

11-5-2024

Forecasting the Promotion Rate for Women in the U.S. Senior Foreign Service

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Walden University

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Walden University

College of Health Sciences and Public Policy

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Jodi W. Erickson

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Walden University
2024

Abstract

Forecasting the Promotion Rate for Women in the U.S. Senior Foreign Service

by

Jodi W. Erickson

MA, George Mason University, 2017

MPP, George Mason University, 2010

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Policy and Administration

Walden University

November 2024

Abstract

Despite efforts worldwide to increase diversity, women continue to be underrepresented in the most senior leadership and management positions. The aim of this study was to provide insight into whether specific variables increased female representation at the most senior levels of the U.S. Foreign Service. A quantitative correlational study was completed using an autoregressive integrated moving average model in SPSS. Following that, time series forecasts were run in SPSS and AI generated in Google Gemini and Microsoft Copilot, to create a forecast for the female promotion rate in the Senior Foreign Service (the equivalent of the Senior Executive Service) within the U.S. Department of State for the next 5 years (2024-2028) based on aggregate time series data. The data set consisted of summary-level data from the State Department on the careers of 4,525 foreign service officers spanning 9 years (2015–2023). The officers were employed within 94 types of career series and had competed for promotion to the highest level of service. The forecast rate of promotion for women to the Senior Foreign Service ranged from a low of 4.19% (Microsoft Copilot) to a high of 5.23% (SPSS) for the next 5 years. Policymakers may need to consider additional methods or programs that contribute to the factors that a qualifications review board or promotion board ranks when determining whom to promote. The study may advance positive social change by bringing awareness that policies, such as forced promotion, ongoing mentoring, and career development training, although important, may not be as impactful as expected.

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Dedication

To my mother who believed in me and who instilled in me a life-long desire to learn, my son who continued to motivate me throughout this journey, and my daughter whose optimism is continually inspiring.

Acknowledgments

I cannot begin to express my sincere thanks and appreciation to my chair, Dr. Lori Salgado, and my committee member, Dr. Victor V. Ferreros. I would not have made it through this lengthy journey without their advice, suggestions, and mentoring.

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Chapter 1: Introduction to the Study

There is a public policy problem both domestically and globally where, despite efforts to increase diversity in senior leadership positions, women continue to be underrepresented in the most senior levels of leadership and management positions. The Office of Personnel Management (OPM) collects data annually on workforce trends in order to provide detailed information to Congress, the president, the Government Accountability Office, and numerous other institutions. It found in 2018 that 66% of all Senior Executive Service (SES) positions were male (OPM, n.d). The OPM's report revealed virtually no increase in female representation in SES positions from 2014 to 2018.

Furthermore, in its *Global Gender Gap Report*, the World Economic Forum (2023) ranked the United States behind 42 countries with regard to female representation in senior leadership positions in 2023; women's workforce representation was 16% below higher ranked countries. The *Global Gender Gap Report* results further revealed that globally, the overall percentage of women in C-suite positions was 32.25%. White and Dholakia (2020) found that women hold the majority of senior roles at only three of the S&P 500 companies whereas only 6% of the CEOs in the world are women (see also Deloitte, 2024).

The gender gap in public and private sector employment and leadership is particularly relevant in developing countries where women lack not only opportunities to advance but opportunities to serve in elected offices, where they might be able to contribute to improvements in the quality of education, health, and economic stability

(World Economic Forum, 2019; United Nations, n.d.). I conducted this study to determine whether the policies of career mentoring, ongoing career development, and forced promotion forecasted increased representation of women in the Senior Foreign Service (SFS), the highest rank within the U.S. federal government.

In a study of S&P 500 executives and directors, Ingersoll et al. (2023) found that women directors are willing to take on more risk than their male counterparts, suggesting that women have had to take on more risk throughout their careers to get to the highest levels of management. Ingersoll et al. also found that having women directors can lead to higher levels of risk-taking for firms. Results from a meta-analysis conducted by Morgenroth et al. (2020) indicated that women are more likely than men to be chosen for leadership positions during a time of crisis. Field et al. (2020) found that the glass ceiling remains for female representation on boards and forecasted that it would take 45 years at the same trajectory to reach a level where 50% of the board were represented by women. Fitzsimmons et al. (2014) found that female CEO respondents took more significant career risks in positions that male colleagues had declined, and that overcoming adversity was a common and critical experience for the female CEOs. Adams's (2016) findings suggest that women are more risk-averse, whereas Buser et al.'s (2014) indicate that women have less of a taste for competition. This may not be applicable for female foreign service officers as an applicant to the foreign service knows from the application process that they will need to compete throughout their career if they are accepted.

