isolated endeavor but rather a collaborative and interconnected process that extends across teams and permeates the entire organization. In other words, effective leadership development cannot be confined to the individual leader alone nor to a sole activity; it must be a holistic, organization-wide effort.

In Chapter 1, I presented my comprehensive framework (see Figure 1.2); in this section, I dive deeper into the leadership perspective informing this study.

Relational Leadership

Relational leadership focuses on people and the interactions between them (Drath, 2001; Uhl-Bien, 2006). Relational leadership emphasizes leadership and relationships at all levels and is not restricted solely to traditional top-level leadership roles (Uhl-Bien, 2006). This theory has roots in the leader-member exchange (LMX) theory, which highlights the leader-follower

relationship (Graen & Uhl-Bien, 1995). LMX theorists started to identify the importance of the quality of relationships between the leadership and followers and the impact of these relationships on leadership effectiveness (Ashkanasy et al, 2012).

Relational theory expands beyond the simplified traditional view of leadership as a tripod of entities leaders, followers, and common goals. Through a relational theory lens, these terms are not fixed, rather, “the meaning is continuously being framed and reframed from context to context and from one time to another” (Drath et al, 2008, p. 640). Relational leadership serves as a framework to study the relational processes of leadership, rather than focusing on the individual traits, behaviors, or abilities of a leader. Uhl-Bien (2006) defines relational leadership as a “social influence process through which emergent coordination (i.e., evolving social order) and change (i.e., new values, attitudes, approaches, behaviors, ideologies) are constructed and produced” (p. 668). Hogg’s (2005) social identity theory of leadership describes a similar process in leadership and the outcomes of this relational work, explaining that “leadership is a relational term – it identifies a relationship in which some people are able to persuade others to adopt new values, attitudes and goals, and to exert effort on behalf of those values, attitudes, and goals” (p. 53). Relational leadership theory (RLT) focuses on the “*relationships* (interpersonal relationships as outcomes of or as context for interactions) and *relational dynamics* (social interactions, social constructions) of leadership” and concentrates “on the *relational processes* by which leadership is produced and enabled” (Uhl-Bien, 2006, p. 667, emphasis in original). RLT recognizes that leadership can happen throughout all levels and allows a broader focus on the social forces that can influence group leadership (Uhl-Bien, 2006).

I approached this research with a constructionist, relational leader lens. I view leadership as relational and draw from scholarship by Mary Uhl-Bien and Lucia Crevani, who define

leadership work as involving the collaborative creation of social processes, leading to the emergence of coordination and change. From this lens, the focus should be on the interactions and relationships where these processes occur, which can take place in various work settings and involve a broader range of actors than those traditionally emphasized (Crevani, 2019).

Additionally, I view leadership with relational elements such as the focus on the “collective process of people working together toward common goals or collective leadership development efforts” (Dugan, 2017, p.18). This relational lens informed my approach to designing this study and helped shape my research questions, data gathering, analysis, and interpretation.

Through a constructionist approach, I paid special attention to relationships between the individual leaders, followers, and the broader system of relationships (Ospina et al, 2012). One specific element of relational leadership that helped me analyze the leadership engagement process is that *relational* is understood as the narrative and words people use to co-create shared meaning. This theoretical framework aligned with my overall approach to relational leadership engagement. My view of relationality relates to the story and communication people use to co-create shared meaning (Fairhurst et al., 2012). The process I designed allowed space to co-create conversation and shared meaning. This also influenced my selection to conduct my research using the narrative inquiry framework. Narrative inquiry assisted in understanding and constructing narratives based on the participants’ descriptions of their stories (Bhattacharya, 2017). The process was structured for responsive listening, compassion, co-authoring, and dialogues and deliberation; which are all elements of relational leadership (Ospina & Uhl-Bien, 2012). The interview questions were open-ended and allowed for storytelling.

My process design was intentionally structured to co-create knowledge with the aviation community. I allowed time for the participants to reflect individually, share out to the group, and

then identify patterns they saw. With this approach to qualitative data analysis, the group was able to collaborate and co-create the knowledge during the process. I made ample time for shared sensemaking. I created time to review the data together and share back with the focus groups the additional analysis I conducted. I sought participants' input to see if all the interpretations I have listed were portrayed as they see it as well. I planned focus groups with open questions and to be freer flowing to allow for storytelling. Ospina et al. (2012) explained that "one way to tap into knowledge of the quotidian experience is storytelling, which links one's personal experience to that of others and helps people realize that what they experience is connected to larger systemic forces" (p.275).

Through my research, my intent was to illuminate the connecting threads of relationships and the impact it had on people's experiences as they were participating in leadership. This aligns with Ospina and Uhl-Bien's assertion that "bringing relationality to the leadership field means viewing the invisible threads that connect actors engaged in leadership processes and relationships as part of the reality to be studied" (p. xx). I looked towards those considered the success stories of aviation – women who have made it to the top of the aviation field – specifically seeking out the stories and experiences that have led them to advance in their career. Additionally, I was interested in relational leadership, as it relates to leadership for women in aviation. Crevani (2015) mapped out four possible versions of relational leadership, including constructionist perspectives on relating, transforming, and growing people. The relational achievement end of the spectrum explains "relational competence is important for leadership work", and the relational responsibility end expresses that "relational competence is an ethical priority" (Crevani, 2015, p. 203). As I focused on my research, I was interested in the movement

from the frames and specifically the competencies that are expressed through the experiences of the participants.

I was also interested in models that will assist in the expansion of leadership development programs to support the advancement of women in aviation. One of the models I am interested in is the relational leadership model, which is not a leadership theory, but does provide a model for developing effective groups (Komives et al., 2013). This framework identifies five components of creating relational leadership including “purposeful, inclusive, empowering, ethical, and process-orientated” (Komives et al., 2013, p. 34).

Social Change Leadership

For this study, I drew from two separate social change models: (a) Ospina et al.’s (2012) framework of social change leadership, which was derived from work with non-profit organizations, and (b) the HERI (1996) social change model of leadership development (SCM), which was developed primarily for use in college student leadership development. These models’ assumptions, values, and practices, despite their specific contexts, provide valuable insights for the professional development of leaders throughout their lives. Both models share a commitment to social responsibility, collaboration, and value-based leadership. Additionally, these models view leadership as a process rather than a position. Ospina et al. (2012) place an emphasis on specific leadership practices for social change, while the HERI (1996) model provides a broader framework applicable to diverse contexts. My research drew assumptions and practices from these models to understand the perspectives and experiences of female aviation executives in the context of leadership and professional development.

According to Ospina et al. (2012), the goal of social change leadership is to “illuminate participant’s mean-making process in co-construction the leadership necessary to create social

change” (p. 255). It seeks to harness the power of disadvantaged groups so they can take action to alter their material circumstances (Ospina et al., 2012). The shared vision of justice and well-being drives activities to generate collective capacity and influence key decision-makers with authority to address the issues (Ospina et al., 2012). Ospina et al.’s (2012) framework builds on the assumptions and values that give meaning to the work and interactions between the people of the organization and create a vision of the possible. They offer tools, or *leadership practices*, for operationalizing constructionist leadership research (Ospina et al., 2012, p. 258). As an approach to transformation, social change leadership highlights the need for mutual sense-making and action. In their social change leadership framework, Ospina et al. (2012) illustrated how non-profit organizations create strategic action to build collective power. In this way, social change leadership emphasizes the interconnection between various leadership dimensions (i.e., values, practices, and outcomes) and multiple levels of action (individual, organizational, and societal) (Ospina et al., 2012).

Similarly, I view social change theory as the courageous, bold, pioneering path where organizations make ambitious goals no matter the perceived circumstances or lack of resources. This theory speaks to my heart of going after the change you want to see. While Ospina et al.’s (2012) framework calls out directly to social change organizations, they acknowledge that it holds relevance for many other organizations from public agencies to consumer product corporations, as these may also indirectly be attempting to reshape society. In alignment with social change leadership, I created space for collaboration, a shared vision of the possible, and a focus on practices in this study to create strategic action to build collective power.

The framework of social change leadership shifts the focus of inquiry from the individual to the collective by drawing attention to the leadership practices that advance social change.

Ospina et al. (2012) explained “these collectively created, purposive bundles of activities that build leadership capacity represent a useful entry point to meaning-making and an appropriate unit of analysis” (p. 258). Drawing from this framework, I focused on the leadership practices of reframing discourse, bridging difference, and unleashing human energies to support the recruitment, retention, and advancement of women in aviation career fields. Through these leadership activities, I sought to build leadership capacity and amplify the voice of women in aviation. I sought to identify intentional leadership practices oriented toward these social change leadership practices to produce collective capacity to leverage power and create systemic social change (Ospina et al., 2012). Additionally, through the social change leadership perspective, I designed research questions that encouraged participants to tell their own narrative, while holding space for the co-creation of meaning-making on their thoughts regarding the leadership necessary to create social change (Ospina et al, 2012).

In addition to Ospina et al.’s (2012) framework, I also used the HERI (1996) SCM to inform my approach to designing this study. According to the SCM:

A leader is not necessarily a person who holds some formal position of leadership or who is perceived as a leader by others. Rather, we regard a leader as one who is able to effect positive change for the betterment of others, the community, and society. All people, in other words, are potential leaders. Moreover, the process of leadership cannot be described simply in terms of the behavior of an individual; rather, leadership involves collaborative relationships that lead to collective action grounded in the shared values of people who work together to effect positive change. (HERI, 1996, p. 16)

Stemming from this understanding, I was guided by the SCM based on the following premises:

- Leadership is socially responsible; it affects change on behalf of others.

- Leadership is collaborative.
- Leadership is a process, not a position.
- Leadership is inclusive and accessible to all people.
- Leadership is value-based.
- Community involvement and service is a powerful vehicle for leadership.

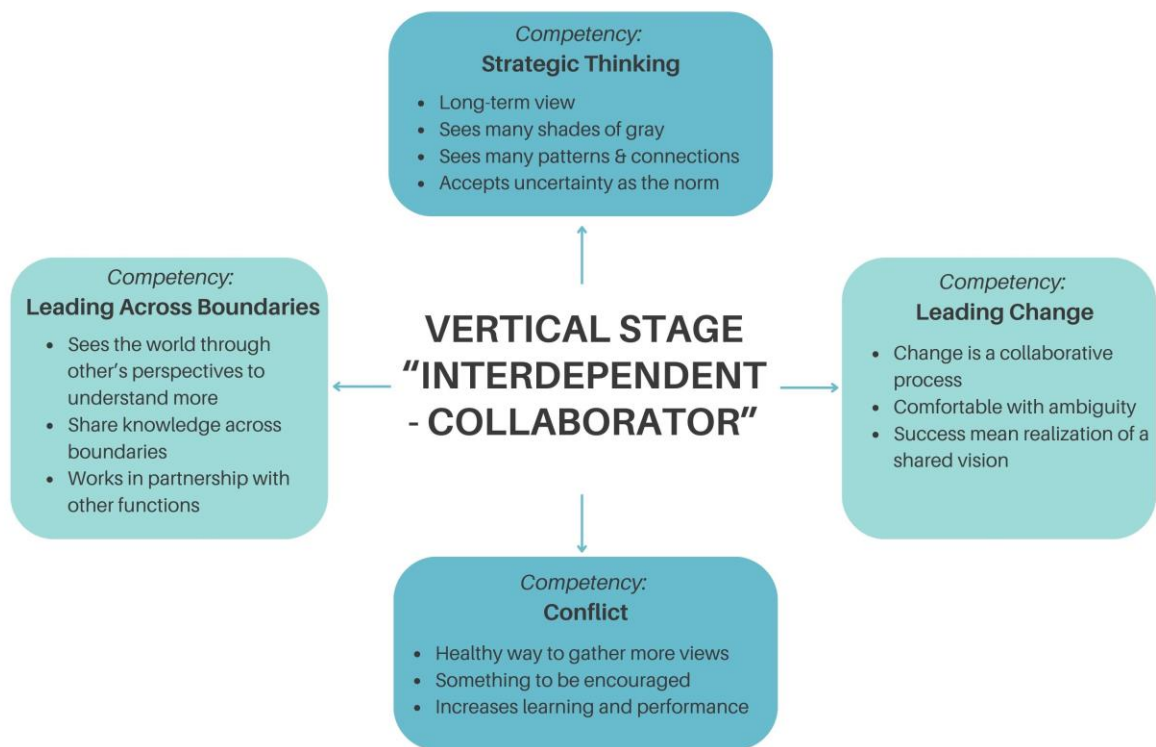
(HERI, 1996, as cited in Komives & Wagner, 2017).

Vertical Leadership Development

For this study, I drew conceptually from Petrie's (2014) vertical leadership development. Vertical leadership development acknowledges two types of leadership development: horizontal and vertical (Petrie, 2014). Horizontal development focuses on the development of knowledge, skills, and competencies, whereas vertical development refers to the advancement of a person's thinking (Petrie, 2014). Petrie (2015) reports that three primary conditions are needed to support vertical leadership development, including creating *heat experiences*, *colliding perspectives*, and *elevated sensemaking*. Heat experiences involve a leader facing a "complex situation that disrupts and disorients [her] habitual way of thinking" (Petrie, 2015, p. 3). Colliding perspectives is when a leader is exposed to people with different perspectives and backgrounds (Petrie, 2015). Elevated sensemaking relates to when a leader uses a process or coach to make sense of experiences and perspectives for an advanced worldview (Petrie, 2015).

The most advanced thinking stage in vertical development is termed *interdependent-collaborator*, characterized by competencies in strategic thinking, leading change, handling conflict, and leading across boundaries as outlined in Figure 2.1 (Petrie, 2014).

Figure 2.1. Vertical Stage Interdependent-Collaborator



Note. Adapted from Petrie (2014)

The focus on advancing an individual's thinking and the conditions needed for leadership development aligns with my interest in understanding the competencies of female aviation executives and the conditions in which their development advanced. This perspective complemented my emphasis on relational leadership and social change leadership by adding depth to the examination of how leaders' thinking evolved within relational contexts. Vertical leadership development provided context for assessing key competencies, including strategic thinking and leading change, which were highly relevant to my study's exploration of the experiences and narratives of female aviation executives. Furthermore, the concept of creating conditions for leadership development, such as heat experiences, colliding perspectives, and

elevated sensemaking, informed my study and helped me understand how these conditions have contributed to the development of women leaders in the aviation industry. Vertical leadership development enriched my study by providing a holistic view of leadership development that encompasses cognitive, relational, and contextual dimensions, offering valuable insights for advancing women in aviation leadership roles.

For this study, I was interested in the vertical competencies at the level of interdependent-collaborator, as well as the conditions created during leadership development. I focused my attention on the women's narratives and experiences presented that aligned with the vertical leadership competencies of strategic thinking, leading change, conflict, and leading across boundaries, as well as the practices during leadership development (Petrie, 2014).

Aviation Industry Leadership Development

In exploring leadership development programs in the aviation industry through my personal network, I have found that some aviation companies have invested in a variety of tools, such as skill and competency assessment (e.g., measuring individual leader skills and competencies in a 360-degree feedback) and targeted development teams (e.g., teams that identify and focus on training for individual leaders that they see potential in). These tools are typically located under their HR departments, and I found that most companies reported on programs focused on individual leader development. To understand emerging trends in the industry, I specifically looked to the Boeing Company for the combination of the leadership development program and their success in growing their representation of women.

Boeing is an aerospace company that has made a concentrated effort to grow diversity in their workforce. For transparency of their progress, Boeing publishes its *Global Equity, Diversity and Inclusion Report* each year. The 2023 report detailed that women were now represented at

every level including executive, manager, individual contributor, engineer, production, and maintenance. They reported on three years of data for women in their workforce, and representation of women had increased in every category. A closer look at their senior positions revealed a 5.8% increase at the Board of Directors level, a 5.4% increase in Executive Council, and a 1.7% increase in Executives (Boeing, 2023).

With Boeing's success in growing their representation of women in their workforce, I was curious about their initiatives and specifically their leadership development programs. In 1999, Boeing launched their Global Leadership Program to develop leadership competencies within the executive population while solving its most critical problems (Marquardt et al, 2018). The findings from an extensive evaluation of the program reveal that action learning had been highly effective in creating a platform for senior-level executives to engage in experiential learning while simultaneously grappling with genuine corporate challenges associated with their international placements (Marquardt et al., 2018). The Global Leadership Program was targeted at developing executive skills within three categories of global competencies:

1. Most-critical competencies
 - a. Adapting, thinking globally, building relationships, inspiring trust, leading courageously, aligning the organization, influencing, and negotiating
2. Very important competencies
 - a. Shaping strategy, fostering open and effective communication, attracting and developing talent, driving for stakeholder success, demonstrating vision, using sound judgment
3. Important competencies

- a. Driving execution, inspiring and empowering, working cross-functionally, focusing on quality and continuous improvement, and applying financial acumen (Marquardt et al., 2018, p. 144).

In the aviation industry, leadership development programs vary. Boeing stands out for its commitment to diversity and inclusion and their approach to leadership development.

Leadership Development Programs in Other Industries

Day and Dragoni (2015, as cited in Day & Liu, 2019) conducted a survey involving more than 3,500 leaders, revealing that two-thirds felt that the leadership development practices in their organization were ineffective. While current leadership development programs include types for high-potential employee programs, mid-level leader programs, and senior executive programs, many of the programs are stand-alone without meaningful connections to link them together (Day & Liu, 2019).

In certain industries like technology, gender-oriented leadership development programs have emerged. A couple of programs include (a) Advancing Women in Technology, which focuses on mid-level women leaders to senior levels of leadership and emphasizes leadership competencies, and (b) the Emerging Women Leaders discussion group, which aims to build skills and professional networks (Executive Career Success, 2018). There are more women's leadership development programs (WLDP) being developed due to an increasing demand to develop and retain the best talent and to create more gender-balanced organizational leadership (Litwin, 2018). Litwin (2018) reported that participants in WLDPs found the most impactful aspect of these programs to be strategic networking. However, there does not seem to be research that investigates the impact of these programs as it relates to the advancement of women in their career and their leadership development. Additionally, while many corporations internally track

their participants' progress, they do not share the information publicly, limiting availability of the results and implications of these program assessments.

In summary, this literature review explored different perspectives on leader and leadership development, highlighted the significance of leadership as a relational process, and emphasized the need for leadership development to be a collaborative, organization-wide effort. I connected these findings to my leadership perspective that emphasizes relational leadership, social change leadership, and vertical leadership development. This review examined leadership development programs in other industries, with a specific focus on programs aimed at advancing women in leadership roles. While such programs exist, limited publicly available data makes it challenging to assess their impact. There is a need for strategic action and collective capacity-building to address the underrepresentation of women in aviation leadership roles. In this study, I aimed to address gaps in the literature and contribute to the ongoing dialogue about gender equity in the aviation industry, as well as provide insights into how the sector can better harness the talents and perspectives of women in leadership positions.

Chapter 3 - Methodology

*Changed the game but it's all the same
You're in the world of Just
Did your best but there's no rest
You're in the world of Just.
Just a student
Just a job
Just a mom
Just a.
Not enough time
Not enough variety
Not enough.
Just shy of the right combination
You're in the world of Just
STOP.*

*They are in the world of Just
Just the wrong time and skewed view.
You are more than Just
A knowledge seeker
A dream chaser
A life maker
You are enough, no more just.*

(Dreiling, personal notes, Jan 22, 2023)

As a first-generation flyer, I had little exposure to the world of aviation prior to entering, but somehow, I knew I was born to fly. The freedom and magic of flight drew me in, and I arrived in the industry with full heart and confidence. Upon entering into aviation training and the aviation career field, I quickly learned that aviation has a continual culture of assessment. That constant assessment is motivated with safety in mind, but it can also challenge individual confidence. You find yourself being asked questions such as: *When did you start flying? How many hours did it take you to solo? How many total hours do you have? Have you ever failed a check-ride or test?* These questions seem to be honest inquiries; however, they also come with expectations and assessment. Then you are left wondering if you measured up or if you fit in. My

poem above reflects the continual internal and external struggle of meeting personal, societal, and industry expectations while re-checking your view and control of your destination.

With each interaction, experience, and relationship, my heart stays fully invested in my journey, but my confidence follows the music of life. It builds when I expand my known capabilities, develop new ways of thinking, and surround myself with a network of leaders. It contracts as I learn from each situation that causes suffering. Humans learn from their experiences, both actively in what we do and what the experience does to us. Dewey's theory of experience explores the combination of the active and passive elements of experiences (Kim, 2016) and can assist in understanding the life stories of female aviation executives, their leadership development experiences, and the relationships and interactions between these experiences.

In this chapter, I discuss the methodology I employed for my study, which aimed to provide a comprehensive exploration of the leadership development perspectives and experiences of female aviation executives throughout their careers. I chose to position my research in qualitative and narrative inquiry principles, with the goal of gaining a deep understanding of the nuanced stories of these women within the aviation industry. By embracing arts-based research approaches, I aimed to offer fresh insights and engage a wider audience in the ongoing dialogue about women's roles in aviation leadership. Through the combined use of narrative inquiry and the innovative photovoice method, my research sought to resonate with readers, convey the emotions involved, and promote critical awareness, ultimately shining a light on the experiences of these remarkable women and their valuable contributions to the aviation sector. In this chapter, I will discuss the methodological considerations, the framework guiding my research, participant selection, the research site, and my own positionality as a researcher, all

of which provide the groundwork for a detailed exploration of the data collection methods, management, and analysis, and the re-presentation of the women's narratives.

Research Purpose and Questions

The purpose of this study was to understand, describe, and illustrate the perspectives and leadership development experiences of female aviation executives during their career progression. The study was guided by a central question: What are the life stories of female aviation executives who experienced leadership development or professional development during their careers? The associated sub-questions were:

1. What kinds of experiences have led females to advance in their aviation careers?
2. What do these aviation executives' stories reveal about the leadership practices of the aviation industry?
3. What can the aviation community learn from the aviation executives' stories in order to build leadership programs to support women in aviation?

Methodological Considerations

Purpose of Qualitative Inquiry

My approach to this study was based on the principles of qualitative and narrative inquiry, as I sought to understand the detailed accounts and leadership development experiences of women in aviation. I employed qualitative research to understand how people make sense of their world. As Creswell (2013) described, "qualitative research begins with assumptions, a worldview, the possible use of a theoretical lens, and the study of research problems inquiring into the meaning individuals or groups ascribe to a social or human problem" (p. 37). In an effort to expand the understanding of women aviation executives' experiences and express alternate meanings that may not be understood otherwise, I turned toward arts-based qualitative research.

This type of research can provide “new ways of seeing and experiencing” (Leavy, 2020, p. ix) and has become increasingly more accepted (Barone & Eisner, 2012). My goal was to produce useful research that is accessible and relatable to the aviation industry and the larger public.

Arts can transcend traditional approaches to reach broader audiences. Art provides the opportunity to educate, inspire, and persuade (Leavy, 2020). According to Barone and Eisner (2012), “arts-based research is a heuristic through which we deepen and make more complex our understanding of some aspects of the world” (p. 3). The arts encourage dialogue and connect people on an emotional level to challenge stereotypes and build community (Leavy, 2020). Conducting this research qualitatively allowed me to tell a more complete story of the environment and to explore the possibilities without limiting responses. Hearing the narrative and stories in the participants’ own words helped form better pictures of the experiences of women in aviation and supported the identification of best practices for retaining and advancing women in aviation. Gaining women’s insight into the context environment of the aviation industry provided rich data to inform future directions for developing aviation leaders.

Methodological Framework

I drew from forms of narrative inquiry for this study, which aligned with my goals to describe, illustrate, and understand women’s experiences in aviation and their leadership journey, as well as to enlighten readers of their reality and to expand ideas of the future of aviation leadership. As we understand our lives in our own living narratives, narrative assists in understanding the actions of others as well (Kim, 2016). Kim (2016) explains, “by the way of storytelling, we allow stories to travel from person to person, letting the meaning of story become larger than an individual experience or an individual life” (p.9). Each story reflects power relationships and domination (Kim, 2016). The narrative mode of thinking “uses stories to

understand the meaning of human actions and experiences, the changes and challenges of life events, and the differences and complexity of people's actions" (Kim, 2016, p.11). Narrative is all around us and makes up our everyday lives.

As discussed in Chapter 1, the narrative study reflects a constructionist epistemology – the belief that meaning is constructed and can vary from person to person, shaped by social context and interactions (Crotty, 1998). This foundational belief informed my choices of shared research and collaboration with participants, recognizing the importance of participants' willingness to share their stories in this context. Applying constructionism to the study of leadership, I took what Fairhurst and Grant (2010) describe as a pragmatic-interventionist lens, which allowed me to surface power dynamics through practitioner stories and counter-stories, with the aim of identifying practices and roles that could contribute to individual growth and industry transformation. Kim (2016) explains that counter-stories question the complacency of mainstream ideas and the status quo. The participants in this study were amongst only a few women in executive roles in the aviation world. Documenting their stories was essential to reveal what is often hidden in their experiences and provide an opportunity to communicate information on differences that mattered in their journeys.

I took a more holistic approach (Leavy, 2020), utilizing a multi-method narrative design that included an arts-based strategy (photovoice), along with the narrative interviews and a focus group. This was important because, as Kim (2015) described, "when both ways (narrative and visual) are used in combination, they can convey an idea that neither could convey alone, keeping the truthfulness of the stories intact" (p. 147). The intention of illuminating narrative through interviews combined with photovoice was to create stories that would resonate with people. Tracy (2010) expressed that the key to resonance is aesthetic merit. Leavy (2020) also

highlights aesthetics, noting that “although produced by amateurs, the visual art produced by research participants can still be quite powerful, especially with respect to conveying emotion” (p. 243).

Aligned with aesthetic merit, arts-based research practice “cultivates new insights and illuminates aspects of the social world and human experience” (Leavy, 2020, p. 22). Initially conceived by Wang and Burris (1997), photovoice is an essential participatory research approach that can develop insights into the lived experiences of people and communities, promote dialogue, and contribute to social change (Milne & Muir, 2020). Wang and Burris (1997) outlined the three main goals of photovoice: “1) to enable people to record and reflect their community's strengths and concerns; 2) to promote critical dialogue and knowledge about important community issues through large and small group discussion of photographs; 3) to reach policymakers (p. 370). Wang (1999, as cited in Milne & Muir, 2020) offers photovoice as a ‘tool for action’, “with the potential to improve lives, influence policy, and build ties within communities” (p. 4).

Using an art-based method such as photovoice, the final representation has the potential to display an idea in a new light, encourage people to think differently about an issue, and build empathetic understanding (Leavy, 2020). Barone and Eisner (2012) echo similar sentiments, stating that “one important attribute of works of art, and arts-based research, can be their capacity for enhancing alternative meanings that adhere to social phenomena, thereby undercutting the authority of the master narrative” (p. 124).

Additionally, this arts-based practice serves a pragmatic-interventionist purpose, as Leavy (2020) explains that “arts-based practices can be employed as a means of creating *critical awareness* or *raising consciousness*... [as well as] the *cultivation of empathy*” (p. 24, emphasis

in original). In other words, this approach to inquiry offers many benefits, including revealing power relations (often invisible to those in privileged groups), raising critical race or gender consciousness, building coalitions across groups, and challenging dominant ideologies. Photos create a way to connect with people's stories and promote dialogue to cultivate understanding and action (Leavy, 2020).

My research process design was intentionally structured to co-create knowledge and provide the space to collaborate during the interviews and the member check focus group. I allowed time for participants to reflect individually, share their stories, and then identify patterns they saw. The process of data collection will be elaborated on in the next section.

Research Design

Participant Recruitment and Selection

For this narrative study, I was interested in gathering quality data from a small group of women executives that I could do extensive meaning-making around. Creswell (2013) advised for a narrative researcher to focus on a single individual to up to three individuals. DeMarrais and Lapan (2004) also suggested that “fewer participants interviewed in greater depth usually generates the kinds of understanding qualitative researchers seek” (p. 61). With this advisement, I invited three female senior leaders in the aviation industry to participate in the study. Criteria for participation included: (a) a female currently employed in the aviation industry, (b) has at least 15 years of experience in the aviation industry, (c) holds a senior leadership title (e.g., CEO, Owner, President, and Vice President), and (d) is active in women's advancement initiatives (e.g., members of aviation organizations and boards supporting women's advancement). There was a very limited pool of participants to share their leadership experiences, as females represent less than three percent of the aviation organization CEOs (Lutte, 2021).

Yet, I chose to focus on women in senior aviation leadership positions because they had multiple years of experience in aviation and could speak to their industry experience.

Additionally, due to their positions and/or point in their careers, there was a higher likelihood that they would have had some advanced training, education, experience, and/or professional development activity to advance their skills. Asking the top leaders of aviation to participate in the study also brought legitimacy to the results; others in the field may be more willing to listen to, and implement, their guidance.

Due to the specific selection criteria and limited participant pool, I utilized “unique-case selection” to select the participants (DeMarrais & Lapan, 2004, p. 60). The full recruitment e-mail can be found in Appendix A. Four women were contacted from my personal network of women leaders in aviation, and three agreed to participate in the study. The research participants are listed using pseudonyms in Table 3.1, including professional details related to the selection criteria and their industry certifications.

Table 3.1. Research Participant Professional Information

Participant Pseudonym	Business Title(s)	Employment During Interview	Years in Aviation	Aviation Certifications	Aviation Women's Organizations & Board Participation
Capitano	CEO	Major U.S. Airline	22	Instrument, Commercial Pilot, CFI, CFII, MEI, ATP	WIAAB, WAI, WTS
Mavis	Vice President	Uncrewed Aircraft Systems (Drone) Company	15	sUAS pilot, Instrument, Commercial Pilot, CFI, CFII, ATP	WAI
Raven	Founder, Owner & CEO	Corporate & Business Aviation	22	Private Pilot	WIAAB, WAI, IAWA, Ninety Nines

All participants were also trained “fixed-wing” (airplane) pilots. Some of their aviation certifications included: small uncrewed aircraft systems (sUAS) remote pilot, private pilot, instrument pilot, commercial pilot, certified flight instructor (CFI), certified flight instructor instrument (CFII), multiengine instructor (MEI), and airline transport pilot (ATP). I defined being active in women’s advancement initiatives by being involved in one or more of the following industry organizations, boards, or initiatives such as the FAA Women in Aviation Advisory Board (WIAAB), a member of Women in Aviation, International (WAI), a member of the Ninety-Nines, Women in Transportation Service (WTS), and/or a member of International Aviation Women’s Association (IAWA). While not part of the selection criteria, one additional similarity worthy of note is that all the participants were mothers.

Research Site

As the aviation industry is a global industry, these female leaders were spread across the nation from the East Coast, Midwest, and South/Southwest. Due to the location complexity and tight schedules of aviation executives, I met virtually with the participants. I used Zoom to conduct my interviews and member checks and used e-mail to correspond for the photovoice project and any additional follow-up questions or information.

Researcher Positionality & Membership Role

As a qualitative researcher, it is important to discuss my positionality within this study as my background, values, beliefs, and assumptions impact my research process. I recognize I cannot, and could not, completely separate my own experiences from the women executives’ experiences I strived to understand, describe, and illustrate in my research. I address my positionality to provide context for readers regarding the perspective from which I approached

this study. In an effort to provide a transparent lens, I address my positionality from views of external, internal, and hidden.

From an external viewpoint, people typically see my appearance and profession. I am a Caucasian female. I have been in the aviation industry for 20 years, and I am the CEO of my own aviation company. I trained through university as a traditional aviation commercial pilot, fixed-wing certified flight instructor, and multiengine instructor. After graduation, I received my small UAS remote pilot certification as well. I earned two B.S. degrees in Professional Pilot and Aviation Technology Management, and a M.S. in Counseling and Student Development from Kansas State University. Professionally, I served as the Advanced Air Mobility (AAM) Lead Manager for L3Harris, Executive Director of Aviation Strategy at Kansas State University's Aerospace campus, Deputy Director of Aviation and UAS for the Kansas Department of Transportation, and several other professional roles supporting aviation at Kansas State University. Through these roles, I developed professional expertise in Advanced Air Mobility (AAM), aviation infrastructure, flight training, aviation curriculum development, leadership advancement, and aviation business strategy.

People who know me a little better start to see the inside – including my beliefs, values, and motivations. I am a friend, daughter, sister, wife, and mother. My family is at the heart of every decision I make. I am a Christian with a passion for my communities, including locally and in aviation. This includes being an active volunteer in multiple aviation organizations to better my community. I am a positive, courageous, and curious seeker of knowledge. I continue to connect with a network of leaders to build on our strengths to co-create a path to the future with elevated underrepresented narratives promoting critical conversations.

The more hidden parts of me I do not always share include feelings of self-doubt, fear, loss, and pressure of limited time. I am a cancer survivor and feel the value of time deep in my soul. I continue to seek fulfillment, which is a complex feeling of being humble and grateful for where I am today. And, I continue to feel the desire to do more and be more. I believe we each have the power to influence lives, and I want to do what I can to make this world better for future generations.

Throughout my personal experiences, professional aviation involvements, and through my unique privilege of serving on the FAA Women in Aviation Advisory Board (WIAAB), I recognized a lack of information regarding the experiences of women executives in the aviation industry. This led to the selection of my research study, as I want women in the aviation industry to have access to leadership resources and feel empowered to seek senior leadership positions. Additionally, I want the aviation industry to understand and implement practices supporting leadership development for women to benefit the entire aviation community.

As a female aviation executive with many years in aviation, my own experiences impacted the lens through which I receive my participants' stories. Additionally, I had met many of these women executives through my professional roles in aviation and through my involvement in the FAA WIAAB. This dynamic positively influenced the research, as I already had some understanding and common ground with these professionals' stories. I was able to understand their references, and our established rapport allowed for deeper conversations. I used caution as I re-represented their narratives to accurately raise their voice and not my own. As I relayed the narratives, I articulated my personal connections to the topic and identified who I am as a person and professional in relation to my research motivations. I continue to use first-person

voice throughout, to remind the reader of my presence and influence during the data collection and analysis, as suggested by Tracy (2010).

I seek to tell the lesser-told story that could use new understanding. Kim (2016) details the importance that counter-stories can bring to contest the dominant assumptions, explaining that “counter-stories are concrete particulars of experience of individuals or groups that conventional legal reasoning excludes, they can open new windows into reality, help us construct a new world, and imagine possibilities for life other than the ones we live” (p.14). Approaching the research as a pragmatic interventionist allowed me to understand and describe these female aviation executives’ experiences focusing on leaders’ tasks and roles while lightly sketching power dynamics (Fairhurst & Grant, 2010).

As I reflected on my intentions for this research, my own story and experience wove through many of the participants’ narratives as well as through our shared experiences. I felt the need to share the stories of the amazing women I have had the honor of knowing while reflecting my own experiences as well. Having experienced too many aviation classrooms and boardrooms as the only woman, I wanted to share the environment as fully as possible in both narrative and visuals.

In summary, as a woman professional in the aviation field for over 20 years, owner of an aviation business, and an alumna of the Department of Transportation’s Women in Aviation Advisory Board, this matter is near to my heart. Through my own career progression, my aviation leadership training has been mainly informal, consisting of observations I made and skills I picked up by being active on the job. While learning on the job via happenstance or through natural observation can be helpful, there is a critical need to develop intentional leadership programs designed to encourage female interests, persistence, and advancement in

aviation fields. There are opportunities for these programs to be embedded in work activities, but in a deliberate way to support the leadership development of women in aviation. These activities include creating conditions for development to occur and for practitioners to use tools and approaches to create the development conditions (Petrie, 2015).

Data Collection Methods

I used multiple data collection methods that complement each other and provide a more holistic look at stories of female aviation executives who experienced leadership development or professional development during their careers. By using interviews and photovoice, I sought to honor the experiences of these female executives and provoke action (Kim, 2016; Weber, 2008). My data collection sources included (a) one-on-one narrative interviews with female executives in aviation, (b) photos collected from the female executives in aviation, (c) written responses to the PHOTO questions from the female executives in aviation, (d) individual member checks, (e) group member check, and (f) field observation and notes. View the data collection schedule in Table 3.2.

Table 3.2. Data Collection Schedule

Timeline	Activity
April 24 Week:	Narrative Interview – Held separate 1-hour sessions focused on each participant’s storytelling of leadership and professional development experiences in aviation. Reviewed the process, expectations, and timeline.
April 24 Week:	Half hour training session (may have been combined with Week 1 interview depending on time available) – Reviewed with participants training on photography, ethics, and safety guidelines. Participants were asked to use their own phones or cameras to take their picture.
May 1 Week:	Photovoice: Participants and researcher had three weeks to capture images to build a photo collection of up to three photos and respond to PHOTO questions for each photograph.
May 1 – May 30:	Photo Analysis 1 – Photos due to researcher by May 30. Researcher reviewed photo collections as they came in and examined the PHOTO analysis discussion.
June 1 – July 28:	Primary Data Review – Researcher conducted data analysis and compiled identified themes and concerns.

Aug 11 – Aug 31:	Individual Member Check: PHOTO Analysis – Presented preliminary findings with participants to conduct analysis of themes and outline possible research-based strategies to address research questions. Participants finalized their collection and narration for the project reveal.
Sept 10 Week:	Member Check: Confirmatory Focus Group – Presented final findings/presentation to participants prior to the reveal for final member reflections. Discussed Photo Gallery and public display options.
November TBD:	Photo Gallery – Public presentation of data to invited community members and stakeholders. Locations to be determined.

Interviews. The interviews were designed with open questions to allow the conversation to be free-flowing and to encourage storytelling. Ospina et al. (2012) explained that “one way to tap into knowledge of the quotidian experience is storytelling, which links one’s personal experience to that of others and helps people realize that what they experience is connected to larger systemic forces” (p. 275). In other words, by allowing individuals to tell their stories and make meaning together, it became larger than an individual experience. Kim (2016) similarly asserts that “by way of storytelling, we allow stories to travel from person to person, letting the meaning of the story become larger than an individual experience or an individual life” (p.9). Using visual-based narrative inquiry allowed the female executives’ stories to be seen through another lens and connect with a broader audience. Weber (2008) explained that “the power of art helps get our research findings across to a much wider audience who may pay more attention because they can see what we mean, both literally and figuratively” (pp. 44–55).

Narrative work can be “emotionally and politically evocative, captivating, aesthetically powerful, and moving” (Leavy, 2009, p. 12). My hope is that the reader will connect with these stories more deeply as they see and hear each of the narratives. Kim (2016) referenced ideas from Johnson (2004) and stated, “when narrative and visual are used in combination, they can convey an idea that neither could convey alone, keeping the truthfulness of the stories intact” (p. 147). Combining narrative inquiry and photovoice for a visual-based narrative inquiry provided

the opportunity to shed new light on a reoccurring social issue and guide us to the best path forward.

Narrative Interview. I organized interviews to discuss the professional development and leadership development of females in aviation throughout their career progression and advancement. I shaped the narrative interview in phases including the narration phase and the conversation phase (Kim, 2016). My first interview question was open-ended to allow for listening to each participant's story. I restricted interruptions and interventions, allowing my role to strictly be the listener, until they completed their story (Kim, 2016).

After the narration phase, I followed up with a more conversational phase of semi-structured questions where I asked for clarifications and for the participants to go more in-depth (Kim, 2016) on the topic of leadership development. The semi-structured format utilized a few questions prepared based on intentional areas, but it was still free flowing to provide space for the participant's narrative. For example, one question was, *What leadership process or practices supported your own leadership development?* A full list of the semi-structured interview questions and interview guide is included in Appendix B.

Following the interviews, we discussed the photovoice project and planned for them to send their photos and responses to the PHOTO questions via email. The final meeting as a focus group was also conducted virtually. Additionally, I used audio transcription technology to capture the data from our discussions.

Photovoice. Bhattacharya (2017) asserts that "narrative inquiry is a framework that helps researcher explore, discover, understand, and construct stories based on the participants' recounting of their experiences" (Bhattacharya, 2017, p.93). Additionally, images have the power to reach a wider audience, communicate more holistically, and provoke new ways of

looking at things critically (Weber, 2008). As these women shared their stories both verbally and visually, it provided a new lens to relate to their stories and connect the ways to support leadership and professional development for women in aviation.

Photo Elicitation and Reflection. After the individual interviews, I followed up with a request for a collection of up to three photos in response to the prompt: *What is it like to be a female executive in aviation?* While I provided some foundational guidance (please see Appendix C for full protocol), I also encouraged participants to make interpretations based on their experiences. In alignment with arts-based research, all the participants were considered equal collaborators (Leavy, 2020). Thus, I also participated in the activities, so as not to be seen as *the researcher* off to the side. I was fully immersed in the photovoice activity with them.

Once they captured and submitted their photos, they were asked five questions to describe their photo(s) more in-depth. Table 3.3 below illustrates the photo analysis guide that was provided to the participants.

Table 3.3. Photo Analysis Guide

PHOTO ANALYSIS GUIDE	
P	Describe your PICTURE .
H	What is HAPPENING in your picture?
O	Why did you take a picture OF this?
T	What does this picture TELL us about your experience as a woman in aviation?
O	How can this picture provide OPPORTUNITIES for us to support development of leadership and advancement of women in aviation careers?

Note. Adapted from Hergenrather et al. (2009)

Individual Reflection and Co-Authoring. Next, I met individually with each participant for member reflection and co-authoring of narratives. We discussed the photos and the descriptions they provided for the photovoice project, using our time to co-create and elevate messages that stood out to each of the participants. We reflected on the prevalent themes in

relation to the research questions and verified I was reflecting their individual voices appropriately. As part of this process, we reviewed the quotes that supported each theme, and the participants had the opportunity to modify their quotes from the interviews. The insights provided shaped the final list of themes and supporting quotes. For example, during the individual member check with Raven, we ended up broadening one of the themes to ensure the message captured the full picture.

Focus Group Reflection and Verification. After these one-on-one meetings, we met one more time for member reflection as a group. This allowed for the group to verify the narratives brought forward and also decide, as a group, how the information should be presented. During this final meeting, we discussed options for the photo gallery and who should be our target audience. We discussed the paths to reach the aviation industry and noted many aviation industry trade groups, business resource groups, and aviation publications as potential outlets.

Data Management

A full list of data collected and data collection sources is noted in Table 3.4. I used Zoom to record my interviews and used the built-in audio transcription technology to capture the data from our discussions. I also used transcripts and field notes to reconstruct participant narratives. I paid close attention to the stories both in tone and intent as “capturing the essence, the intent, and the tone of the conversations – as perceived through my own interpretive lens, then to be verified by the other participants’ readings of the transcript” (Bird, 2005, p. 239). I familiarized myself with the data and re-read it several times (Bhattacharya, 2017).

Table 3.4. Data Collection Sources

Participant Pseudonyms	Sources
Capitano	1 individual narrative interview
	3 photos submitted
	3 written photo reflections
	1 individual member check
	1 group member check
Mavis	1 individual narrative interview
	3 photos submitted
	3 written photo reflections
	1 individual member check
	1 group member check
Raven	1 individual narrative interview
	4 photos submitted
	4 written photo reflections
	1 individual member check
	1 group member check
Me	2 photos submitted
	2 written photo reflections
	1 group member check
	Multiple reflections, observations, and notes

Data Analysis

To organize my research, I used a mix of Dedoose, Excel, and printed materials for coding and analysis. After collecting the stories, I began the process of inductive analysis.

Bhattacharya (2017) describes inductive analysis as

the process through which a qualitative researcher might look at all the raw data, chunk them into small analytical unites of meaning for further analysis, cluster similar analytical units and label them as categories, and identify salient patterns after looking within and across categories. (p. 150)

I conducted data analysis both during the interviews and after I collected all the data noted in Table 3.4. I used inductive analysis and did multiple iterations of chunking and clustering (Bhattacharya, 2017). I made notes of my analysis process and highlighted areas connecting back to my research questions during the chunking and clustering process. Even as I conducted the clustering process, I continued to go back and identify patterns that I noticed. Recognizing that data analysis is iterative, I moved back and forth from these stages (Bhattacharya, 2017). As presented above, I had multiple member reflection points in the process as well.

In my coding process, I employed the technique of inductive analysis. Following Bhattacharya's (2017) guidance, I embarked on this journey by gathering the participants' stories, each containing a collection of insights and perspectives. As I dove into the data, I embraced the essence of inductive analysis by meticulously breaking down the raw information into small, meaningful analytical units. This process of chunking and clustering enabled me to discern similarities and connections among these units, ultimately leading to the emergence of distinctive categories (Bhattacharya, 2017). These categories transformed into thematic narratives and became the foundation upon which I constructed my findings, enriched with vivid examples drawn from the narratives. This process aligned with Tracy's (2018) phonetic iterative approach to data analysis, as I iteratively explored the relationship between what the data was telling me and what I wanted to know from the women's experiences. In essence, my coding process was an iterative exploration and organization, guided by the principles of inductive analysis, ensuring that no valuable insight went unnoticed as I navigated the intricate landscape of qualitative data. My coding process consisted of 3 stages: pre-coding, first-cycle coding, and second-cycle coding (Saldana, 2021).

Precoding. During pre-coding, I starred and bolded important moments in the interviews and in the photovoice responses that moved me, or where I could feel the passion and importance from the participant. I also wrote down preliminary jottings (e.g., relevant words, phrases, and notes) and rewatched the interviews, reflecting on my own feelings and notes.

First-Cycle Coding. I approached first-cycle coding with in vivo and description codes. In vivo coding uses a word or phrase that comes directly from the participant's language (Saldana, 2021). I used in vivo coding to pull short phrases from our interviews and the photovoice responses to honor the voices of female aviation executives. Emotion codes "label the emotions recalled and/or experienced by the participant, or inferred by the researcher about the participant" (Saldana, 2021, p. 160). I used emotion codes to gain a deeper insight into the participants' perspectives and experiences. Using description and emotion codes, I focused on the mood and tone of the images submitted (Saldana, 2021).