The competitive nature of a foreign service officer's (FSO) position in the U.S. federal government requires continual competition among cohorts and competition for

duty locations. A study of two groups of federal employees with similar characteristics but who differed based on their entry into government service and the need to serve overseas, often in danger zones, contributed to this study's uniqueness. This study was informed by the glass-cliff phenomenon, which entails women being more likely to be appointed to lead organizations or organizational units when there is a higher risk of failure or crisis (Glass & Cook, 2015) and by game theory, which provides an explanatory account of the human strategic reasoning process (Patel, 2021). This chapter includes an overview of the study I conducted, which includes background information, the problem and purpose of the study, and the research question and hypotheses. I discuss the theoretical framework, nature; underlying assumptions, scope and delimitations, limitations, and significance of the study before providing a summary of key points and a transition to Chapter 2.

Background

A literature review revealed a wealth of studies on the limitations women face in obtaining CEO positions, as well as extensive research on the barriers they face in both business and nonprofit sectors in the United States, the European Union, and several other countries (Elango, 2019; Flabbi et al., 2015; Fitzsimmons et al., 2014; Glass & Cook, 2015; Hurley & Choudhary, 2016). Business, managements, and gender studies researchers have examined female representation in CEO positions and on high-level boards (e.g., Adams, 2016; Araújo-Pinzón et al., 2017; Bastida, 2018; Huang et al., 2020; Liu et al., 2020; Martins, 2020; Ragins, 1999; Stewart & Gudykunst, 1982). Espinosa and Ferreira (2022), for instance, analyzed the short- and long-term effects of a constant bias

in the promotion process in a hierarchical structure modeling Markov process and conclude that bias reinforces the glass ceiling effect (p. 39).

Additionally, there is extensive research on the glass cliff and the phenomenon of glass ceilings in business, economics, and management journals (e.g., S. Choi, 2019; Glass & Cook, 2015; Goodman et al., 2003; Haslam & Ryan, 2008; Lewellyn & Mueller-Kahle, 2020; Maume, 1999; Ryan & Haslam, 2005). Poma and Pistoiresi (2023) analyzed the effects of gender quotas in breaking the glass ceiling, finding that the percentage of women on boards increased more in the financial sector. In the field of public administration and policy, research on diversity, leadership styles, the effectiveness of transformational studies, and gendered ambition can be found (e.g., Johansen & Zhu, 2017; Maranto et al., 2019; Marvel, 2018; Moon & Park, 2019). However, based on my review of the literature, there was a gap in the public policy and administration literature on studies of the glass cliff, glass ceiling, and the effectiveness of enhanced career development, networking, mentoring and competition within the federal sector. Knowledge of the factors and other aspects of organizational culture that affect women's career advancement within the SFS may advance public policy.

Problem Statement

There is a public policy problem both domestically and globally where, despite efforts throughout the world to increase diversity in senior leadership positions, women continue to be underrepresented in the most senior levels of leadership and management positions. The specific research problem this study addressed was that not enough is known about whether public administration policies have led to an increased

representation of women in the SFS within the U.S. federal government. The focal policies are those pertaining to the implementation and promotion of enhanced career development training, ongoing mentoring, and forced competition.

Purpose of the Study

The purpose of this quantitative correlation research study was to construct a forecasting model that predicts the effects of policies related to enhanced career development, mentoring, and competition on the representation of women in the SFS within the U.S. Department of State (State Department). The State Department is a federal department that is inclusive of both civil service and foreign service employees. Although there are similarities between foreign service and civil service employees in the U.S. federal government, a significant difference between the two groups is directly related to the requirement for FSOs to serve overseas throughout most of their careers, often in dangerous areas, where in contrast, civil service employees generally serve domestically (State Department, n.d.). Based on my experience, due to the nature of serving at times in potentially dangerous locations, foreign service positions may be similar to positions occupied by managers in failing or distraught companies. Another significant difference between the foreign service and civil service is that FSOs must continuously compete and promote within a specified time or be removed from service (State Department, n.d.). It is common knowledge and also based on my experience, civil service employees, on the other hand, choose when or if they will compete to advance into other positions throughout their career and will not be removed from service if they do not continuously advance to higher levels of service in the federal government.