I completed my first rounds of coding through Dedoose, but during the process of building my categories to themes, I physically printed and sorted the codes. When I use the terms first- and second-cycle coding, I am using them in a broad sense. The first cycle of coding involved multiple readings, re-watching interviews, coding based on the participants' words, coding based on emotion, and coding based on descriptive coding based on terms connecting to theories.

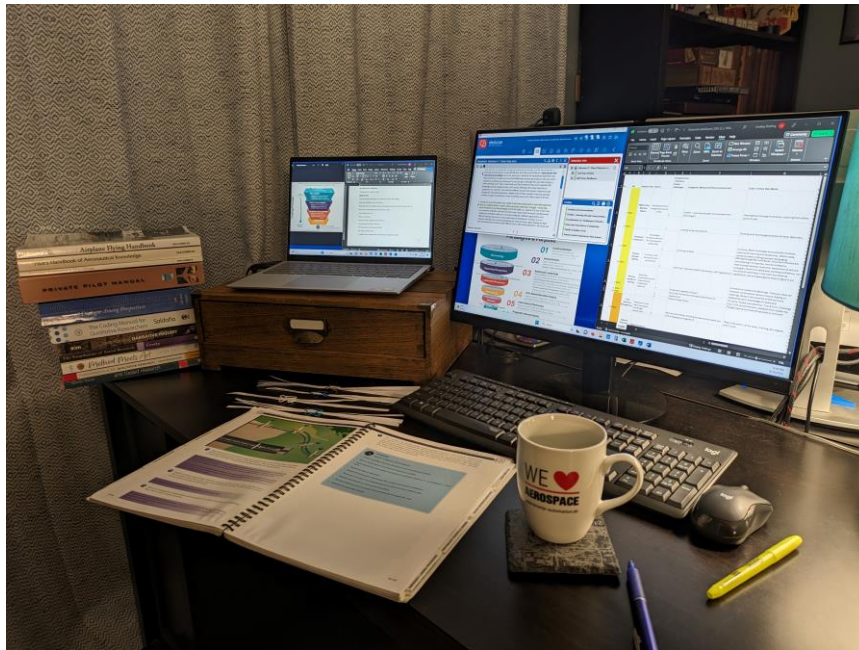
Second-Cycle Coding. I reflected on the data for two weeks before proceeding with the second cycle of coding. While not active at the computer in the process, I reflected daily on the stories shared and how to best organize and present the results. During the second cycle, I reorganized and recategorized to combine similar codes and patterns. This allowed me to identify the salient themes and those most meaningful based on my research questions. For example, I

had categories like *developing through frustration* and *learning from other point of view* that combined into one theme of *building with the thought process of many*. Also, during the second cycle, I created a master Excel table to help organize my mental process. This included a large table with the themes, categories, codes, descriptions, participant examples and quotes, theory connections, and broad relationship to aviation concepts. I used this as a reference document when writing the results and findings.

Following a protocol of second-cycle coding, I used focused coding to search for the most frequent and significant codes moving the initial codes into themes and categories (Saldana, 2021). During the first and second coding cycles, I employed analytic memo writing to capture my reflections on the coding process, including how I related to participants' stories, any patterns I saw across the data, and the code choices I made. I had multiple screens open alongside my code to keep my theories in mind as well as the voices of the participants.

Below are two photos illustrating my command station as well as the physical sorting of paper codes:

Figure 3.1. Command Station



Note. My command station during the coding process depicts the combination of references to my theory paradigms, Dedoose coding, participants' stories collected, and connections to aviation applications.

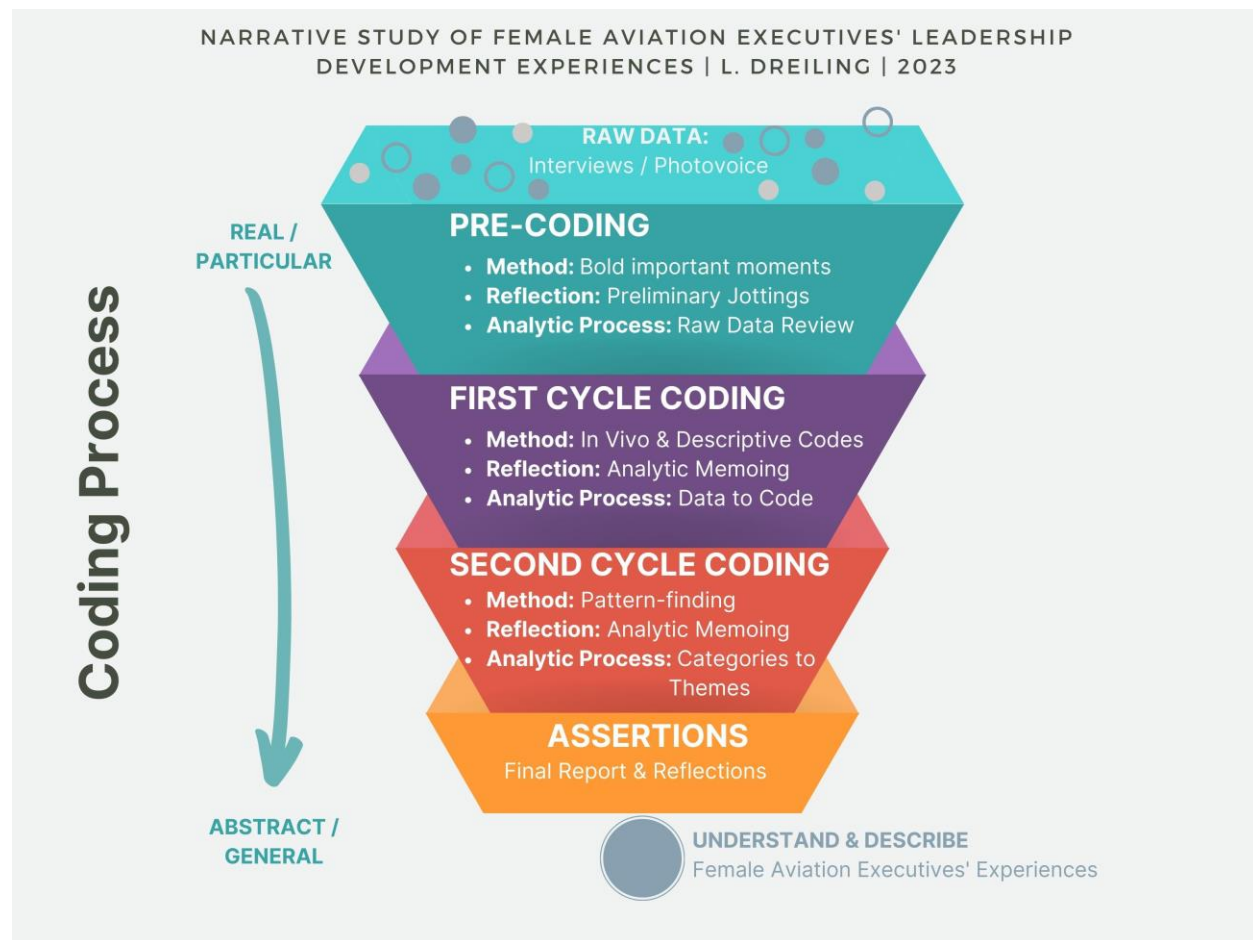
Figure 3.2. Physical Resorting of Codes



Note. This photo illustrates the digital codes I printed from Dedoose and the physical resorting of codes, categories, and themes during the second cycle of coding. I sorted and resorted codes both on the computer and by physically sorting paper strips.

My data coding process is illustrated graphically in Figure 3.3 below.

Figure 3.3. Coding Process



Note. Adapted with influence from Saldana's (2021) codes-to-theory model.

Data Re-Presented

Instead of using the term, *presented*, my research connects more with Bhattacharya's (2017) term "re-presentation," which she uses to acknowledge that we are not able to truly represent someone else (p.158). Participants' stories will be re-presentations of what was shared during the interviews and photovoice data collection. In designing this study, I was interested in a hybridized format of traditional and more experimental art-based re-presentations. By implementing this visual arts-based participatory method, the participants were active in creating the art, which not only served as data but also re-presented data (Leavy, 2020).

In chapter four, I re-present the data in both a thematic narrative and an art-based re-presentation using the photos the participants shared. Bhattacharya (2017) explains that the thematic narrative format “follows an inductive analysis of data with the main themes being headings of the findings elaborated with various examples of them in elaborate details” (p. 181). I employed the analysis of narratives, or the paradigmatic mode of analysis, by examining the narrative data to identifying common themes or salient constructs in the data (Kim, 2016).

The re-presentation of the findings are a combination of photos, participant voice, and my analysis of a thematic narrative with member check verification. The data is re-presented in a visual-based narrative and will also be shared with the public at a date and location to be determined by the participants. Arts-based practices encouraged inclusion of participants in this process and gathering their thoughts on how to best reach relevant stakeholders (Leavy, 2020). According to Tracy (2010), “part of making scholarship powerful is talking in ways that are appreciated by a variety of audiences, including grant agencies, governmental officials, and media contacts – many of whom are unfamiliar with the methodology of qualitative research” (p. 838). In line with this standard of quality, I included the participants in the decision on how the findings of this study should be presented and shared for their benefit and the benefit of the aviation community.

Research Quality

Tracy (2010) offers eight criteria for qualitative quality to assist in understanding and evaluating qualitative work. This conceptualization also provides a platform of unified language for qualitative scholars and encourages dialogue across qualitative paradigms. She describes the criteria as “eight *universal* hallmarks for high quality qualitative methods” (Tracy, 2010, p. 837, emphasis in original). While there are critiques opposed to the development of fixed standards

for qualitative research as this could limit creativity and diversity of design, Tracy (2010) suggests that this conceptualization not only provides a tool for qualitative methodologies, but also helps to validate good qualitative work. Drawing from best practices, this creates a “big tent structure for qualitative quality while still celebrating the complex differences amongst various paradigms” (Tracy, 2010, p. 839). Tracy’s (2010) criteria for high quality qualitative research include “(a) worthy topic, (b) rich rigor, (c) sincerity, (d) credibility, (e) resonance, (f) significant contribution, (g) ethics, and (h) meaningful coherence” (p.839). Based on these standards, I address each criterion in reference to my research.

Research on understanding the experiences of women aviation leaders and to share best practices of leadership and professional development, is both relevant and timely. As I previously noted, women have been significantly underrepresented in the field of aviation for many years, and there is very little research on women in aviation and even less so on aviation women leaders. Additionally, with the high demand to fulfill the growing aviation workforce needs, it is vital for the aviation industry to expand and diversify its labor force now. Data is needed to develop leadership programs specific to the aviation industry designed to encourage female interest, persistence, and advancement in aviation fields.

To meet the criteria for rich rigor Tracy (2010) explains “richness is generated through a requisite variety of theoretical constructs, data sources, contexts, and samples” (p. 841). For this study, I collected data from multiple data sources by means of narrative methods, including open-ended and semi-structured interviews, photovoice, and a focus group with senior women leaders currently employed and active in the aviation industry. Additionally, I elicited photos from each of the participants and asked them to respond to five open-ended questions related to their photos.

Furthermore, Tracy (2010) highlights achieving sincerity through self-reflexivity and transparency. I practiced self-reflexivity by entering the field through introspection, I have assessed my own biases and motivations throughout each point in the process, including the research design, data collection, data analysis, and presentation (Tracy, 2010). I also took reflexive field notes about my subjectivities and their impact on my sensemaking. I used first person voice to remind the readers of my presence and influence during the data collection and analysis (Tracy, 2010). I stayed transparent about the research process by working closely with my participants to co-create knowledge and considered their needs throughout the process.

Tracy suggests that qualitative credibility is established through various methods, such as providing rich and detailed description, employing triangulation or crystallization, and embracing both multivocality and partiality (Tracy, 2010). In addition to using multiple methods to collect data (i.e., interviews, photovoice, and member reflections), I sought to re-present data with many details of the interactions to allow the reader to make their own interpretations and meaning. My research design included member reflections and co-authoring. I embraced multivocality by including multiple and varied voices in the report and analysis (Tracy, 2010). The participants were engaged in the data analysis process and the development of the re-presentation, as I wanted the study to be useful to them, and they know their needs and priorities best. Member reflections took place individually and as a group. The time built in for member reflections goes beyond checking for accuracy. Tracy (2010) details how “member reflections allow for sharing and dialoguing with participants about the study’s findings, and providing opportunities for questions, critique, feedback, affirmation and even collaboration” (p.844). This created an opportunity to dive deeper and cover the topic more thoroughly. Furthermore, this

process yielded additional data on what the participants found meaningful in the presented research.

Tracy (2010) describes resonance as a “researcher’s ability to meaningfully reverberate and affect an audience” (p. 844). My motivation for doing this study was to provide insight to the lived experiences of aviation women executives, promote connections to their story, and share best practices. These women have amazing stories that I know will engage, delight, and humanize real issues. One of the reasons I chose the narrative methodologies is because stories resonate with people. With the aviation community being relatively small, this is a chance to connect with a broader audience and provide a “face” to the numbers.

As I look to the contribution this research will have on knowledge, practice, and politics (Tracy, 2010), my goal was to address the gap in the literature and also provide action steps to improving aviation practices. My study best aligns with Tracy’s (2010) *practically significant research*, given the aim of seeking to provide useful knowledge. According to Tracy (2010), “good qualitative research captures how practitioners cope with situated problems and provides implications that may help participants develop normative principles about how to act” (p. 846). This study shares the stories of the aviation executive women leading their sector of the industry in hopes of shedding light on the current issue of the underrepresentation of women in aviation, as well as to create accelerated career advancement opportunities with access to leadership development.

There are a variety of practices to address ethics in qualitative research, “including procedural, situational, relational, and exiting ethics” (Tracy, 2010, p.847). Much of the procedural ethics for this research study can be seen in the practices addressed through the Institutional Review Board (IRB). Aligned with these practices, my research process included

doing no harm, negotiating informed consent, ensuring confidentiality, and informing the participants that their participation was voluntary (Tracy, 2010). The forms provided to the participants are included in Appendix E. As I negotiated confidentiality, the participants had agency in what they wanted to share, and two participants made the choice to share photos of themselves. As I look to situational ethics, I recognize that each situation is different, and I consistently reflected on and critiqued my ethical decisions (Tracy, 2010). Relating to relational ethics, the network I reached out to were people I hold in very high regard. There was a mutual trust that had already been built with this community. Throughout the research design and implementation processes, I did everything in my power to continue this relationship of mutual respect. I built in reciprocity with the participants to ensure I was meeting their needs and expectations. Lastly, exiting ethics focus on an understanding that “ethical considerations continue beyond the data collection phase to how researchers leave the scene and share the results” (Tracy, 2010, p. 847). I consulted with the participants for this consideration and utilized member reflection opportunities to validate that I was presenting the information accurately. I asked participants to re-read the information to see how each interpreted the data presented, and we made necessary adjustments if any unintended consequences were identified.

The eighth and final element of Tracy’s (2010) conceptualization is meaningful coherence. Tracy (2010) suggests that studies that exhibit meaningful coherence skillfully integrate “their research design, data collection, and analysis with their theoretical framework and situational goals” (p. 848). My lens of social constructionist epistemology; theoretical framework of relational leadership, social change leadership, and leadership-as-practice; and my narrative methodology were woven throughout my study. Additionally, to be meaningfully coherent, I employed member reflections – “a practice that does no aim toward accuracy of a

single truth, but rather provides space for additional data, reflection, and complexity” (Tracy, 2010, p. 848).

Chapter 4 - Findings

*Hear the change coming as my heels echo down the hallway,
Each step leading me to my destiny,
Refusing to let the negative internal and external voices have their way with me,*

*This dream is real,
I am
Made for this,
Exceptionally you are too,*

*Trust yourself and your influence,
On your own no longer,*

*See there are allies
Holding the door for us,
Inside you is power, humility, and hope,
Not to be underestimated,
Ever a resilient force creating the momentum to change the world.*

(Dreiling, personal reflection, August 16, 2023)

The purpose of this arts-based narrative study was to understand, describe, and illustrate the perspectives and leadership development experiences of female aviation executives during their career progression. The study was guided by a central question: What are the life stories of female aviation executives who experienced leadership development or professional development during their careers? The associated sub-questions were:

1. What kinds of experiences have led females to advance in their aviation careers?
2. What do these aviation executives' stories reveal about the leadership practices of the aviation industry?
3. What can the aviation community learn from the aviation executives' stories in order to build leadership programs to support women in aviation?

The findings presented in this chapter are re-presentations of the stories shared during the data collection process. These re-presentations were co-created through visual arts-based

participatory methods through which participants actively created art to express their narratives (Barone & Eisner, 2012; Leavy, 2020), combined with coding of the narratives (Saldaña, 2021). The re-presentation of the findings weaves together participants' photos, participants' voices through narrative text, and my own analysis of themes with member check verification to illustrate a narrative thread that connects all the research questions. The contrast of the free-flowing narrative presented alongside structured thematic tables created some natural tension in the storytelling process; however, the intent is that readers (academic and within the aviation industry) will connect with the messages conveyed in different ways.

This report of my findings also illustrates the interplay of constructionist and entitative leadership perspectives. The narratives highlight characteristics, skills, and beliefs utilized to accomplish and advance aviation executive leadership work (entitative) while calling specific attention to social and relational practices/actions that build leadership capacity (constructionist). These dual perspectives offered a lens to explore the experiences and process through which the social construction of leadership was taking place while providing opportunity to advance entity dimensions by reporting on specific characteristics, behaviors, skills, and beliefs enacted for relational leadership (Uhl-Bien & Ospina, 2012).

The engaged and participatory processes of data collection and analysis created conditions for continuous review and sensemaking for this qualitative study. I gained deep insights into the life stories of female aviation executives through interaction with the rich data collected during the semi-structured interviews, the photo elicitations and narrative responses to the photovoice questions, and the analytical memos written during the analysis processes. I identified 10 themes in response to the research questions.

In response to the overarching question, exploring the life stories of the female aviation executives, I presented a meta-story of a flight journey in three parts:

- First Leg – Take-off: Advancement in aviation;
- Second Leg – Cruise: Leadership practices; and
- Third Leg – Landing: Leadership training.

Each leg of the journey is linked directly to a research sub-question. Under the umbrella of each leg (and research question), themes are then presented.

Each leg of this journey serves as a thematic section that dives deeper into the experiences and achievements of these women in aviation leadership. The "Take-off" leg is the starting point of the journey, focusing on the women's careers in aviation and their paths of career advancement to reach executive positions. Within this leg, various themes related to career advancement, challenges, and opportunities seized by the female aviation executives are explored. The "Cruise" leg represents the midsection of the journey and is dedicated to examining the leadership practices of the aviation industries and the exposure to opportunities as these women navigated their leadership journey. This segment provides an understanding of their experiences as aviation executives, shedding light on the prevailing leadership practices and dynamics within the aviation field. The "Landing" leg serves as the finish of the journey, focusing on the leadership training and development that have played a significant role in shaping the female aviation executives' careers. Themes in this section revolve around the leadership development programs, their life values, and mentorship opportunities that have aided these women in achieving their positions in aviation leadership. This thematic approach helps paint a holistic picture of their leadership journey in the aviation industry and contributes valuable insights to the overarching research question.

While I will discuss each theme separately, they are interconnected to the overarching research question and sub-questions. In the development of the theme statements, I focused on honoring the voices of the participants. The labels are translated as a blend of patterns I saw, connections to the theory, and direct language used by the participants. While presenting the themes, I include evidence in the form of narrative excerpts and photos shared by the participants. It is also worth noting that any given example of a participant's experiences and excerpt of their narrative may align with multiple themes; however, they are organized by the primary theme they support. An outline of the themes in the aviation executives' leadership journey is illustrated in Figure 4.1.

Figure 4.1. Leadership Journey Themes



Take-off: Advancement in Aviation

Research sub-question one (RQ1) explores and describes the kinds of experiences that have led females to advance in their aviation careers. Through the data analysis process, I identified four themes within this leg of the journey: (1) *Building With the Thought Process of Many*; (2) *Challenges Increase Capacity for Learning*; (3) *Trusting in Self During Times of*

Uncertainty; and (4) *Using Everyday Interaction of Leadership and Experiences as Development*. The themes are described in Table 4.1., and a full table including codes can be found in Appendix D.

Table 4.1. (RQ1) Experiences Leading to Advancement

Theme	Description
Theme 1. Building with the thought process of many	Development through learning and building on the experiences of others. Each person's experience provides unique insight that may not be available from any other source. These interactions lead to advancement individually and as a team.
Theme 2. Challenges increase capacity for learning and leadership	Approaching challenges each day with a mindset of learning, curiosity, and the opportunity for growth. Learning from the challenging experiences and failures to become a better leader and be more prepared for the next event.
Theme 3. Trusting in self during times of uncertainty	During ambiguity, moving through uncertainty, fear, and doubt toward trusting in yourself and your capabilities. With each experience, building confidence, self-awareness, and resilience.
Theme 4. Using everyday interactions of leadership and experiences as development	Development through daily activities such as presences at meetings and involvement with leadership practices prepares you for future experiences. Positively applying each learning experience to build on the next and develop the skills needed for the next opportunity.

Theme 1: Building With the Thought Process of Many

Theme one, Building With the Thought Process of Many, captured the idea of collaborative development through the accumulation of knowledge, learning, and experiences from a diverse range of individuals. This theme emphasized the value of drawing upon the collective wisdom of different people to achieve personal growth and advance as a team. By leveraging the unique insights of each person, a collaborative approach encourages innovation, creativity, and a deeper understanding of various perspectives.

The in-depth interviews left quite an impression on me. Each of these women came into positions where they felt as if they had little experience, but through relationship building, they

described the development of understanding through conflict and collaboration. Through each interaction, they continued to learn from others' points of view and build new products, programs, and teams. They created collaborative environments by listening more than they spoke and acknowledging different approaches to reach their goals. These experiences and interactions led them to develop their own leadership capacities as well as advance their teams. This theme is illustrated through the stories and images of Capitano and Raven.

Capitano's Story. Capitano has over 22 years of industry experience, is a certified flight instructor, and is a CEO at a major U.S. airline. During her interview, Capitano discussed critical milestones in her leadership development. Currently, and in many of her positions, Capitano has served as a team leader, overseeing both women and men employees. She discussed the transition back to her alma mater in a higher position of employment and the impact of having to oversee former teachers and mentors. In the following excerpt, she describes the power of interactions and how finding different ways to approach decisions through frustrations assisted in her leadership development and how she "shows up" as a leader:

When I went over to the college, I was actually overseeing people that used to be my professors back in college. There was a whole shift of like I thought I was really entering my Alma Mater, this is gonna be great! And it was almost the opposite, where people resented me because I was now overseeing them. It was well 'you don't know, because you were at the airlines and we've been doing this for years.' So, it was a lot of that. But it was actually through those interactions in that experience of overseeing people that were double my age, that the frustration that I felt helped me develop as a leader. It was a different way of handling conflict. It was a different way of approaching decisions. But again, being aware of how I am influencing people, how do I show up every day, not

letting them get to me. All of those things helped me develop as a leader. (Capitano, Interview)

While the swap of roles created tension, conflict, and frustration, it also allowed her to develop as a leader through the interactions of many. Through her stories, she identified leadership development through the formation of ideas as a team and the interplay of influence they have on each other.

Capitano shared multiple examples of experiences that led to advancement by building on the unique insights and interactions of many. It was through daily activities and processes that she felt the most development. Through listening and being present in the day-to-day activities, such as meetings, she was able to understand others' perspectives and work in partnership with other teams to present ideas to her management team. She experienced a collaborative process of building ideas with the input of many to create a shared vision. It was a process that prompted more questions but also encouraged sharing knowledge across the teams:

It's not about always speaking up. It's about listening. And as questions and ideas were brought to me, we had to kinda like, create this plan and present it to the leadership team, and sometimes they push back, sometimes they liked it. Sometimes they didn't like it. They had more questions than answers. It was kind of like not conforming, but building something with the thought process of many. So, it wasn't just my idea, but it was a different way to learn how to work with others, to bring an idea to creation. (Capitano, Interview)

Listening to ideas, learning from others' experiences, and being in constant conversation with her teams allowed her to expand her knowledge, develop through interactions, and advance as a leader:

To me it's growing outside of what we already know and there's some opportunities where that can happen easily. We're highly regulated industry, so it's not like we can just do anything that we want. But what are the different approaches to get to that goal? My idea of something might be different than 10 other people, but that constant conversation around accomplishing that goal and learning from others and others' experiences helps you develop. (Capitano, Interview)

Figure 4.2. Team Meeting



Note: Capitano submitted the above photo after her team completed a routine meeting.

Capitano offered the following reflection through the PHOTO question prompts for the photovoice project:

This picture represents what it's like to be a female in aviation. There are always more men in the room than women. Representation matters and as a female leader, there's a responsibility to bring more women into aviation. It's typical in any meeting that there's only 20%–30% females in the room. I felt this was a good representation of what it's like to be a female in aviation. Most men think the same, act the same, and have the same background. The females that enter aviation usually come with a unique background and are sometimes considered 'unicorns'. Females have a lot to offer and have worked extremely hard to get into a leadership role. I believe this picture shows that more women need to be brought into aviation. That more women need to be exposed to the conversations that are usually managed by men. For more women to fit 'in this circle', more development and advancement of females in aviation need to occur. (Capitano, Photovoice written narrative)

In this reflection, we hear Capitano's call for more women to be included in leadership rooms and conversations. She noted that including women brings in unique perspectives and allows teams to build on the experience of women as well as men. Capitano further described how important it is for females' development and advancement to be in these leadership circles and interactions, to continue to build on the thought process of many.

Raven's Story. Raven has over 22 years of aviation industry experience, is a private pilot, and serves in multiple professional aviation roles including founder, owner, and CEO. Through her in-depth interview, Raven also reinforced the benefits of building on the thought process of many. Raven shared specifically about an opportunity she was given to serve on the Federal Aviation Administration's (FAA) Women in Aviation Advisory Board. She explained:

Serving on the FAA Women in Aviation Advisory Board alongside other women from very diverse backgrounds deepened my perspectives, assisted in understanding the scope of the problem, and expanded my comprehension of the issues. (Raven, Interview)

The opportunity to serve in a leadership position alongside other women in aviation created an opportunity for Raven to expand her understanding of recruiting, retaining, and advancing women in aviation by creating space to hear others' perspectives and learn from their experiences. The increase of views increased her learning and understanding of the barriers that women in aviation face.

In summary, the theme, Building With the Thought Process of Many, highlights the significance of collaborative development by tapping into a diverse range of knowledge and experiences from individuals. This approach underscores the value of collective wisdom for personal growth and team advancement. The data collection involved individual interviews, where participants like Capitano discussed leadership growth through interactions with diverse teams. Such interactions, though initially challenging due to role shifts, fueled her development by refining conflict resolution and leading across boundaries. Capitano's experiences demonstrated the power of embracing varied viewpoints and innovative thinking for effective leadership. By fostering an environment of shared ideas, her team achieved a collaborative process that resulted in a collective vision (Uhl-Bien & Ospina, 2012). The importance of listening, learning, and ongoing conversation was evident in Capitano's leadership journey, wherein constant engagement with her team expanded her understanding and leadership skills.

The interviews also revealed the significance of gender diversity, exemplified by a photo showing the scarcity of women in aviation discussions, emphasizing the need for female perspectives. Another interviewee, Raven, underscored the benefits of collaborative thinking

through her service on the FAA Women in Aviation Advisory Board. These narratives collectively showcased vertical leadership development stages and competencies, such as conflict management and leading across boundaries (Petrie, 2014). Overall, the theme emphasized how collaboration, diverse perspectives, and continuous learning contributed to development and advancement for individuals and teams.

Theme 2: Challenges Increase Capacity for Learning and Leadership

The theme labeled, Challenges Increase Capacity for Learning and Leadership, underscored the connection between facing challenges, personal growth, and effective leadership. It encapsulated the concept of embracing daily challenges with an attitude of curiosity, open-mindedness, and awareness of the potential for development and advancement. By adopting a stance of curiosity, individuals can explore uncharted territories, seek innovative solutions, and cultivate a deeper understanding of complex situations.

Through the interviews and the photovoice project, the participants recognized challenges as a way of increasing capacity for learning and leadership. They approached challenges with a mindset of learning, curiosity, and opportunity for growth. They expressed learning from challenges and failures to become a better leader and to be more prepared for the next event. This theme will be illustrated through the stories and images of Raven and Capitano.

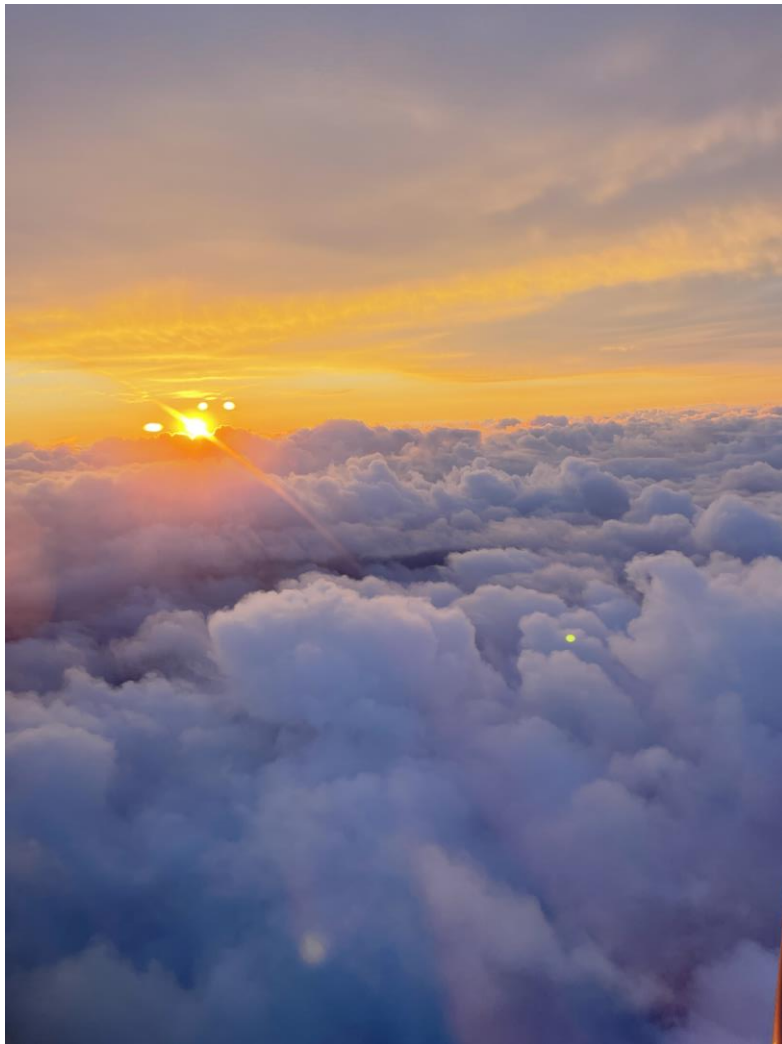
Raven's Story. Raven stated, "I think we learn the most from failures" (Raven, Interview). She shared the experience of taking on the challenge of starting up a charter and providing helicopter shuttle service for a national event. This was something she and her company had never done before, and she wanted to take on the challenge. She went through many challenges throughout the process – some she was able to navigate and others outside of her control. While she lost money and felt like she lost some credibility during this venture, she

learned new operations, such as contract negotiation and mitigating and sharing risks. She credited that challenge as a pivotal leadership development opportunity.

Recently, I used an experience I once considered a failure to set myself up for greater success in a new partnership opportunity. (Raven, Interview)

In Raven's experiences, she shared the importance of challenges to increase learning and self-development. She continued on to express the reward of going through difficult times and failures. Illustrating this theme further, she submitted the following photo and caption as a part of the photovoice data collection:

Figure 4.3. Climbing through the clouds



Note: Raven photo submission

Once you do the hard (and sometimes intimidating) work to climb through the clouds, the reward can be spectacular. (Raven, Photovoice written narrative)

Raven's photovoice written narrative expressed the importance of going through challenging times even if they are daunting, as the reward is that you continue to learn from the trials to reach your goals.

Capitano's Story. Capitano also expressed the importance of learning from challenging experiences in order to develop and push your capabilities.

I do think what's needed is going through rough times, going through the hard parts of aviation. So, when I look back on you know my 20-plus years in the industry, I think I had three pivotal points that that were very, very challenging, and they pushed me... In a way, it's like the more battle wounds you have, the better you're prepared for the next battle. I think I was just reading the other day that when you repeat something like a bad experience over and over in your head, you replay it, you ingrain it in your mind that you now have a plan for how you're not going to let that happen again. I think that that's the most important thing that we can do as leaders is really learn from these experiences. Whether they are small or big, but the more, let's say, more trauma you have, more challenges that you encounter, the more you can learn and the better leader you can be. As long as you don't repeat those things again, you know, like you actually learn from those experiences. (Capitano, Interview)

In summary, the theme, Challenges Increase Capacity for Learning and Leadership, highlights the connection between facing challenges, personal growth, and effective leadership. It emphasizes the idea of embracing daily challenges with curiosity, open-mindedness, and an awareness of their potential for development and advancement. Through interviews and a photovoice project, participants recognized challenges as opportunities to enhance their learning

and leadership skills. They approached challenges with a mindset of learning, curiosity, and the chance for growth, viewing failures as valuable lessons. Examples from participants like Raven and Capitano illustrated how taking on challenges led to significant leadership development. This theme aligns with the concept of vertical leadership development, specifically focusing on competencies such as strategic thinking and leading change (Petrie, 2014). The participants exhibited a long-term perspective and a willingness to navigate uncertainty collaboratively, reflecting a key aspect of vertical development.

Theme 3: Trusting in Self During Times of Uncertainty

Trusting in Self During Times of Uncertainty is a theme that explained the journey of navigating ambiguity, overcoming fear and doubt, and ultimately embracing one's inner strength and capabilities. This theme emphasized the transformative process of building confidence, self-awareness, and resilience through various experiences and challenges. The narratives shared during the interviews and the photovoice project indicated that an experience that leads to advancement was trusting in self during times of uncertainty. They detailed daily events of ambiguity and moving through the uncertainty, fear, and doubt toward trusting in yourself and your capabilities. This theme will be illustrated through the stories and images of Mavis, Raven, and Capitano.

Mavis's Story. Mavis has over 15 years of aviation industry experience, and she is a certified flight instructor and a vice president at a U.S. drone company. One example of trusting in self during times of uncertainty was when Mavis transitioned from being a professional pilot for Part 135 operations, which are commercial aircraft operations like private jet air charters, to working for what was, at that time, a start-up uncrewed aircraft systems¹ (UAS) company. She

¹ Also known as *drones*.

came into a “tech company” that entered the drone space and, while they were very good at their technical expertise, they did not have the aviation knowledge base, such as knowing aviation rules and regulations. She described herself as being the first “aviation person” hired at the drone company. She had never worked with drones before; however, company leaders, including the CEO and COO, were not concerned as she had the aviation expertise they were looking for. Mavis detailed her experience of going into an unknown environment, not knowing what to expect, taking on a daunting task, but knowing she will figure it out:

So, I mean literally, I came into this with, let's say, eyes wide shut. It was like I had no idea what was going on and I'm expecting, you know, like, well, it's okay... (Mavis, Interview)

Mavis encountered a start-up environment in a new technical field. There were (and still are) many unknowns and she accepted the uncertainty and worked through the ambiguity to lead change.

Very few people have stood up a 135, and even fewer people have done it in the drone space. So, you know nobody's an expert in it, and even the people you know, the consultants that we talk to... I will just say that if the preparation for that falls squarely on my shoulders, that is something. It's a daunting task to know that that might come and it's something that I'm gonna have to kind of figure out. (Mavis, Interview)

She admitted to struggling at points with a bit of “imposter syndrome,” but she was also hungry for the development that comes along with going into a new and unknown environment and trusted that she had the capabilities.

Coming into it you kind of have a little bit of almost, you know, we're all guilty at some point of imposter syndrome. I come into it and I'm sitting here thinking like, am I ready

for this? Am I ready for a startup environment in an industry I'm familiar with in a management role, and especially after I have only been back in the game for a year since taking a sabbatical? And so, it was daunting at first, but I was so excited, so hungry for that development and for that challenge. And so, I came in, and I mean I don't think drinking from the fire hose is the best analogy 'cause it was like there's 50 fire hoses.

(Mavis, Interview)

Imposter syndrome is a self-declared feeling of doubt about one's own abilities. Psychologists Pauline Rose Clance and Suzanne Imes developed this concept during their 1978 study focusing on high-achieving women. Women who experience the impostor phenomenon believe they have fooled others into believing they are more intelligent than they are (Clance & Imes, 1978).

Raven's Story. Raven also talked about the experience of imposter syndrome, characterized by feeling intimidated. She described:

Initially, I felt quite intimidated by a group of powerful women I had been invited to join in a leadership role because they had massive organizations while my company had only eight employees. Imposter syndrome was a real challenge for me, making it difficult to voice my thoughts. However, during the board meeting exercises, I began to realize I did have something to contribute. As a small business owner and someone with a journalism background, I brought a distinct perspective to the table, particularly during branding and messaging discussions. Furthermore, I was the sole representative from my sector of aviation, offering a completely different contribution. I won by staying in the room long enough to realize that I didn't need to fall prey to the lies of imposter syndrome. (Raven, Interview)

Her story illustrates the kind of thinking needed to overcome imposter syndrome, as she realized the unique skills and capabilities she brought to the team.

Raven continued to trust in herself as she took on the new challenge of writing a book. She expressed making commitments to self and building resilience. One of the photos she shared was of her signing her book and deciding on the title. Two powerful words of “Stand Up!” Trusting in herself when becoming a CEO, developing new businesses, or writing a book, she did not allow uncertainty, fear, or doubt stop her from standing up.

Figure 4.4. Book Title



Note: Raven photo submission

Landing on a book title is harder than it seems. My editor wanted one word, but “Stand” just didn’t seem to be enough to relay the effort it takes to make it in this industry. Beyond the perseverance of standing, you also need some action, hence the exhortation to “Stand Up”. (Raven, Photovoice written narrative)

Capitano's Story. Capitano shared similar stories of building up confidence through experiences and trusting in herself and her abilities to take on any challenge known or unknown.

To know that you can accomplish this, and it's not going to be perfect. And you're not going, I mean, I didn't feel like I was like the best. And I still on a daily basis, don't feel like I'm the best, but it's but I will be the hardest working one in the room. You know what I mean. I will give it everything that I have, and some days it's gonna be better than others. But it was through transitions and I was very, very young, that confidence grew... It was like knowing that I accomplished that. I feel like anything else I could accomplish that came my way. (Capitano, Interview)

In summary, the theme, Trusting in Self During Times of Uncertainty, captures the transformative journey of individuals navigating ambiguity, conquering fear and doubt, and embracing their inner strength and capabilities. This theme underscores the process of fostering confidence, self-awareness, and resilience through various challenges. Narratives from interviews and a photovoice project illustrate experiences of progressing by trusting in oneself amidst uncertainty. For instance, Mavis transitioned from piloting to working in a drone startup, while Raven overcame imposter syndrome, discovering her unique contributions. Their stories reflect the value of self-trust in facing new challenges. Additionally, Capitano's experiences mirror confidence-building through challenges, highlighting the belief in achieving tasks regardless of perfection. This theme aligns with theories of vertical leadership development, emphasizing competencies like strategic thinking and leading change (Petrie, 2014). The participants' narratives also reveal growth in relational leadership skills, including empathy, self-awareness, and resilience (Uhl-Bien & Ospina, 2012).

Theme 4: Using Everyday Interactions of Leadership and Experiences as

Development

The final theme in the first leg of the journey regarding the experiences leading to advancement was Using Everyday Interactions of Leadership and Experience as Development. This theme reflects the notion that growth and advancement in one's leadership abilities are not solely the result of formal training or isolated events, but rather an accumulation of lessons and insights garnered from everyday interactions and experiences. The narratives comprising this theme revealed that the act of consistently engaging in routine activities (e.g., attending meetings, participating in team discussions, and being actively involved in leadership practices) contribute significantly to personal and professional development. It holds that these seemingly mundane encounters offer valuable opportunities for learning and skill-building, ultimately preparing individuals for future leadership roles and challenges.

In their narratives, the participants shared development experiences through daily activities and interactions with leadership teams and leadership practices. They expressed positively applying each learning experience to build on the next and develop the skills needed for the next opportunity. This theme will be illustrated through the stories and images of Capitano and Raven.

Capitano's Story. Capitano described development through daily interactions with the executive leadership team including going to meetings, building plans together, and being in the presence of the leadership team.

The other side of that professional development leadership training was just through like the natural course of you know, going to meetings. You know, being in the presence of the

executive leadership team at a regional airline and in building a business plan with them and making decisions with them. (Capitano, Interview).

Each experience for Capitano built on the next. She felt like it was through these daily activities and learning from them each day that allowed for her development as a leader.

I would say, to grow and learn every day again. I, you know, over 20 years of experience in the aviation industry. I still don't have all the answers. I think even people that I work with who's who've been in the industry, for whatever 10 more years or 20 more years longer than I have, they don't have the answers. So, I think in a way, we're constantly developing daily... I feel like everything that I've done has led me to the next path through those experiences. (Capitano, Interview).

Raven's Story. Raven also shared her experiences of learning from each experience and using daily activities to develop as a leader. She shared multiple experiences of serving on boards, attending meetings, and being present at conferences for development and advancement in the aviation industry. She highlighted one of those experiences through her photo and caption below:

Figure 4.5. Red Dress



Note: Raven photo submission

As a woman in a male-dominated industry, you can choose to blend in or to stand out. Standing out means more eyes on you (especially if you choose to wear a red dress), but it also means you have more opportunity to be a stand out! (Raven, Photovoice written narrative)

In summary, the theme, Using Everyday Interactions of Leadership and Experience as Development, highlighted the idea that leadership growth and progress are not solely attributed to formal training or isolated incidents, but rather stemmed from accumulating insights through everyday interactions. This theme emphasized that routine engagements like meetings, team discussions, and active participation in leadership activities play a pivotal role in personal and professional advancement. Participants shared narratives of development through daily interactions with leadership teams and practices, with each experience building upon the previous one. This concept draws connections to Dewey's Theory of Experience, highlighting how each encounter influences subsequent ones. Vertical leadership development competencies,

such as leading across boundaries and sharing knowledge (Petrie, 2014), were also evident, fostering relational leadership outcomes and collective achievement within the organization (Uhl-Bien & Ospina, 2012).

As I analyzed the stories of these aviation executives, I saw leadership development as a process with many connections to the interdependent-collaborator stage of vertical leadership development with “more complex and sophisticated ways of thinking” (Petrie, 2014, p. 6). Specifically, some of the experiences presented aligned with the vertical leadership competencies of strategic thinking, leading change, conflict, and leading across boundaries within the vertical stage of interdependent-collaborator (Petrie, 2014). From an entity perspective of relational leadership, there were connections in these findings to leadership skills, processes, and outcomes (Uhl-Bien & Ospina, 2012).

Cruise: Leadership Practices

As my research questions explore the life stories of female aviation executives, sub-question two (RQ2) describes leadership practices of the aviation industry. During the analysis of the participants’ narratives, I focused on the aviation industry practices and actions implemented for growing people. The next three themes aligned with RQ2: (5) *Exposure to New Ideas to Expand and Bridge Perspectives*; (6) *Opportunities to Take on Projects Beyond Current Level of Knowledge*; and (7) *Evolving Knowledge and Skills Through Active Networks and Resources*.

Table 4.2. (RQ2) Leadership Practices of the Aviation Industry

Theme	Description
Theme 5. Exposure to new ideas to expand and bridge perspectives	Expansion of view and thoughts through exposure to new ideas, training, and relationships. Bringing people together to bridge perspectives and using available resources to make decisions.
Theme 6. Opportunities to take on projects beyond current level of knowledge	Given and/or taking on tasks, responsibilities, and positions beyond own self-assessment of experiences and current knowledge. Taking the stretch opportunity to expand knowledge, capabilities, and experience to be a better leader.
Theme 7. Evolving knowledge and skills through active networks and resources	Improved sensemaking and decision-making processes through the use of resources, coaching, and feedback from executive leaders.

Theme 5: Exposure to New Ideas to Expand and Bridge Perspectives

The theme, Exposure to New Ideas to Expand and Bridge Perspectives, revolved around the concept of engaging with diverse and innovative concepts, knowledge, and viewpoints in order to broaden one's horizons, enhance understanding, and foster collaboration. This theme had similarities to the first theme, which also described the importance of gaining insights from multiple viewpoints. However, they differed in the fact that the first leg of the journey (Themes 1–4) highlights individual actions leaders are taking for advancement in aviation, whereas the second leg of the journey (Themes 5–7) applies to the industry leadership practices. Theme 5 outlined the importance of creating opportunities within the aviation industry to promote exposure to new ideas. This theme encompassed a multi-faceted approach that involved the expansion of personal and collective viewpoints through exposure to new ideas, continuous learning, relationship-building, and effective decision-making based on available resources. This theme recognized the inherent value of exposing oneself to a variety of perspectives and ideas. It acknowledged that, by doing so, individuals and groups can break free from narrow thinking patterns and become more receptive to the richness of human thought. Whether through reading,

attending seminars, engaging in thoughtful conversations, or participating in cross-disciplinary collaborations, the pursuit of new ideas serves as a catalyst for intellectual growth.

The participants detailed leadership practices of the aviation industry that included exposure to new ideas to expand and bridge perspectives. They told stories of expanding their views and thoughts through exposure to new ideas, training, and relationships. They also shared about organizational practices that brought people together to bridge perspectives and access resources to make decisions. This theme will be illustrated through the stories and images of Mavis and my personal experiences.

Mavis's Story. Mavis shared her experience of introducing new ideas to leadership and working through them toward a shared vision. She came in with a different background with her professional aviation experience than others at her company, and they had to find ways to bridge their perspectives:

There are definitely times where we're not aligned, and that is probably that can be the biggest challenge in the workspace. You know. What do you do when you and your executive leadership are not aligned, and you know in your heart of hearts that you have the path that is the one? You're saying, this is what we have to do. You've given the guidance, but leadership has made up another decision. And so, the challenge of what do you do? How do you effectively help them to understand where you're coming from in a positive way and be able to communicate that in a way not to lose your job? So, I mean, it's very difficult sometimes... And really, and what I have learned, where I am most effective in my role, is giving them the visual of the big picture and so not just having a conversation. But I mean going as far as making a whole slide deck. Or, you know, writing out the whole document and laying out everything so really being able to yeah,

communicate that big picture idea in a positive way, not letting emotion get in the way and just communicate. (Mavis, Interview)

Mavis experienced getting to create and hire her own team as well. She described the rewarding journey of bringing together people with different backgrounds and developing her team as leaders. Daily exposure to new ideas and to develop new ways of thinking facilitated working together for collective achievement.

Personal Reflections. As a member of the group as well, I shared a photo, Figure 4.6., that I took in 2022 while at an aviation conference. There were approximately 150 people in attendance with five of those being females in aviation. I captured this photo while standing in line for lunch to send to my husband. I remember my heels echoing down the hallway as I walked from session to session and drawing unintentional attention. This photo along with the stories of the female executive experiences inspired my reflection poem at the beginning of this chapter. I reflected on this theme of exposure to new ideas to expand and bridge perspectives in the following lines:

*Trust yourself and your influence,
On your own no longer,*

*See there are allies
Holding the door for us,*

(Dreiling, personal reflection, August 16, 2023)

Figure 4.6. Stepping In



Note: Dreiling photo submission

Each of these professional aviation conferences brings people together from around the world with different views, backgrounds, and training. In these moments, I am reminded that the combination of differences is a much-needed blessing and that the relationships built with women and men strengthen teams and my own personal leadership development. At these conferences, I find allies to include both (a) women who are sharing their experiences, advice, and encouragement and (b) men who are engaged as supporters through mentorship and sponsorship. My reoccurring experience suggests that as we bring together these different perspectives, we increase our views of the world, discover new ways of thinking about leadership, and find ways to bridge differences. Bridging differences includes practices that

create conditions to bring together diverse perspectives while not suppressing difference, but instead using it as an advantage (Uhl-Bien & Ospina, 2012). Mavis's story and my experience reflected that these conditions can be created at conferences as well as in the office.

In summary, the theme, Exposure to New Ideas to Expand and Bridge Perspectives, centers on the significance of engaging with diverse and innovative concepts, knowledge, and viewpoints to broaden horizons, enhance comprehension, and promote collaboration. This approach involves various facets such as continual learning, building relationships, and making informed decisions based on available resources. The theme acknowledges the value of embracing varied perspectives to overcome narrow thinking patterns and embrace the richness of human thought. The aviation industry participants shared their experiences of practicing this theme by expanding their viewpoints through exposure to new ideas, training, and relationships. Mavis exemplified this by integrating her aviation background into her leadership role, working to bridge differences, and communicating effectively with executives. The idea of uniting diverse backgrounds for collective achievement was reinforced through the creation of Mavis's team. The concept of exposure to new ideas and bridging perspectives was also captured in my personal reflection poem, highlighting the importance of allies and the strength of relationships. This theme aligns with leadership theories that emphasize colliding and meshing perspectives to address challenges collectively and achieve shared goals (Uhl-Bien & Ospina, 2012).

Theme 6: Opportunities to Take on Projects Beyond Current Level of Knowledge

The sixth theme, Opportunities to Take on Projects Beyond Current Level of Knowledge, describes experiences of deliberately seeking out or being assigned tasks, responsibilities, and positions that exceeded an individual's perceived level of experience and expertise. This theme was often associated with the notion of taking a stretch opportunity, or a chance to expand one's

knowledge, capabilities, and experiences with the ultimate aim of becoming a more effective and proficient leader. This theme was about pushing one's own boundaries and limitations and recognizing that growth occurs most significantly when faced with unfamiliar challenges. By embracing projects that require learning new skills, gaining fresh insights, and navigating uncharted territories, individuals have the chance to not only broaden their horizons but also enhance their leadership development.

During the analysis of the interviews and photovoice materials submitted, this theme had the largest number of excerpts associated with it. The stories shared indicated that being given or taking on opportunities beyond their own self-assessed knowledge and capabilities was what grew their leadership. They detailed organizational practices of taking on stretch responsibilities, tasks, and positions. They were encouraged to take risks outside of their comfort zones and try things they may have considered as outside of their qualifications. These experiences opened their minds to their capabilities and provided them with opportunities to grow into the roles. This theme will be illustrated through the stories and images of Mavis, Capitano, and Raven.

Mavis's Story. One example Mavis detailed was entering a whole new portion of aviation through uncrewed aircraft systems.

I'd say that really the biggest development was in learning this new aspect of aviation. Which I've grown to love, and never would have pictured myself in, you know, 10 years ago, and also now, you know, I've been set up, you know, seeing their faith in me. They've allowed me to step into a role where I'm helping to mold regulation... They've believed in me and given me that opportunity to set me up on that path... They've said here we believe in you. We want you to do this, and then kind of stepping up to the plate. I think that I see this with a lot of women in this industry, that we step up to the challenge and we meet or

exceed it... The opportunities that I've always been just almost staggered a little bit by is the amount of trust that you know my boss puts in me. It was kind of funny, like my first few weeks at the company he came to the meetings that I was in, and I think he quickly learned how I work. Then he kind of was like go. Some of the opportunities that he'll set me up for with leadership...He was like, 'Hey, do you wanna go?' And I'm like, I'm not gonna say no... No pressure, but it was so great. You know those kinds of little opportunities. I don't know how they view it, but they're huge to me. (Mavis, Interview).

Mavis shared the impact of not only going to meetings with executive leadership but also being given stretch opportunities to build teams, present at conferences, host VIP events, and develop new technology.

Figure 4.7. Advancing Drone Technology



Note: Mavis's photo submission

This is a static display of the Watts PRISM Sky aircraft used for drone deliveries. This drone has been integral to the operation I helped develop at my current company.

Coming to this company and helping set up a department in a relatively new part of the industry, I have been proud to be one of the few female leaders in this space helping shape regulation and future emerging tech concepts. Promoting the UAS and AAM

(Advanced Air Mobility) fields and letting them see that there are numerous experiences beyond just that of legacy aviation that are available to women can help bring more females into this field who may be hesitant because of other constraints, such as being absent from family. There are so many ways that women can still make an impact in this industry outside of the cockpit, specifically in leadership roles! (Mavis, Photovoice written narrative).

Mavis highlighted the significant impact of her involvement in executive meetings and the opportunities she was given, such as team building, conference presentations, VIP event hosting, and technology development. She emphasized her pride in being a female leader in the emerging field of drone deliveries, advocating for greater female representation, showcasing the diverse roles available to women beyond traditional aviation, and creating opportunities to broaden one's knowledge beyond their existing level of understanding.

Capitano's Story. Capitano also shared multiple experiences of development through seeking out opportunities that expanded her knowledge. One example related to her starting a new flight school under time constraints. She was leading all the efforts from marketing, to certifications, to aircraft selection, to human resources processes.

I was fully stretched, but I also I had a little bit to lean on from my prior experience. But it was a lot of Googling, a lot of you know using every source of like phone a friend, you know. In that process, though I learned so much. It pushed me to like my limits of like, I've never done this before. I learned a lot in that process. (Capitano, Interview)

Capitano expressed how this stretch opportunity helped her learn new knowledge and skills in finance, human resources, and aviation regulations as well as pushed her to develop as a leader.

Raven's Story. Raven shared her experience transitioning into the CEO position at her company and the development that came along with it. She expressed not having the educational background or prior experience to know how to run a business. It was a stretch experience she grew into.

Upon becoming a CEO, my role was initially more in name than in practice.

Transitioning into this position came with numerous challenges, especially since it wasn't part of my career plan, and I lacked a business degree. I had to engage in extensive professional development, get comfortable with trial and error, read voraciously, and humble myself regularly. Initially, I was hesitant to ask questions, but I later realized the importance of seeking advice from experienced business owners in various industries.

Over time, I overcame my fear of asking questions, coming from a place of curiosity is a strength. (Raven, Interview)

In summary, the theme, Opportunities to Take on Projects Beyond the Current Level of Knowledge, centers around deliberately seeking out or being assigned tasks that surpass an individual's perceived expertise. This theme involves embracing stretch opportunities to expand knowledge and skills, with the aim of becoming more effective leaders. By venturing into unfamiliar territory and pushing boundaries, individuals foster growth by facing new challenges. The largest number of excerpts were related to this theme, drawn from interviews and photovoice materials, highlighting experiences where individuals exceeded their own expectations and capabilities to enhance their leadership. Examples included embracing stretch responsibilities, taking risks outside comfort zones, and entering new fields. The impact of these opportunities was evident in stories like Mavis's entry into aviation's uncrewed aircraft systems and Capitano's learning journey through seeking out diverse sources. Raven's transition into the

CEO role exemplified growth beyond initial qualifications, aided by learning through experience and questioning. These stories collectively emphasized the importance of venturing beyond one's knowledge limits for leadership development, often facilitated by both personal initiative and organizational practices.

Theme 7: Evolving Knowledge and Skills through Active Networks and Resources

Rounding out the themes for leadership practices in the aviation industry that supported leadership development was the theme, Evolving Knowledge and Skills through Active Networks and Resources. This theme centered around the idea that individuals and organizations can enhance their capabilities, understanding, and decision-making by actively engaging with a dynamic network of resources and connections. This theme emphasized continuous learning, adaptation, and growth, all of which were facilitated by interactions with diverse sources of knowledge, guidance, and support. Through these experiences, the participants felt they improved sensemaking and their decision-making processes through the use of resources, coaching, and feedback from executive leaders. This theme will be illustrated through the stories and images of Raven and Mavis.

Raven's Story. Raven discussed the benefits of having mentors and coaches. She also sought out professional coaching and eventually became a certified business coach as well.

I invested in professional development through reading books and joining an organization called the Women Presidents Organization, which focuses on leadership across industries and generations. In 2015, I started seeking coaching because, despite my apparent success, I struggled with setting and achieving goals. I lacked clarity on what my goals should be and how to pursue them. Through coaching, I received both professional and personal leadership development. After three years in the coaching

program, its founder approached me to become a professional business coach to help others undergo similar transformations. I coached individuals and company leaders across 50 different industries before coaching anyone in aviation. This experience highlighted a significant lack of leadership development within the aviation industry, which I believe could be greatly beneficial. Consequently, I pursued my leadership and professional development outside of the aviation industry due to the limited offerings within it. (Raven, Interview)

Mavis's Story. Mavis also spoke to the value of mentors and coaches. She shared experiences of seeking out feedback from her mentors and supervisors in order to develop her skills and evolve her knowledge base.

It's the feedback items, you know. There's been great feedback and I've also gotten less than great feedback. But I that's like you need it, you know. So, I always tell them, I'm like, you have to be honest with me and tell me if there's something that I can do better.

(Mavis, Interview)

She also discussed building a strong developmental network of leaders through joining aviation organizations and presenting at industry trade conferences. She submitted the following photo and description.

Figure 4.8. Aviation Conference Network



Note: Mavis's photo submission

I am presenting on Advanced Air Mobility at NBAA BACE, as part of a panel with a group of industry professionals. This photo highlights women being given opportunities to discuss innovation within the industry. I am always humbled to be asked to be part of panel discussions or to deliver keynote speeches and feel like there are still too few women being seen in these roles within the aviation industry. I have seen an increase in women on these panels in recent years and hope to see even more at the keynote level. By seeing more women in public speaking opportunities, it becomes normal rather than the

exception. The positive effects of seeing more women in these speaking roles is seen in both changing the existing mindset about women in the industry, but also encouraging future generations to pursue these careers. (Mavis, Photovoice written narrative)

In summary, the theme, Evolving Knowledge and Skills Through Active Networks and Resources, is a crucial aspect of leadership development within the aviation industry. This theme underscores the value of continuous learning and growth by engaging with diverse networks and resources. Participants emphasized the importance of interactions with mentors, coaches, and feedback from executive leaders in enhancing their decision-making processes and sensemaking abilities. Individuals like Raven pursued external professional development, joining multi-industry organizations and seeking coaching to redefine their goals and achieve transformations. Mavis, another participant, highlighted the significance of feedback in skill development and spoke about building a strong network through aviation organizations and industry conferences. Individuals may seek out these developmental approaches from various sources when lacking industry-specific offerings.

Land: Leadership Development

The final leg of the journey, sub-question three (RQ3), explores what the aviation community can learn from the life stories of female aviation executives to build leadership programs to support women in aviation. The three themes identified for RQ3 and rounding out the ten overall themes are described with the following labels: (8) *Intentional Programs and Action to Develop Future Leaders*; (9) *Driven by Life Purpose and Values*; and (10) *Generous Leadership Through Coaching and Mentorship*.

Table 4.3. (RQ3) Building Leadership Programs for Women in Aviation

Theme	Description
Theme 8. Intentional programs and action to develop future leaders	Understand and address challenges women are facing while providing training alongside female and male colleagues to prepare the best future leaders.
Theme 9. Driven by life purpose and values	Recognize people's values to create common understanding for teams and provide opportunities to support values and purpose.
Theme 10. Generous leadership through coaching and mentorship	A focus on developing teams through coaching and mentorship. Prepare teammates to take on new roles and responsibilities, enabling them to reach their goals.

Theme 8: Intentional Programs and Action to Develop Future Leaders

A prevalent message that came from the narratives of the executive leaders was the need for purposeful action to develop future leaders. The theme, Intentional Programs and Action to Develop Future Leaders, revolved around the deliberate and purposeful efforts to cultivate upcoming leaders, with a particular emphasis on understanding and overcoming challenges faced by women in leadership roles while aiming to create an environment where both female and male individuals can receive comprehensive development to become impactful leaders.

The excerpts highlighted for this theme were specific personal experiences shared from their own development from working in aviation and shared as advice for future development. The examples included stories of personal experiences, as well as insights based on their years of experience. They expressed the need to understand and address challenges women are facing and also provide training alongside their colleagues, both female and male, in order to prepare the best future leaders for aviation.

Future leadership development programs need to take into consideration the challenges women face when working in a male-dominated field. The stories illuminated gender-specific challenges (e.g., not being heard) and non-gender-specific challenges (e.g., developing leaders

beyond a checklist mentality). While taking into consideration the challenges, the stories highlighted creating a sense of belonging and joint leadership programs for women and men. This theme will be illustrated through the stories and images of Capitano, Raven, and my personal reflections.

Capitano's Story. While reflecting on her career advancement, Capitano described the challenge of not being heard. She said:

I do feel sometimes that I'm not either taken seriously enough or not heard. ...But I do think that sometimes it's like I'm not taken seriously enough. I guess some type of development around that is needed...I do think I am very much an equal, and that my experience and my reputation provides that leadership for that directness that I need. But there's many times even with students that I feel like they think they can kind of get away with more or sway me. I wonder if it's because I'm a female versus being a male or if I was older would I have as many people questioning or pushing back...So, I think some type of development training around that. (Capitano, Interview)

Capitano shared that no matter how much experience she has on her resume, she has sometimes felt that she was not being heard or taken seriously. She felt like there could be development training for navigating different perspectives and creating conditions for mutual respect.

Working in a global position and with various cultures, she advised that a training for working with different cultures would help develop global aviation leaders.

An area of challenge that Capitano identified that goes beyond barriers specific to women is a part of the culture of aviation related to the approach to training received for various positions, such as a pilot and aviation maintenance professional. Aviation is a highly regulated

and safety-oriented industry, and for each procedure there is a checklist to follow. However, when developing leaders, there is a need to develop beyond a checklist mentality.

As a pilot you tend to go, oh, I know what to do, and you follow the checklist and this is what you're supposed to do. Don't color outside the lines (as a pilot), but as a leader, you have to color outside the lines, you know. We have to approach with different perspectives and with different thought processes. You're affecting a lot of people and a lot of departments when you try to make a decision. (Capitano, Interview).

Capitano described working in complex environments with thousands of moving parts and how it feels like organized chaos. During her MBA classes, she learned about complex adaptive leadership and said she references these concepts daily. She discussed using these concepts to help her communicate more effectively and be a better leader. Capitano highlighted the ability to work in organized chaos and referenced complex adaptive leadership concepts when looking for attributes in the people she hires. She sees the benefit in teaching women and all leaders to develop a complex adaptive leadership mindset and learn how to approach complex issues so people do not feel frantic.

Raven's Story. Raven also discussed creating development experiences for women and the importance of developing leaders together, both women and men.

Developing both females and males as leaders is powerful for everyone. While I'm passionate about fostering female leadership, it's essential not to isolate women in leadership development. If we do, they won't be able to collaborate effectively with men, and men won't learn how to work alongside female leaders more effectively. While many men already work well with female leaders, I believe that improving collaboration benefits everyone. (Raven, Interview)

The discourses surrounding women in aviation raise a fundamental question: Do we need to teach women how to "work with" men, or should we simply expect them to adapt? The answer becomes clear when we consider that, in reality, it is essential to teach men how to work alongside women. As Raven pointed out, creating joint developmental experiences for women and men is of paramount significance. Developing females alongside males is not only empowering for women but also transformative for men. By fostering female leaders alongside their male counterparts, we pave the way for a more inclusive and harmonious aviation industry. While some men may already excel at working with female leaders, it's imperative that everyone learns how to navigate creating conditions for joint leadership development. The goal is not just to empower women, but to foster an environment where women and men can serve as leaders together, making the aviation industry stronger and more resilient as a result.

Personal Reflections. Through my own personal and professional experiences in aviation, I feel very connected to this theme. I took a photo at a Girls in Aviation Day event of my two daughters. When I thought about creating programs for future leaders, I had these two and my son in mind. I imagined an environment that invites and inspires them. An industry they feel they belong in, as it is filled with shared experiences among a diverse team. The culture fosters co-creation, and they achieve success individually and as a team. They are encouraged to take stretch assignments with global teams, and they have leaders supporting their growth process to elevate their development. As the photo states "We can do it!" We have the teams and the tools to create intentional programs and actions to develop future leaders in aviation.

Figure 4.9. We Can Do It



Note: Dreiling photo submission

In summary, the theme, Intentional Programs and Action to Develop Future Leaders, emerged strongly from executive leaders' narratives, highlighting the necessity for purposeful efforts in nurturing upcoming leaders, particularly addressing challenges faced by women in leadership roles. This theme emphasizes the creation of a holistic developmental environment for both female and male individuals to become impactful leaders. The need to understand and address gender-specific barriers within a male-dominated field like aviation was stressed, with references to external resources such as the 2022 Women in Aviation Advisory Board Report for guidance. Personal experiences shared by executive leaders, like Capitano, shed light on challenges related to gender biases and cultural shifts required for leadership development.

Raven advocates for joint development experiences for both genders to promote effective collaboration. The narratives from executives underscored the significance of these practices in shaping intentional leadership development programs and actions for the future. While my research did not fully dive into the barriers women face in aviation, some of the leadership challenges women face in aviation are detailed in Figure 1.1. Additionally, there are current studies such as the 2022 Women in Aviation Advisory Board Report, *Breaking Barriers for Women in Aviation: Flight Plan for the Future*, that can be used as a reference when considering the challenges and barriers for women in aviation and can be used to guide developing programs to support women in aviation.

Theme 9: Driven by Life Purpose and Values

The theme, Driven by Life Purpose and Values, emphasized the importance of recognizing and understanding people's intrinsic values, aligning them with the broader goals of a team or organization, and creating an environment that supports the pursuit of individual and collective purpose. The executives' narratives served as vivid expressions of their life purpose and values. These often unveiled the core motivations that guided their actions and personal and professional life decisions. This led to the theme label, Driven by Life Purpose and Values, and was noted to be a consideration when building future leadership programs for women in aviation. This theme will be illustrated through the stories and images of Mavis, Capitano, and Raven.

Mavis's Story. Mavis shared about navigating her career through being a military wife and being a primary parent to their children and how those purposes and values motivated her to transition from legacy aviation to the drone company she is at today.

I think it's also important to highlight some of the unseen hurdles that we, as women in aviation don't talk about as much. Such as, you know, I'm a military spouse and a

mother. It's harder to keep a traditional aviation career path when you're the primary parent and also the military spouse aspect. So ultimately, you know, I stepped away from flying, from legacy aviation as me and my husband started kind of bouncing all over the country and kind of holding down the home front... (Mavis, Interview)

Each decision Mavis made was in consideration of what was best for her family while still pursuing her passions. She continued to be driven by her values and purpose for life while pursuing professional goals and opportunities. By taking this approach, it led her to new leadership opportunities, while still holding up her values and purpose. In simple terms, in Mavis's experience, she was not limited and continued to have professional success and personal fulfillment.

Figure 4.10. Last Flight Before Motherhood



Note: Mavis's photo submission

This picture was taken by my female chief pilot on my last flight as a corporate pilot before having my daughter. I was 35 weeks pregnant. It is a picture of my last flight before becoming a mother! This photo shows how long I was able to continue flying before having to take a break before the baby came. This picture shows what women in this industry are capable of and represents a pivotal moment in my own career. I see many women who are hesitant to pursue their goals because they think it will conflict with their ability to also have a family. I show this photo to women as a way to illustrate that there are ways to do it all and to never limit yourself. It was a scary experience to step into the unknown of not knowing if I'd go back to flying, but it ended up putting me on an alternate path that inevitably led to leadership opportunities. (Mavis, Photovoice written narrative).

Capitano's Story. Capitano shared finding her own family life balance as she and her husband are both pilots and they were juggling schedules. She had multiple aviation positions along her career journey, some were lateral moves, some were promotions, and some were a step backward with regard to pay. However, at the heart of every decision and transition was her family, and that approach led her on the path to be the person and mom she wants to be.

So, in a way it was like, making sure that my family and my kids were always taken care of right. So, they were my goals. I didn't want to necessarily lead the industry. I mean I do love my job and I love this industry, but with them always as the goal, it's almost like these different opportunities presented themselves. I always felt like I was making the right decision, because those always led to me kind of being that mom that I wanted to be for them. So, it's really focused on that balance where you know unique situations kind of presented themselves. (Capitano, Interview)

In the photovoice project, Capitano captured her professional drive and personal priorities as she balanced the workload of being an executive in aviation.

Figure 4.11. Work/Life Balance



Note: Capitano photo submission

As a female leader, I'm often up early on the weekends to catch up on emails. There's never enough time during the week to read through and respond to emails. This is somewhat relaxing both physically and mentally to sit out back early mornings to catch up on work. Because this is the reality of life as a female leader in aviation. There's never enough time during the week to accomplish everything we need to accomplish. To keep a work/life balance, I must get up early morning on the weekends to catch up on emails without taking away from family time. I believe this shows the viewer that I've

learned how to catch up with work without throwing the work/life balance off. I try to keep a focus on my family during the weekends which is why I'm up early on the weekends catching up on emails. Once everyone gets up, the laptop goes away. Adding the work/life balance discussion to support the development of leaders and the advancement of females would be a benefit. This is something that is hard to manage but I do think it more attainable with more experience. When work/life balance is not achieved, women will leave the aviation industry. (Capitano, Photovoice written narrative)

Raven's Story. Raven also shared her motivation of values in connection with her professional drive. She found that values can be a way of connecting teams, finding common ground, and motivating people. She shared an experience she had with one of her clients at an off-site leadership retreat.

We talked about values, and we found the things that we had in common. We talked about a future could look like for this team, and we developed goals around that. So, I think, having the deep strategic communications that are inclusive, that create a shared and jointly developed sense of belonging are really important...I need to understand what's best for the people who work for me and what they're what they've value and what motivates them. Because if my people are highly motivated by recognition, praise, and autonomy, then giving them a 10% raise isn't going to make them work harder. (Raven, Interview).

In summary, the theme, Driven by Life Purpose and Values, emphasizes the significance of understanding individuals' intrinsic values, aligning them with larger organizational goals, and establishing an environment conducive to pursuing personal and collective purpose. This theme

emerged from executives' narratives, unveiling how their life purpose and values propelled their decisions and actions. For instance, Mavis, a military spouse and parent, transitioned from legacy aviation to drones, prioritizing family while pursuing passions. Capitano similarly balanced family and aviation career, making decisions centered on her family's well-being. As a female leader, she managed work/life balance through early weekend emails. Raven highlighted how shared values unite teams and motivate members toward collective achievement. Overall, these narratives illuminated the interplay between values, practices, and outcomes, reinforcing the role of values in guiding actions and shaping organizational success.

Theme 10: Generous Leadership through Coaching and Mentorship

As the executives considered their experiences, they looked to apply their lessons learned regarding practices that foster development of future women in aviation leaders. The theme, Generous Leadership Through Coaching and Mentorship, emphasized the importance of providing ongoing guidance, constructive feedback, and opportunities for skill-building to enable team members to excel and take on increasingly complex responsibilities. They identified a need for generous leadership and cultivating growth and success through coaching and mentorship. This included grooming team members to step into elevated positions by providing guidance, support, and opportunities for development. This approach involved enabling the entire team on the leadership journey and inspiring team members to excel in their positions and become leaders themselves. This approach fosters an environment where each individual thrives and creates more accomplished teams. This theme will be illustrated through the stories and images of Raven and Capitano.

Raven's Story. Raven provided examples through the stock photo she submitted through the data collection process.

Figure 4.12. Birds in a Flock



Note: Raven photo submission

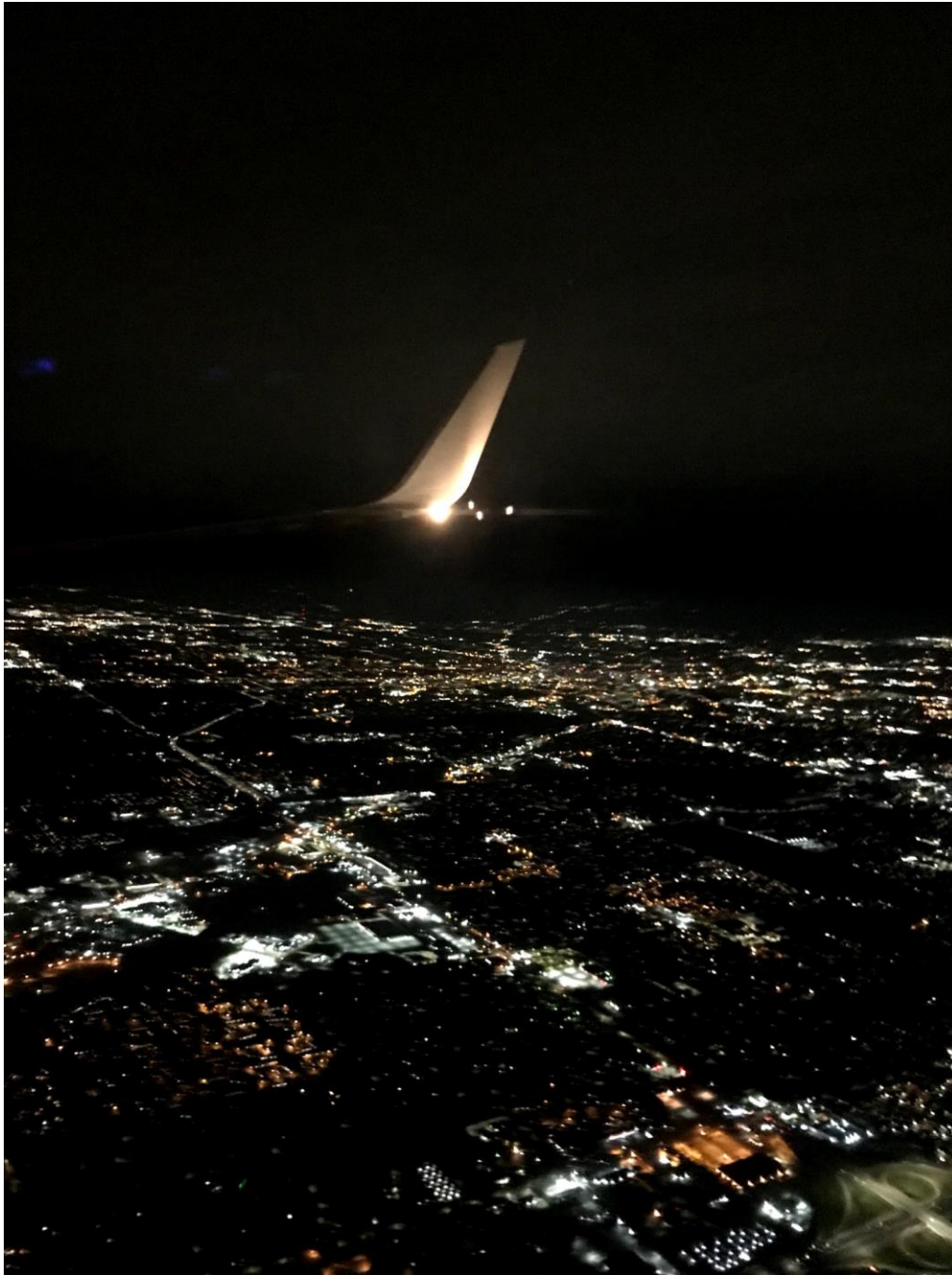
Finding others going in the same direction means you can go further, faster. It's important to have good like-minded peers, advocates, and mentors. (Raven, photovoice written narrative)

She also shared more during her interview on the needs of the industry to develop generous leaders where people are supported in their career journey.

Aviation has survived a long time on a “my way or the highway” mentality. But as the talent pipeline is shrinking, a new era of leadership may yield better results. Humble, curious, and emotionally intelligent leaders build better, run more profitable, safer, and more innovative companies. Their employees are more engaged, more likely to turn down higher-paying jobs elsewhere, and more likely to recruit other high-achievers to work with them. (Raven, Interview)

Capitano's Story. Capitano also shared a photo illustrating the connectedness of the aviation community. She described a world of opportunities; however, while we are connected, there needs to be broader support for developing future leaders in aviation.

Figure 4.13. All Connected



Note: Capitano photo submission

Sitting in the back of an aircraft on a night flight, I snapped a photo of my favorite view – flying over the city lights at night. I was a passenger on this flight, which was a business flight, and we took off out of Orlando at night. Looking down at all the lights is my most

favorite view as a pilot and a passenger. There's a world of opportunities out there and there's so much to do and so much to see. Being in an aircraft at night highlights that there is so much around us. Aviation keeps us all connected and you can really see that at night. I think whether you are a female or a male, this picture tells me that I should not give up that there is a world of possibilities out there. I think this picture provides a glimpse of all the opportunities that exist. That sometimes we think very narrow about development and advancement. We should expand our thoughts and ideas to create more opportunities for others. (Capitano, Photovoice written narrative)

In summary, the theme, Generous Leadership Through Coaching and Mentorship, calls attention to the significance of providing continuous guidance, constructive feedback, and skill-building opportunities to foster the growth of future women leaders in aviation. The executives recognized the need for nurturing leadership that cultivates success through coaching and mentoring, preparing team members for higher roles by offering support and developmental prospects. This approach aims to inspire and empower the entire team, fostering an environment where individuals thrive, resulting in more accomplished teams. Raven highlighted the importance of supportive peers, advocates, and mentors in propelling one's progress. She discussed the necessity for humility in leadership to reshape the industry's landscape and create meaningful shifts. The concept of connectedness within the aviation community was illustrated by Capitano's photo of city lights from an aircraft, showcasing the world of possibilities that aviation offers and creating opportunities for others. These practices align with vertical leadership development, specifically conditions for elevated sensemaking (Petrie, 2015).

Chapter 5 - Summary, Discussion, & Recommendations

In Chapter 5, I apply the findings to practice. I present a summary, conclusion, and recommendations of my findings in relation to the existing literature and to the aviation industry. My primary audience for this research is the aviation industry, including aviation companies, aviation trade organizations, and the Federal Aviation Administration. With these audiences in mind, my process was focused more on practice and results (Creswell, 2007). Additionally, to address the aviation industry as my audience, during my discussion of the findings in the conclusion and recommendations, I intentionally connect the results to relatable industry terms and concepts with vibrant titles (Creswell, 2007).

Summary

The research presented in this study focused on understanding and illustrating the leadership development perspectives and experiences of female aviation executives during their career progression. The study aimed to address the lack of comprehensive understanding regarding the leadership development experiences of female aviation executives. It sought to uncover the factors that contribute to their career advancement, shed light on the leadership practices within the aviation industry, and provide insights for building effective leadership programs to support women in aviation. The research employed an arts-based narrative approach, allowing participants to express their narratives through visual arts-based methods and narrative text. The data collection involved semi-structured interviews, photo elicitations, and narrative responses. The findings were co-created through these methods and then analyzed using coding techniques. The study also combined constructionist and entitative leadership perspectives to explore both individual characteristics and social practices that contribute to

leadership development. I developed my research questions to explore the life stories of female aviation executives. As I approached this research through narrative inquiry, I shaped the questions to encourage in-depth descriptions, explore processes, and discover meanings in the experiences through the stories shared (Kim, 2016). The overarching question is woven through the specific sub-questions.

With my participants, I identified ten themes that respond to the research questions and provided insights into the experiences of female aviation executives:

1. Building with the thought process of many: Advancement is achieved through learning from the experiences of others, contributing to individual and collective growth.
2. Challenges increase capacity for learning and leadership: Embracing challenges as opportunities for growth, learning, and preparation for future leadership roles.
3. Trusting in self during times of uncertainty: Navigating ambiguity and self-doubt to develop confidence, self-awareness, and resilience.
4. Using everyday interactions for development: Leveraging daily leadership interactions and experiences to continuously develop skills and readiness for future opportunities.
5. Exposure to new ideas to expand and bridge perspectives: Expanding viewpoints through exposure to new ideas, training, and fostering relationships to make well-informed decisions.
6. Opportunities to take on projects beyond current knowledge: Stepping into roles and responsibilities that challenge existing capabilities, leading to expanded knowledge and experience.

7. Evolving knowledge and skills through active networks and resources: Utilizing resources, coaching, and feedback from executive leaders to enhance decision-making processes.
8. Intentional programs and action for developing future leaders: Addressing challenges faced by women and providing targeted training alongside colleagues to prepare future leaders.
9. Driven by life purpose and values: Recognizing and supporting individual and team values to create a shared sense of purpose.
10. Generous leadership through coaching and mentorship: Focusing on team development through coaching and mentorship, facilitating the achievement of goals and new responsibilities.

In summary, this research shed light on the experiences and perspectives of female aviation executives in terms of leadership development. It offered insights into the factors that contribute to their career progression, the practices that shape the aviation industry's leadership landscape, and recommendations for designing effective leadership programs for women in aviation. The arts-based approach and dual leadership perspectives provide a comprehensive understanding of both individual attributes and social practices that contribute to leadership development.

Conclusions

The research findings illuminated the dynamic and multifaceted nature of leadership development, highlighting that leadership development spans a continuous journey and happens through personal actions, industry practices, and through training opportunities. Instead of being limited to formal training programs or occasional events, leadership development was observed

to permeate daily life, personal choices, and industry practices. Those on their leadership journey actively pursued self-improvement through actions such as seeking feedback, embracing challenges, managing uncertainty, and being engaged in daily leadership interactions. Notably, the study underscored the critical role of formal training opportunities as pivotal catalysts for leadership development, enhancing the ongoing learning derived from personal actions and industry practices. These findings underscore that effective leadership development is an enduring, holistic process, signifying an unwavering commitment to self-improvement and an acknowledgment that leadership is an ever-evolving expedition. This comprehensive approach encompasses (a) personal actions like collaborative learning, embracing challenges, and trusting oneself; (b) leadership practices, such as exposure to new ideas, taking on unfamiliar projects, and utilizing networks and resources effectively; and (c) structured leadership training initiatives, including intentional programs, alignment with values, and generous leadership through coaching and mentorship.

The findings were presented in a narrative structure mirroring a flight journey in three legs. The practices in Leg 1 told a story of personal leadership actions for advancement in aviation. Each of the participants' narratives outlined actions they took to develop as leaders and advance in aviation. For example, Capitano's experience illustrated how daily interactions and involvement with leadership teams contributed to personal and professional development. Attending meetings, collaborating on business plans, and making decisions with the executive leadership team were integral to her growth as a leader. She recognized that (a) even after more than 20 years in the aviation industry, there was always something new to learn, and (b) building on the thought process of many leads to broader development. Her willingness to engage in

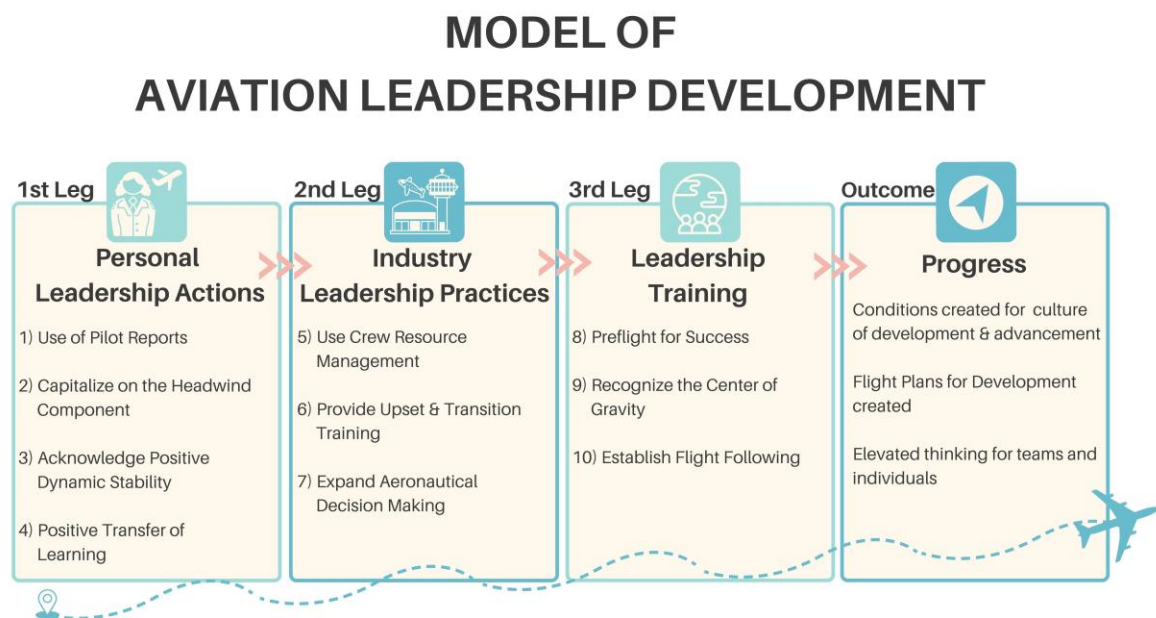
everyday activities and extract lessons from them reflects a commitment to ongoing development.

Additionally, Raven's narrative emphasized the idea that standing out and actively seeking challenges can lead to advancement. Her photo of the red dress symbolized the choice to be visible and distinct in a male-dominated industry. By serving on boards, writing a book, and actively engaging in conferences, she not only showcased her presence but also seized opportunities to be a standout leader. Raven's experiences demonstrated how consistent engagement and trusting in yourself can help individuals build their reputation, expand their network, and create opportunities for growth.

Furthermore, Mavis's story highlighted her ability to embrace the unknown and develop her leadership in an entirely new field. Her transition from a seasoned professional pilot to a role in a startup UAS company was a significant leap into uncharted territory. She accepted the unknowns, took on a new and challenging role in an unfamiliar field, and leveraged her aviation expertise to lead change within the drone industry. Her willingness to confront ambiguity and imposter syndrome, coupled with her hunger for development, showcased her remarkable resilience and self-belief as she ventured into uncharted territory, leading to her personal growth and advancement in her leadership journey.

Figure 5.1 proposes a model of aviation leadership development derived from the study's findings and translates the 10 themes (leadership practices) to related aviation practices. The model seeks to illustrate how practices in the aviation industry can also serve as sources and sites of leadership development practices. A broader table detailing the relationship between the aviation practices, themes, descriptions, codes, and examples from the narratives can be found in Appendix D.

Figure 5.1. A Proposed Model of Aviation Leadership Development



Application Leg 1: Personal Leadership Actions

The first stage of the model informing aviation leadership development integrates several key personal leadership actions that draw insights from aviation practices. These actions are metaphorically aligned with aviation practices to offer valuable leadership insights to the aviation industry.

Practice 1: Use of Pilot Reports (PIREPs)

In aviation, PIREPs are reports submitted by pilots regarding in-flight weather conditions and aircraft performance. As a leadership development practice, the concept of PIREPs translates to the importance of gathering and utilizing feedback from team members or colleagues. Effective leaders actively seek input, listen to concerns, and leverage feedback to make informed decisions. This action encourages an open and collaborative environment, fostering trust and communication.

Practice 1, the *Use of Pilot Reports*, connects with Theme 1, *Building on the Thought Process of Many*. The life stories of participants' experiences that led to advancement reflected vertical leadership development in the stage of interdependent-collaborator (Petrie, 2014). The narratives illustrated competencies consistent with this stage, specifically conflict and leading across boundaries (Petrie, 2014). For example, Capitano shared stories of handling conflict that resulted in increased performance for her team, as well as personal development. Also presented were threads of leading across boundaries, to share knowledge and see from others' perspectives leading to an increase in their understanding (Petrie, 2014). Additionally, the stories highlighted relational interactions that amplified leadership and sensemaking, which could be described as collaborative and dynamic through a relational leadership process lens (Uhl-Bien & Ospina, 2012).

Practice 2: Capitalize on the Headwind Component

Practice 2, the *Capitalize on the Headwind Component*, connects with Theme 2, *Challenges Increase Capacity for Learning and Leadership*. In aviation, the headwind component refers to the force opposing an aircraft's forward motion. In leadership development, capitalizing on the headwind component involves embracing challenges and adversities as opportunities for growth. Strong leaders navigate obstacles by adapting strategies and fostering resilience. Just as pilots adjust their flight paths to optimize fuel efficiency against headwinds, effective leaders leverage difficulties to steer their teams toward success.

This conceptualization of capitalizing on the headwind component aligns with and is supported by the literature. Similar to the theoretical connections in the first theme, there were examples of vertical leadership development in the stage of interdependent-collaborator (Petrie, 2014). Practice 2 is situated within a theme in which challenges are understood to increase

capacity for learning and leadership, and the vertical leadership competencies that resonated throughout the narratives were (a) strategic thinking and (b) leading change (Petrie, 2014). All the participants encountered what Petrie described as heat experiences, which are conditions for vertical leadership development. They had a long-term view in mind and were accepting of uncertainty. They worked through collaborative processes to overcome and learn from challenges. As a vertical leadership practice, these can be related to heat experiences as a primary condition of vertical development (Petrie, 2015).

Practice 3: Acknowledge Positive Dynamic Stability

Practice 3, *Acknowledge Positive Dynamic Stability*, connects with Theme 3, *Trusting in Self During Times of Uncertainty*. Positive dynamic stability in aviation signifies an aircraft's tendency to return to its original state after experiencing external disturbances. Just as aviation relies on an aircraft's positive dynamic stability, effective leadership thrives on the ability to trust oneself in uncertain times. This parallels the journey of navigating ambiguity, progressing from initial uncertainty, fear, and doubt to ultimately placing confidence in your capabilities. Each experience becomes a stepping stone, cultivating not only confidence but also self-awareness and resilience. Just as an aircraft naturally returns to equilibrium, a strong leader's unwavering self-trust leads the way through the turbulence of ambiguity. In leadership, acknowledging positive dynamic stability entails (a) recognizing and celebrating achievements and milestones and (b) fostering a culture of continuous improvement. Effective leaders acknowledge successes and encourage their teams to build upon their strengths, contributing to a stable and thriving organizational environment.

Examples of vertical leadership development in the stage of interdependent-collaborator (Petrie, 2014) continued in this theme of trusting in self during times of uncertainty. Once again,

the vertical leadership competencies that echoed in the stories were strategic thinking and leading change (Petrie, 2014, p.11). Participants shared experiences of resiliency during transitions by trusting in themselves. They attributed their development to each experience of self-awareness during uncertainty. Furthermore, their narratives detailed relational leadership skills improving their leadership practices to include empathy, self-awareness, self-regulation, humility, and resilience (Uhl-Bien & Ospina, 2012).

Practice 4: Positive Transfer of Learning

Practice 4, the *Positive Transfer of Learning*, connects with Theme 4, *Using Everyday Interactions of Leadership and Experiences as Development*. In aviation training, the positive transfer of learning involves applying skills and knowledge from one context to another. In leadership development, this action encourages leaders to share their experiences and insights across different scenarios, fostering cross-functional growth. Just as a pilot's training transfers across various aircraft types, effective leaders draw on their skills to guide teams through diverse challenges, promoting versatility and adaptability.

Throughout this narrative inquiry study, there are strong connections to Dewey's theory of experience. Each experience influences the next and each experience builds on the prior experience. During each of the stories shared in this study, participants related how each experience led to the next and impacted their leadership development. Also employed were vertical leadership competencies of leading across boundaries, and sharing knowledge across boundaries (Petrie, 2014). They were trusting of their teams, and by going to daily activities, such as meetings, they were able to work to understand others' perspectives and work in partnership. In these practices, they experienced relational leadership outcomes in which the

organization created conditions for collective achievement and shared accountability (Uhl-Bien & Ospina, 2012).

The model that integrates these aviation-inspired leadership actions emphasizes the significance of communication, adaptability, self-trust, and knowledge transfer. By embracing the principles of pilot reports, capitalizing on challenges, navigating ambiguity, and promoting learning transfer, leaders can develop a holistic approach that guides their teams toward success while fostering a culture of collaboration and growth. The themes revealed relational leadership from an entity viewpoint of leadership skills, behaviors, and attitudes. From a more constructionist perspective, the themes highlighted leadership practices and activities that build leadership capacity (Uhl-Bien & Ospina, 2012). The findings also revealed threads to vertical leadership development and organizational ways of growing people (Petrie, 2014).

Application Leg 2: Industry Leadership Practices

The aviation industry places a strong emphasis on safety, efficiency, and effective leadership. To cultivate these qualities in aviation leadership development, the industry can employ a framework that integrates industry leadership practices. These practices create an environment conducive to leadership growth, which includes the implementation of crew resource management (CRM), upset and transition training, and the expansion of aeronautical decision making (ADM).

As I examined the stories of these aviation executives, I found there was a strong relation to the conditions for vertical leadership development, such as colliding perspective, heat experiences, and elevated sensemaking (Petrie, 2015). The experiences shared indicated conditions for vertical development and specific approaches aviation organizations took to create these developmental opportunities. While I did not explore the combination of all three vertical

conditions together in each event in this study, the stories revealed elements of each of these conditions existing in aviation practices that resulted in growth for the executives. Additionally, through relational models of leadership, organizations created opportunities for co-constructed outcomes, collective achievement, and shared accountability (Uhl-Bien & Ospina, 2012).

Practice 5: Use Crew Resource Management (CRM)

Practice 5, the *Use Crew Resource Management*, connects with Theme 5, *Exposure to New Ideas to Expand and Bridge Perspectives*. In aviation, CRM emphasizes effective communication, teamwork, and situational awareness among crews to enhance safety and expand effective decision-making. Applied to leadership development, the concept of CRM underscores the importance of fostering diverse thoughts, collaboration, and open communication. Effective leaders encourage diverse perspectives, engage in active listening, and facilitate constructive discussions. By leveraging the strengths of team members, leaders can make well-informed decisions and create an environment of mutual respect and trust. By applying CRM principles, leaders learn to collaborate, share responsibilities, and make informed decisions as a team. CRM encourages leaders to actively listen, provide constructive feedback, and address concerns, thereby promoting a culture of continuous improvement and learning.

Within this theme and practice, there are connections to the vertical leadership practice of colliding perspectives as leaders work through challenges that come with considering alternative viewpoints (Petrie, 2015). Through the relational practice of meshing perspectives, these developmental opportunities created conditions for co-constructed outcomes, collective achievement, and shared accountability (Uhl-Bien & Ospina, 2012).

Practice 6: Provide Upset and Transition Training

Practice 6, *Provide Upset and Transition Training*, connects with Theme 6, *Opportunities to Take on Projects Beyond Current Level of Knowledge*. Upset training involves simulating extreme flight conditions, such as stalls, spins, and unexpected turbulence. This training equips leaders with the skills to maintain control, prevent panic, and lead the crew during high-stress scenarios. By experiencing and learning to manage these situations, leaders develop the confidence and resilience required to handle crises effectively. Upset training contributes to a leader's ability to stay composed under pressure, make sound decisions, and maintain the safety of the flight. In leadership, this translates to preparing leaders and team members for unforeseen challenges and changes. Effective leaders provide the necessary resources and support to develop skills that enable quick adaptation during transitions and crises. By offering targeted training and guidance, leaders equip their teams to navigate turbulence and maintain stability. Similar to aviation's approach of providing upset training for unexpected situations, effective leadership involves giving and/or assuming tasks, responsibilities, and roles that surpass one's self-assessed experiences and current knowledge. This mirrors the concept of stretch opportunities, where leaders take on challenges that expand their expertise, capabilities, and experience to enhance their leadership abilities. Just as pilots receive training to adapt to different flight phases, leaders embrace new roles to enrich their skill set and become more adept at navigating complex situations. This proactive approach to growth fosters continuous learning and equips leaders to steer their teams with confidence and competence.

Throughout each of the stories, the executives gave example after example of taking on projects beyond their current level of knowledge to develop as leaders. In some situations, they actively sought out these experiences and, in others, they were given the opportunity by their

company and their supervisors for experiences beyond their current roles. Organizational practices where heat experiences (Petrie, 2015) were introduced led to professional development as well as, in some cases, advancement in positions.

Practice 7: Expand Aeronautical Decision Making

Practice 7, *Expand Aeronautical Decision Making*, connects with Theme 7, *Evolving Knowledge and Skills through Active Networks and Resources*. Aeronautical decision making (ADM) involves making sound judgments during flight operations to ensure safety. Applied to leadership development, ADM highlights the importance of well-informed decision-making based on available data and critical thinking. Effective leaders encourage a structured decision-making process, considering various options and potential outcomes. This action fosters a culture of informed risk-taking, where leaders and teams collectively assess risks and make choices that align with the organization's goals. By honing these skills, aviation leaders are better equipped to navigate complex scenarios and lead their teams in making optimal decisions. Much like the aviation industry's emphasis on ADM, effective leadership involves honing improved sensemaking and decision-making processes. This is achieved by leveraging available resources, seeking guidance through coaching, and actively embracing feedback from executive leaders. Just as pilots carefully analyze data to make informed choices during flight operations, leaders draw from a well-rounded pool of insights to make decisions that are well-aligned with organizational goals. By integrating coaching and feedback, leaders enhance their ability to navigate complex situations, fostering a culture of continuous improvement and strategic thinking.

Similar to the other theory connections regarding the leadership practices of the industry, I found there was a strong relation to vertical leadership development practices (Petrie, 2015).

The theme of evolving knowledge and skills related to the approaches taken both by the organizations and by the participants to seek out these practices for elevated sensemaking (Petrie, 2015) through other industries as well when they could not find the developmental practices within the industry.

By integrating these aviation industry leadership practices, the model creates a framework that promotes effective leadership development. Incorporating CRM principles cultivated teamwork and communication skills while providing upset training and transition training ensured readiness for unforeseen challenges and provided opportunities to expand knowledge, capabilities, and experience. Expanding ADM principles reinforces the importance of evolving knowledge and skills through active networks and resources. Together, these industry practices help develop leaders by creating conditions for development and advancement.

Application Leg 3: Leadership Training

Practice 8: Preflight for Success

Practice 8, *Preflight for Success*, connects with Theme 8, *Intentional Programs and Action to Develop Future Leaders*. The aviation leadership training incorporates a strategic approach called preflight for success. This approach not only draws parallels with preflight activities in aviation but also offers opportunities for leadership development by emphasizing proactive planning and foresight. Much like a pilot who meticulously assesses weather forecasts to ensure a safe flight, leaders who are engaged in preflight for success focus on planning for the future. This involves studying trends, analyzing data, and forecasting potential challenges and opportunities. Leaders proactively gather information, evaluate dynamics, and anticipate changes in the aviation industry. By doing so, they can make informed decisions that steer their organizations towards success, much like a pilot charts a course to navigate safely. Part of the

preflight planning includes finding your true heading. Setting the true heading with intentional programs and inclusive growth encompasses a multifaceted approach to aviation leadership development. This approach involves not only charting a course but also addressing gender-specific challenges while fostering collaborative learning between female and male colleagues to shape the next generation of leaders.

Just as a skilled navigator plots a course with precision, leadership development employs intentional programs to guide aspiring leaders. These programs are carefully designed to cultivate key skills, values, and experiences needed for effective leadership. By providing tailored guidance and mentorship, organizations ensure that their future leaders are equipped to steer their teams toward success. Additionally, navigating the leadership landscape involves recognizing and addressing the distinct challenges faced by women in leadership roles. By acknowledging these challenges and creating an environment of empathy and support, organizations empower women to overcome obstacles and reach their full potential. This commitment to equality ensures that leadership opportunities are accessible to all, regardless of gender. Much like a flight crew working together to ensure a safe journey, leadership training benefits from the collaboration of diverse talents. By fostering an environment where female and male colleagues train side by side, organizations promote inclusive leadership development. This not only bridges gender gaps but also enriches the leadership experience with a variety of perspectives and insights. By acknowledging and addressing gender-specific challenges while fostering collaboration between all colleagues, organizations ensure that the next generation of leaders is well-prepared, diverse, and poised to soar to new heights.

Through the stories, examples of practices that bring together teams for joint work and development were apparent. This connects to relational leadership practices that social change

organizations implement toward strategic action, such as bridging difference and unleashing human energies (Uhl-Bien & Ospina, 2012). Bridging difference involves practices that create conditions to bring together multiple voices for joint achievement while respecting differences (Uhl-Bien & Ospina, 2012). Unleashing human energies includes creating the conditions for transformational learning, allowing people to acknowledge their power and realize they can become leaders. The executives' narratives support the need for practices that create these conditions when developing intentional programs and actions to develop future leaders.

Preflight for success is a fundamental component of aviation leadership development. By emphasizing strategic planning, forecasting, and finding the true heading, leaders ensure that their organizations are well-prepared for the future. Just as a pilot looks ahead to avoid unexpected turbulence or obstacles, leaders practicing preflight for success consistently look ahead in their business environment. They remain vigilant and anticipate challenges before they arise. This proactive approach minimizes the element of surprise and allows leaders to respond with agility and preparedness. By staying ahead of the curve, they can guide their teams through potential disruptions and seize emerging opportunities. This approach encourages the development of intentional leadership programs with proactive decision-making and leads to more successful and resilient leadership in the dynamic aviation industry.

Practice 9: Recognize the Center of Gravity

Practice 9, *Recognize the Center of Gravity*, connects with Theme 9, *Driven by Life Purpose and Values*. Recognizing the center of gravity encapsulates an aviation leadership development approach that not only identifies the central elements of effective leadership but also places emphasis on individuals' life purpose and values. It acknowledges that every professional decision made by individuals is a manifestation of their values, contributing to the

equilibrium of their personal and professional lives. Leaders acknowledge that individuals' values drive their actions and decisions, impacting their contributions to the team and organization. By aligning professional choices with personal values, leaders create a work environment that is not only cohesive but also fulfilling and purpose-driven. This approach involves recognizing and honoring people's values to cultivate a shared understanding within teams and offering avenues to reinforce these values and purpose.

Similar to understanding an aircraft's center of gravity for balance, leadership development centers around nurturing individuals' life purpose and values. This practice involves recognizing that each team member brings their unique set of values to the table. Leaders aim to understand and appreciate these values, which serve as the core essence of individuals' motivations and aspirations. Just as an aircraft's stability depends on a balanced center of gravity, teams thrive when leadership aligns with the core essence of each individual.

In aviation, successful teamwork hinges on clear communication and shared goals. Leaders facilitate open discussions about values, encouraging team members to express their perspectives and viewpoints. This shared understanding serves as the foundation for collaboration, where individuals unite around a collective purpose, similar to how a flight crew works in harmony to achieve a safe and successful flight. Just as pilots navigate toward a destination, leaders navigate their teams toward success. This includes providing opportunities that support individuals' values and purpose. By creating an environment where values are respected and purpose is nurtured, leaders empower team members to contribute meaningfully and authentically. This approach enhances engagement, as team members feel that their personal values are aligned with the team's objectives. By acknowledging individuals' life purpose and

values, fostering a shared understanding, and providing opportunities that reinforce these values, leaders create a cohesive team that soars toward success with a sense of purpose and unity.

Recognizing the center of gravity entails fostering an environment where individuals can authentically integrate their values into their roles. This harmony between personal and professional realms enhances job satisfaction and overall well-being, resulting in a team that is not only effective but also fulfilled. By acknowledging the profound connection between individuals' values and their decisions, leaders create an environment that respects personal authenticity, encourages purpose-driven actions, and ultimately propels teams to achieve success with a deep sense of harmony and fulfillment.

The participants' stories revealed the interconnection between values, practices, and outcomes. Organizational values guide practices, and practices shape outcomes. Fostering relational activities that facilitate open and transparent connections, in turn, leads to collective achievement (Uhl-Bien & Ospina, 2012).

Practice 10: Establish Flight Following

Practice 10, *Establish Flight Following*, connects with Theme 10, *Generous Leadership through Coaching and Mentorship*. Flight following is the practice of continuous communication between an aircraft and air traffic control. Likewise, establishing flight following in leadership development involves maintaining an open channel of communication between leaders and their teams. Leaders provide consistent feedback, guidance, and support, similar to air traffic controllers guiding a flight's progress. By nurturing individual growth, addressing challenges, and fostering a culture of learning, leaders ensure that their team's trajectory remains aligned with organizational goals. This approach results in a workforce that is adaptable, responsive, and ready to navigate any leadership landscape. This strategy not only involves setting a course but

also embraces generous leadership practices, which encompass coaching and mentorship. These practices revolve around nurturing teams for growth, equipping team members to assume novel responsibilities, and empowering them to achieve their aspirations.

Leaders dedicate their time and expertise to coach and mentor team members, arming them with the skills and confidence needed to embrace new roles and responsibilities. This proactive approach empowers team members to navigate unfamiliar territory with assurance and competence. By prioritizing coaching and mentorship, leaders create an environment of growth, equip team members for new horizons, and empower them to elevate their aspirations. Just as a flight follows a guided trajectory to its destination, leaders guide their teams toward achievement, driven by the principles of generous leadership.

In the ever-changing skies of leadership development, these opportunities offer a flight plan for growth. Preflight for success leads leaders to an authentic and inspiring leadership style. Recognizing the center of gravity ensures a balanced and cohesive team. Establishing flight following facilitates ongoing development and alignment. By embracing these concepts, leaders navigate the complex skies of leadership with clarity, grace, and the potential to reach new altitudes of success.

When addressing the final research question of learning from the aviation executive narratives to build leadership programs to support women, I found connections to relational leadership outcomes of creating conditions for co-creation and shared responsibilities, as well as relational leadership practices of bridging difference and unleashing human energies (Uhl-Bien & Ospina, 2012). There were additional connections to relationship leadership interconnections between values, practices, and outcomes. Also, a thread continued throughout of conditions existing to support vertical leadership development. Through these stories, there was also a

strong relation to vertical leadership practices, such as conditions for creating elevated sensemaking (Petrie, 2015).

Outcomes

This research not only illuminated the experiences and perspectives of female aviation executives concerning leadership development but also provided valuable insights into the factors that influence career progression and leadership practices within the aviation industry. These findings emphasize the need for a comprehensive approach to leadership development, considering both individual attributes and industry practices. The study highlighted the dynamic nature of leadership development, emphasizing that it is an ongoing journey influenced by personal actions, industry practices, and formal training opportunities. Effective leadership development is not limited to formal programs but permeates daily life, personal choices, and industry practices. The research also underscored the pivotal role of formal training programs in enhancing the learning derived from personal experiences and industry practices.

The application of aviation-inspired leadership actions to the research findings further demonstrated their relevance and effectiveness. Practices such as using pilot reports (PIREPs), capitalizing on challenges, acknowledging positive dynamic stability, and expanding aeronautical decision-making (ADM) were found to align with the themes and experiences of female aviation executives. These practices provided concrete examples of how aviation industry practices can inform and improve leadership development in the field. The model that integrates these aviation-inspired leadership actions emphasizes communication, adaptability, self-trust, and knowledge transfer. By embracing these principles, leaders can develop a holistic approach to leadership development, guiding their teams toward success while fostering a culture of collaboration and growth. The model also reveals the importance of relational leadership

practices and outcomes, demonstrating the interconnectedness of values, practices, and outcomes.

The application of these aviation industry leadership practices offers a framework for effective leadership development within the aviation industry. Practices like CRM, upset and transition training, and expanded ADM enhance leadership skills, adaptability, and decision-making abilities. These practices contribute to creating a leadership culture that is safety-conscious, efficient, and effective.

In addition to industry practices, the research also explored leadership training, emphasizing intentional programs and actions for developing future leaders. Practices such as preflight for success and recognize the center of gravity highlighted the importance of strategic planning, alignment with values, and fostering a shared sense of purpose. These practices demonstrated how leadership development can be tailored to support individuals' values and life purpose, creating a harmonious and purpose-driven work environment. The practice of establishing flight following emphasized the significance of continuous communication, coaching, and mentorship in leadership development. This practice fosters ongoing growth, equipping team members for new responsibilities, and empowering them to achieve their aspirations. It aligns with the principles of generous leadership, where leaders invest in the development of their teams, ensuring alignment with organizational goals.

The outcomes from this research not only contribute to a deeper understanding of leadership development in the aviation industry but also offer practical insights and recommendations for aviation companies, trade organizations, and regulatory bodies. By incorporating aviation-inspired leadership actions, industry practices, and intentional leadership

programs, the aviation industry can foster effective leadership development and support the advancement of women in aviation.

Recommendations for Practice

In the aviation leadership development model, Leg 1 on the leadership journey highlights personal actions, while Legs 2 and 3 reflect industry-level practices and training. In order to help the aviation industry, including aviation businesses and organizations, implement leadership practices and training, I developed a set of recommended activities and tools (Figure 5.2) that can be intentionally applied to achieve developmental outcomes. These tools and activities are supported by the research findings and/or build from leadership development literature.

Figure 5.2. Aviation Leadership Development: Activities & Tools



Industry Leadership Practices: Activities and Tools

This aviation leadership development draws on key practices from the aviation industry to create a comprehensive framework for nurturing exceptional leaders. The model integrates practices such as Crew Resource Management (CRM), Upset and Transition Training, and

Aeronautical Decision Making (ADM) to equip leaders with the skills and mindset needed to thrive in complex and dynamic environments. Each practice is associated with specific activities and tools that provide exposure to new ideas, promote safe risk-taking, and foster a culture of informal leadership.

Use Crew Resource Management (CRM). CRM emphasizes effective communication, teamwork, and situational awareness among aviation crews to enhance safety and decision-making. In leadership development, CRM principles encourage leaders to embrace diverse perspectives, engage in active listening, and facilitate constructive discussions. Leaders learn to leverage team members' strengths, make informed decisions collaboratively, and create an environment of mutual respect and trust. Activities and tools include:

- Peer coaching sessions: Leaders participate in peer coaching sessions to exchange ideas and gain insights from diverse perspectives.
- Stakeholder perspective workshops: Workshops designed to surface different stakeholders' viewpoints, encouraging leaders to consider a broader range of perspectives in decision-making.
- System perspective seminars: Seminars that provide leaders with insights into systems thinking, fostering a holistic view of organizational challenges.
- Open communication forums: Regular forums where leaders can openly discuss issues, share feedback, and promote constructive dialogue.

Provide Upset and Transition Training. Upset and transition training, drawn from aviation, equips leaders with the skills to stay composed under pressure, make sound decisions, and lead effectively during high-stress scenarios. Leaders learn to adapt to unexpected challenges

and expand their expertise, enhancing their confidence and resilience. Activities and tools include:

- Stretch project assignments: Leaders are given opportunities to take on stretch projects that push their boundaries and expand their skill sets.
- Culture of safe risk-taking workshops: Workshops that encourage leaders to embrace calculated risks and innovative solutions while maintaining safety. Encourage leaders that failure is a part of the leadership process.
- Informal leadership development circles: Circles where emerging leaders are encouraged to take on informal leadership roles and share insights.

Expand Aeronautical Decision Making (ADM). ADM involves making well-informed judgments during flight operations. Applied to leadership development, ADM emphasizes the importance of structured decision-making processes, considering various options and potential outcomes. Leaders learn to foster a culture of informed risk-taking and critical thinking.

Activities and tools include:

- Executive team feedback sessions: Leaders receive feedback and guidance from the executive team to refine their decision-making skills.
- Mentorship programs: Leaders are matched with mentors who provide guidance on decision-making and share their experiences.
- Sensemaking workshops: Workshops that help leaders improve their sensemaking abilities by analyzing data and critical information.

By integrating these aviation industry leadership practices, the model creates a framework that promotes effective leadership development. CRM enhances communication and teamwork, while upset and transition training prepares leaders for unforeseen challenges and

encourages safe risk-taking. ADM reinforces informed decision-making and continuous improvement. Together, these practices create conditions for leadership development, helping leaders navigate complex situations, expand their knowledge and skills, and foster a culture of continuous improvement. Just as skilled pilots are equipped to handle unexpected scenarios in flight, leaders are prepared to lead with confidence and competence in today's dynamic business environment.

Leadership Training: Activities and Tools

This leadership development model draws inspiration from aviation concepts to provide a comprehensive framework for fostering aviation leaders. Each concept is associated with activities and tools that empower leaders to navigate their journey toward excellence. These are activities and tools that can be implemented in current industry leadership programs or could be offered as a leadership workshop.

Preflight for Success. Preflight for success signifies the importance of thorough preparation and proactive measures in leadership development. The model addresses the unique challenges women face in the industry while encouraging the growth of both female and male leaders. This component emphasizes the importance of setting a clear direction for leadership development. It also involves understanding and addressing challenges women are facing while providing training alongside female and male colleagues to prepare the best future leaders. Just as pilots establish a true heading to navigate their course, leaders need to define their goals and aspirations, creating a sense of belonging and shared experiences for women and men. Activities and tools include:

- Leadership mindset training: Offer training sessions that encourage leaders to transition from a narrow, task-oriented checklist mentality to a more holistic and adaptable leadership mindset.
- Leadership vision workshops: Engage leaders in workshops to understand the challenges they are facing and craft their long-term vision and goals.
- Personalized development plans: Create individualized plans that map out the steps to reach leadership objectives.
- Regular check-ins: Establish consistent check-ins to review progress and adjust courses as needed.

Recognize the Center of Gravity. Just as recognizing the center of gravity is crucial for balance in aviation, leaders must align their decisions with their core values and those of the organization. This alignment enhances decision-making and fosters a sense of purpose. In this way, leaders are able to recognize people's values to create common understanding for teams, provide opportunities to support values and purpose, and create an environment with work/life balance. Activities and tools include:

- Values assessment: Encourage leaders to assess their personal values and compare them to the organization's values.
- Values integration: Integrate discussions about values into leadership training and team interactions.
- Values-driven leadership: Present case studies that highlight the impact of values-driven leadership decisions and discuss how the company can align with employees' values as well.

Establish Flight Following. Just as flight following supports aircraft throughout their journey, coaching and mentorship provide ongoing support and guidance for leaders. This component emphasizes the importance of fostering a culture of learning through these relationships. Activities and tools include:

- Structured coaching programs: Implement formal coaching programs for leaders at different levels.
- Mentorship circles: Create mentorship circles where experienced leaders guide and share insights with emerging leaders.
- Leadership book clubs: Organize reading groups focused on leadership literature, followed by discussions.
- Feedback and reflection sessions: Schedule regular feedback sessions to discuss progress and areas for improvement.

This aviation-inspired leadership development model offers a robust framework for cultivating strong leaders. By *preflighting* for success through intentional direction setting, recognizing the center of gravity through values-driven alignment, and establishing flight following through coaching and mentorship, leaders can create a flight plan toward impactful leadership while fostering growth and collaboration within their teams.

Recommendations for Research

While the present study has provided valuable insights into the experiences of female executives in the aviation industry using a pragmatic interventionist approach, it is important to acknowledge that the exploration of gender dynamics remains somewhat limited. The focus of this research has primarily been on understanding and illustrating these experiences, which is undoubtedly a crucial step. However, there is a clear need for further gender-focused research

that goes deeper into the nuanced power dynamics within the context of gender and leadership. Such research should not only continue to illuminate the experiences of women in the aviation field but also critically examine the structural and systemic barriers that they face. This will allow for a more comprehensive understanding of how to increase women's participation in the aviation industry and develop leadership programs that support their career advancement. As Fairhurst and Grant (2010) suggest, a more critical and gender-focused lens can help identify practices and roles that contribute not only to individual growth but also to industry-wide transformation, paving the way for more inclusive and equitable leadership in the aviation sector. Therefore, there is a clear call for future research that takes a gender-centered approach to address these crucial aspects of gender and leadership.

Implications

Theory

This research highlights several implications for understanding the interplay of leaders and leadership, and more specifically the interplay of constructionist and entitative leadership perspectives to explore relational approaches to the social construction of leadership (Uhl-Bien & Ospina, 2012). In this study, the narratives explored characteristics, skills, and beliefs utilized to accomplish and advance aviation executive leadership work (entitative), while also calling specific attention to social and relational practices/actions that build leadership capacity (constructionist). The study emphasizes that leader development and leadership development are distinct yet interconnected, reinforcing the notion that developing individual leaders is essential, yet does not necessarily ensure effective leadership within an organization (Day & Liu, 2019). Instead, effective leadership development is an ongoing, holistic, and organization-wide process that involves a supportive culture with the conditions to cultivate leadership. As a result,

organizations promote reflection and generative feedback and recognize that leadership development occurs through daily activities and interactions, not just in formal programs. This research advocates for a collaborative and interconnected approach to leadership development that extends across teams and permeates the entire organization, emphasizing leadership as a continuous journey rather than a destination.

For Methods

This study employed a multi-method approach, combining interviews, photovoice, and points of co-creating interactions to explore the experiences of female aviation executives in leadership and professional development. This approach has several implications. First, it offers a comprehensive and nuanced understanding of the participants' stories, allowing for a deeper connection with their experiences. The use of visual-based narrative inquiry through photovoice can make the research findings more engaging and relatable to a broader audience. Additionally, this study illustrates the value of combining narrative and visual methods to convey ideas more effectively and authentically. This study focused on female leadership development within the aviation industry. However, a multi-method approach may be useful in other professional contexts to shine a light on recurring social issues, amplify the voices of people holding marginalized or underrepresented identities, and provide insight to guide transformative action.

Representation was a tension that surfaced in this study and represents a limitation of the photovoice method and other engaged scholarship approaches. On one hand, participants consented to showing their own likeness and desired having their voices heard and stories told. At the same time, the study was conducted under Institutional Review Board standards of confidentiality, requiring the use of pseudonyms. Additionally, participants expressed concern about submitting photos that depicted situations where readers may be able to recognize other

people who were not participating in the study. While most felt comfortable submitting a photo that highlighted their own story, they did not want to go through the extra process of gaining permission from the bystander to use their photo. These examples illustrate how careful consideration of both procedural and relational ethics (Tracy, 2010) is essential when conducting collaborative, engaged, narrative research.

Final Reflection

In conclusion, this study has explored the narratives of female aviation executive leaders, uncovering leadership development experiences and insights. While I have strived to align these narratives with the most prominent themes, the richness of the data and the multifaceted nature of these stories have presented both challenges and opportunities. I presented the examples in relation to the strongest connection to the theme I believed it supported; however, there were multiple instances where I felt an example given by the participant could be representative of multiple themes. Selecting specific examples to represent each theme was a difficult task, as each participant's journey was filled with valuable insights. Each of the stories was so rich in data, I felt I could have done a full study on each participant separately. One important takeaway from this study is the undeniable interconnectedness of the participants' leadership development journeys. It is a testament to the complexity and depth of the experiences of these executives, and it underscores the importance of holistic leadership development approaches.

Despite the limitations of not capturing every nuance of individual stories, the strength of this research lies in the collective patterns that have emerged. These results are not isolated; they are co-created narratives that offer an understanding of the challenges, triumphs, and growth experienced by female aviation executive leaders. As we navigate an evolving landscape in leadership, these narratives stand as a testament to resilience, determination, and the potential for

transformative change. They serve as inspirational success stories and valuable resources for both individuals and industry, charting the course toward equitable leadership within the aviation industry and beyond.

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Appendix A - Recruitment Materials

Recruitment Email and/or Phone Call

Subject: Dissertation Study – Aviation Executive Leaders

Hello [name of person],

I am working on my dissertation and I am hopeful you can help! I am focused on understanding and illustrating the leadership development perspectives and experiences of female aviation executives during their career progression. This study will focus on women currently employed in aviation professions and will seek to understand their experiences, as well as share best practices of leadership and professional development programs that encourage female interest and persistence in aviation career fields.

I am reaching out to you as a female executive leader in aviation as I truly believe your experiences and story are powerful. Your message has the potential encourage people to think differently and build understanding around the experiences of women in aviation. Since I am interested in the depth and quality of your experiences, it will be a smaller group with 3 total female aviation executive leaders.

This will be a fun project that ties together art with narrative and has the ability to shed light on important topics in a new and creative way! This would require an **estimated time commitment of 5–10 hours total over the next 12 weeks.**

Your participation would involve:

- a one-on-one 1 hour interview
- a photovoice project (*where you submit 3 photos with details on your experience as a woman in aviation leadership*)
- two “member reflection” sessions (*Member reflections serve as a checkpoint to check for accuracy in the data represented and provide opportunity for questions and feedback*)

My goal is to support leadership development and pathways to leadership positions for women. Please let me know if you are interested in participating! Feel free to reach out with any questions.

Thank you sincerely for considering it,

Lindsey

Appendix B - Interview Guide

Title of Project: Accelerated success through leadership: a narrative study of female aviation executives' stories of leadership development

Note: Below are the interview processes and questions intended for interviews with participants, along with the photovoice prompt and photo analysis questions. Listed are the anticipated interview questions; however, these will be semi-structured open-ended interviews with questions considered as only to guide the interview but not to dictate its direction or outcome (Kim, 2016, p. 163). What is listed below, are the anticipated questions and intended lines of inquiry established at the beginning of the research process. The interview questions are formatted as open-ended, descriptive, structural, and contrast questions to try to reach interviewee's emotional level and "encourage more thoughtful and personally meaningful answers" (Kim, 2016, p. 170) & (Bhattacharya, 2017, p. 132). The interview process will follow a narration phase with restricted interruptions and interventions and then lead to a conversational phase (Kim, 2016, p.167).

Round 1 – Individual Interviews

Review of Consent: *Review written consent form & obtain verbal confirmation*

Script: "Thank you for agreeing to participate in this research interview. Before we begin, I would like to confirm that you have read and understood the consent form and the project summary, and that you agree to participate voluntarily. Is that correct? (*Wait for answer*) If at any point you need to withdraw from the study you can do so without any penalty or negative consequences."

Greeting: *Welcome, review purpose, & record*

Script: "The purpose of this interview is to gather information from female aviation executives about their experiences and perspectives on the impact of professional development and leadership development opportunities during their career progression in the aviation industry. The information obtained will be used to support a dissertation research study. The interview will be audio recorded and transcribed for data analysis purposes. Please let me know if you have any questions or concerns at any time. Okay let's get started!"

Debriefing

"Thank you sincerely for taking the time to share your story today. Your narratives and photos help to highlight the experiences of female aviation executives and contribute to research on professional development for women in aviation careers. Please contact me if you have any questions or concerns related to the study. You will be invited to view the public photo gallery and the final report will be shared with you."

Table B.1. Interview Protocol

Data Collection	Potential Questions & Interview Process	Research Question
1-Hour Individual Virtual Interviews	Purpose: The purpose of this study is to understand & illustrate female aviation executives' experiences and perspectives on the impact of professional development and leadership development opportunities during their career progression. Research Questions - Overarching research question: What are the life stories of female aviation executives who experienced leadership development or professional development during their career. - What kinds of experiences have led females to advance in their aviation career? - What do these aviation executives stories reveal about the leadership practices of the aviation industry? - What can the aviation community learn from the aviation executive stories in order to build leadership programs to support women in aviation?	
Start Interview Questions	- Please introduce yourself with your professional title and share what led you to your current position as an aviation executive? - Tell me about a time you experienced professional development and/or leadership development. - What was the most memorable leadership assignment that you experienced during your career journey and leadership development? - How did your leadership/professional development experience in college differ from your leadership/professional development experience in industry? - What does it mean to you to develop professionally as a leader? - What opportunities have you been given and how did these opportunities impact your career? - Tell be about a time when you were given a task/project that you felt like was a stretch of your experience during your career. - What leadership process or practices supported your own leadership development?	A, B A, B A, B A, B D A, B, C A, B A, B, C

- | | |
|--|---------|
| 9. Walk me through a time where you felt challenged during your career and how you overcame that challenge. | A, B |
| 10. In your experience, how have leadership interactions supported your professional growth and own leadership work? | A, B, C |
| 11. Could you draw me a timeline of critical milestones in your leadership development and tell me about them? | A, B, C |
| 12. When do you feel you developed the most as a leader? | A, B |
| 13. In your experience, what is needed for development of leadership in the aviation industry? | C, D |
| 14. If you could create an ideal professional experience for leadership development for female's, what would it look like? | D |
-

Appendix C - Photovoice

Photovoice Training Session

Overview of Meeting: *Review purpose, photo project guidelines, ethics*

1. **Review purpose:** Encourage creative and share project guidelines.
2. **Review project timeline & guidelines:** Participants and researcher have 3 weeks to capture images to build a photo collection of up to 3 photos and respond via email to PHOTO questions for each photograph.
3. **Review ethics:** Provide participants with a blank consent form.
 - a. *Participants use if taking a picture of people's identifiable:* signature obtained by the photographer and granted by subjects to have their picture taken.
4. **Participants Sign Photo Release Acknowledgement:** Have participants sign after meeting – include in email message.

Script: “Thank you again for dedicating time to this project and sharing for your story!”

Purpose: The purpose of this photovoice project is to illustrate and describe your experiences as a female aviation executive. Caroline Wang and Mary Ann Burris design this methodology in the 1990's to bring forward minority voices and stories and encourage critical dialogue around important issues. The final representation of your photos and narrative has the potential to encourage people to think differently and build understanding around the experiences of women in aviation. Your photos also have the ability to reach and influence decision makers as they guide the aviation environment.

Photo Project Process & Guidelines: For this project you will use your own phone or camera to capture up to 3 photos in response to the question: “What is it like to be a female executive in aviation?” Then, for each photo you take you will need to describe the photo in detail. You will do this by responding to 5 questions for each photo. Please submit your photos along with your written responses to the PHOTO Analysis questions (*listed below*) for each photo by May 22, 2023 to lindseydreiling@ksu.edu.

Photo Prompt: (*Capture photos in response to the following question*)

What is it like to be a female executive in aviation?

PHOTO Analysis Guide: (Questions for you to consider as you describe in detail each of your photos.)

P – Describe your **PICTURE**?

H – What is **HAPPENING** in your picture?

O – Why did you take a picture **OF** this?

T – What does this picture **TELL** us about your experience as a woman in aviation?

O – How can this picture provide **OPPORTUNITIES** for us to support development of leadership and advancement of females in aviation careers?

(Adapted from Hergenrather, K. C., et al., 2009)

Ethics:

Also, a few reminders as you start your photovoice project are to:

- **Gain informed consent:** If you plan to take a picture of anyone that may be identifiable in your photographs, you need to gain their permission first. Please ask them to sign a release form (*Model Photo Release Form provided*) before taking their picture. Also, if you are taking a picture of a minor you will need to ask for their parents' signature. If taking a picture of a public environment or pictures of larger crowds, where a person's face may not be identifiable, you do not need to gain consent.
- **Do no harm:** Protect the participants and the community by following privacy laws. Please do not take photos that could harm individual's reputation, cause financial harm, or profit at another's expense. Also, you are encouraged to be symbolic if you so choose; however, please be careful in taking pictures that could be misunderstood when taken out of context.
- **Photo Release Acknowledgement:** I will also be sending a photo release acknowledgment for you to sign as a participant in this study. This grants me permission to use the photos you submit for the photovoice project.
- **Have Fun!** My hope is that this project brings you joy in sharing your story and highlighting your career and life journey. Be creative and tell your story the way you want!

Do you have any questions I can help answer right now? (*Share any additional guidance*)

Please reach out anytime with questions or concerns!"

Photovoice Project Reminder Email

Email Reminder:

Script: “Thank you again for dedicating time to this project and sharing for your story! Below is a reminder of the information we covered in the training session. It may be helpful to refer back to during your participation in the photovoice project; however, please reach out anytime with questions or clarifications.

Purpose: The purpose of this photovoice project is to illustrate and describe your experiences as a female aviation executive. Caroline Wang and Mary Ann Burris designed this methodology in the 1990’s to bring forward minority voices and stories and encourage critical dialogue around important issues. The final representation of your photos and narrative has the potential to encourage people to think differently and build understanding around the experiences of women in aviation. Your photos also have the ability to reach and influence decision makers as they guide the aviation environment.

Photo Project Process & Guidelines: Capture up to 3 photos in response to the question: “What is it like to be a female executive in aviation?” Please submit your photos along with your written responses to the PHOTO Analysis questions (*listed below*) for each photo by **May 22, 2023** to lindseydreiling@ksu.edu.

Photo Prompt: (*Capture photos in response to the following question*)

What is it like to be a female executive in aviation?

PHOTO Analysis Guide: (*Questions for you to consider as you describe in detail each of your photos.*)

P – Describe your **PICTURE**?

H – What is **HAPPENING** in your picture?

O – Why did you take a picture **OF** this?

T – What does this picture **TELL** us about your experience as a woman in aviation?

O – How can this picture provide **OPPORTUNITIES** for us to support development of leadership and advancement of females in aviation careers?

(Adapted from Hergenrather, K. C., et al., 2009)

Also, below are a few reminders as you start your photovoice project.

- **Gain informed consent:** If you plan to take a picture of anyone that may be identifiable in your photographs, you need to gain their permission first. Please ask them to sign a release form (*Model Photo Release Form attached*) before taking their picture. Also, if you are taking a picture of a minor you will need to ask for their

parents' signature. If taking a picture of a public environment or pictures of larger crowds, where a person's face may not be identifiable, you do not need to gain consent.

- **Do no harm:** Protect the participants and the community by following privacy laws. Please do not take photos that could harm individual's reputation, cause financial harm, or profit at another's expense. Also, you are encouraged to be symbolic if you so choose; however, please be careful in taking pictures that could be misunderstood when taken out of context.
- **Photo Release Acknowledgement:** Please sign and send back to me the participant photo release acknowledgment. This grants me permission to use the photos you submit for the photovoice project.
- **Have Fun!** My hope is that this project brings you joy in sharing your story and highlighting your career and life journey. Be creative and tell your story the way you want!

Please reach out anytime with questions or concerns!"

Appendix D - Data Analysis Table

Table D.1. (RQ1) Experiences Leading to Advancement

Aviation Practices Connection	Theme	Description	Codes & Examples
Use of Pilot Reports (PIREPs)	Building on the thought process of many	Development through learning and building on the experiences of others. Each person's experience provides unique insight that may not be available from any other source. These interactions lead to advancement individually and as a team.	Learning from others point of view Working with others for new creations Increasing views increase learning Understanding through conflict Realize different approaches to reach a goal Open ears
		Approaching challenges each day with a mindset of learning, curiosity, and the opportunity for growth. Learning from the challenging experiences and failures to become a better leader and be more prepared for the next event.	Learn the most from failures Armed for the next challenge More challenges encountered, the more you learn & better leader you can be Challenges pushed me No challenges equal no opportunity for growth Curiosity Learning mindset Grow & learn every day
Capitalize on the Headwind Component	Challenges increase capacity for learning and leadership		

Acknowledge Positive Dynamic Stability	Trusting in self during times of uncertainty	During ambiguity, moving through uncertainty, fear and doubt to trusting in yourself and your capabilities. With each experience, building confidence, self-awareness, and resilience.	Moving through fear and doubt
			Not allowing uncertainty stop you
Positive Transfer of Learning	Using every day interactions of leadership and experiences as development	Development through daily activities such as presences at meetings and involvement with leadership practices prepares you for future experiences. Positively applying each learning experience to build on the next and develop the skills needed for the next opportunity.	Overcoming imposter syndrome
			Building confidence and knowing capabilities
			Realization of self and strengths
			Commitment to self and goals
			Learning each day on the job through relationships
			Invitation to leadership meetings
			Natural course of going to meetings
			Being in the presence of the executive leadership team
			Title not entitlement
			Feedback from leadership

Table D.2. (RQ2) Leadership Practices of the Aviation Industry: Organizational Ways of Growing People

Aviation Practices Connection	Theme	Description	Codes & Examples
Use Crew Resource Management	Exposure to new ideas to expand and bridge perspectives	Expansion of view and thoughts through exposure to new ideas, training, and relationships. Bringing people together to bridge perspectives and using available resources to make decisions.	Working together to deal with situations
			Building relationships to work through the uncontrollable
Provide Upset Training and Transition Training	Opportunities to take on projects beyond current level of knowledge	Given and/or taking on tasks, responsibilities, and positions beyond own self-assessment of experiences and current knowledge. Taking the stretch opportunity to expand knowledge, capabilities, and experience to be a better leader.	New ways of thinking
			Bringing team together to learn
Use Crew Resource Management	Exposure to new ideas to expand and bridge perspectives	Expansion of view and thoughts through exposure to new ideas, training, and relationships. Bringing people together to bridge perspectives and using available resources to make decisions.	Not aligned with C-Suite, but working through it together
			Group leadership sessions with peers
Provide Upset Training and Transition Training	Opportunities to take on projects beyond current level of knowledge	Given and/or taking on tasks, responsibilities, and positions beyond own self-assessment of experiences and current knowledge. Taking the stretch opportunity to expand knowledge, capabilities, and experience to be a better leader.	Handling conflict and developing through frustrations
			Fully stretched
Provide Upset Training and Transition Training	Opportunities to take on projects beyond current level of knowledge	Given and/or taking on tasks, responsibilities, and positions beyond own self-assessment of experiences and current knowledge. Taking the stretch opportunity to expand knowledge, capabilities, and experience to be a better leader.	Introduced to completely new aspect of aviation and exceed expectations
			Building from scratch
Provide Upset Training and Transition Training	Opportunities to take on projects beyond current level of knowledge	Given and/or taking on tasks, responsibilities, and positions beyond own self-assessment of experiences and current knowledge. Taking the stretch opportunity to expand knowledge, capabilities, and experience to be a better leader.	Taking risks and getting outside my comfort zone
			CEO in name only at first, had to grow into it
Provide Upset Training and Transition Training	Opportunities to take on projects beyond current level of knowledge	Given and/or taking on tasks, responsibilities, and positions beyond own self-assessment of experiences and current knowledge. Taking the stretch opportunity to expand knowledge, capabilities, and experience to be a better leader.	Development by trial and error
			Drinking from a fire hose
Provide Upset Training and Transition Training	Opportunities to take on projects beyond current level of knowledge	Given and/or taking on tasks, responsibilities, and positions beyond own self-assessment of experiences and current knowledge. Taking the stretch opportunity to expand knowledge, capabilities, and experience to be a better leader.	Stepping up to the plate

Expand Aeronautical Decision Making	Evolving knowledge and skills through active networks and resources	Improved sensemaking and decision-making processes through use of resources, coaching, and feedback from executive leaders.	Sought coaching to set and achieve goals Business coach for leadership development Tell me if I can do better
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Table D.3. (RQ3) Building Leadership for Women in Aviation

Aviation Practices Connection	Theme	Description	Codes & Examples
Preflight for Success	Intentional programs and action to develop future leaders	Understand and address challenges women are facing while providing training alongside female and male colleagues to prepare the best future leaders.	Needs to address challenges women face in the industry
			Move from checklist mentality to broader complex leadership mindsets Create sense of belonging Shared experiences, alongside of men
Recognize the Center of Gravity (CG)	Driven by life purpose and values	Recognize people's values to create common understanding for teams and provide opportunities to support values and purpose.	Decisions led me to being the mom I want to be for them Focus on balance and unique situations presented themselves Primary parent Military spouse Talk about values and will find things in common with others
Establish Flight Following	Generous leadership through coaching and mentorship	A focus on developing teams through coaching and mentorship. Prepare teammates to take on new roles and responsibilities, enabling them to reach their goals.	Generous leadership Groom people to take on roles and responsibilities Reach back to help others on their journey Enabling team on their leadership journey Focus on influence and impact to others

Appendix E - Photo Analysis & Release Forms

Figure E.1. PHOTO Analysis



PHOTO Analysis

☐ Subject Consent Form *(if needed)*

Photographer: _____

Project: Accelerated success through leadership narrative study - photovoice project

Instructions: Please reflect on the photo you took and answer the questions below for each photo separately *(For 3 photos, you will have 3 separate pages)*

P	Describe your PICTURE ?
H	What is HAPPENING in your picture?
O	Why did you take a picture OF this?
T	What does this picture TELL us about your experience as a woman in aviation?
O	How can this picture provide OPPORTUNITIES for us to support development of leadership and advancement of females in aviation careers?

Figure E.2. Photo Release Form – Participants



Participants- Photo Release Acknowledgment

I, _____ (please print),
grant permission to Kansas State University, its representatives, and the
researchers with the Accelerated success through leadership narrative study the
right to use photographs that I have taken for the photovoice project. I
understand that I may select the photos to be release for use and may decline use
of any photograph at any time. The researchers of this project are free to use the
photos I have selected and may publish the photographs in print and/or
electronically or display for research and promotional purposes.

I have read and agree to the above:

Printed Name of Participant: _____

Signature: _____

Date: _____

Figure E.3. Photo Release Form – Models

 **Models- Photo Release Form**

I, _____ (please print),
grant permission to Kansas State University and the researchers and participants
with the Accelerated success through leadership narrative study the right to
reproduce the photographs and/or video images taken of me, or members of my
family, for the purpose of research, publication, promotion, illustration,
advertising, or trade, in any manner of in any medium. I hereby release Kansas
State University and the researchers and participants with the Accelerated
success through leadership narrative study for all claims and liability relating to
said images or video.

I acknowledge that I am ☐ over the age of 18
☐ the legal guardian of the following

If legal guardian of the model(s), please list names here:

Name(s): _____

Signature: _____

Date: _____