Research Question and Hypotheses

The research question was the following: Based on historical data, what is the forecast for the female promotion rate in the SFS, the equivalent of the SES, within the State Department for the next 5 years? To answer the research question, I postulated and tested the following null and alternative hypotheses:

H₀1: There is no significant increase in the forecast for the proportion of women promoted to the SFS within the federal government.

H_a1: There is a significant difference in the forecast of the proportion of women promoted to the SFS.

H₀2: The annual and required competition for positions and duty locations within the Foreign Service does not influence the forecast of the rate of promotions for FSOs, such that women do not promote at a higher rate to the SFS.

H_a2: The annual and required competition for position and duty locations within the Foreign Service influences the forecast of the rate of promotions for FSOs such that women promote at a higher rate to the SFS.

Theoretical Framework

The theoretical foundation for this study consisted of one framework and two theories. The institutional analysis and development (IAD) framework relates to how institutions and institutional arrangements guide, constrain, and direct people's choices and actions. The IAD framework includes assumptions about four variables: (a) the resources that an actor brings to a situation; (b) the valuation actors assign to states of the world and actions; (c) the way actors acquire, process, retain, and use knowledge and

information; and the processes actors use for selection of particular courses of action (Ostrom, 2011).

I also drew from two theories, the glass cliff theory and game theory. The glass cliff theory is a phenomenon of women in leadership roles being likelier to achieve leadership roles during periods of crisis or downturn. (Ryan, et al. (2016). Game theory, developed by John von Neuman, is a theory designed to explain the human strategic reasoning process in competitive situations (Mérő, 1998). The glass cliff theory and game theory closely align with the IAD framework. Each entails the decision-making process that an actor utilizes throughout their career. It is within the context of the strategic decisions that a woman may make, that the glass cliff becomes a factor as they may choose riskier positions in order to advance. Similar to a business organization or other entity in a market situation, an individual makes choices without full knowledge of all possible alternatives and the likely outcomes. The choices made on an individual level further affect the outcomes and interactions resulting in an organization.

Nature of the Study

The research design chosen for this study was a quantitative correlation approach and an autoregressive integrated moving average (ARIMA) time series analysis. I used the ARIMA time series analysis approach to forecast the effect of the policies of career mentoring, forced promotion, and enhanced career development to determine if there was increased representation of women in the SFS. Within the 9 years of data, inclusive of over 4,520 FSOs in 92 types of career series, the percentage of women promoted to the

SFS ranged from a low of 1.15% in 2021 to a high of 7.4% in 2016. It is worth noting that 2020 was the peak of the global COVID pandemic (Katella, 2021).

Key Variables

The key variables in this study were the number of FSOs who competed for promotion to the SFS, the number of applicants who were promoted, the number of men who competed for promotion, the percentage of men who competed, the number of women who competed, the percentage of women promoted, and the percentage of FSOs promoted. Additional variables included enhanced career development, career mentoring, and forced promotion. The latter three variables were coded as yes or no.

Methodology

I used SPSS to compute descriptive statistics. Then, I used SPSS to perform an ARIMA (0,0,0) model design to forecast the next 5 years. The findings were then contrasted to AI results from Google Gemini and Bing Copilot to evaluate whether the forecast model was consistent with AI. The study involved the collection of secondary data from annual reports and data sets from the State Department. Secondary data collection and analysis is considered reliable and accurate; also, it allows other researchers to replicate data collected at different points (Stewart & Kamins, 2012).

Target Population

The target population was Foreign Service employees. I obtained summary-level data from the State Department that was inclusive of these employees. The data sets consisted of a large group of subjects who were geographically dispersed both

domestically and globally. Within this data set were 4,525 FSOs who competed for promotion to the SFS from 2015 to 2023.

Assumptions

I accepted two assumptions on the basis of their underlying logic. One assumption central to this study was that the factors that contribute to the advancement of FSOs to the level of SES or SFS are measurable. This assumption was central to my study as it was not feasible within the scope of this study to measure subjective factors that a qualifications review board (QRB) or promotion board may have considered as they evaluate candidates. The second assumption within the context of this study was that female and male candidates are equally motivated to apply for the highest levels of management in the Foreign Service.

Scope and Delimitations

I undertook this study to advance understanding of whether public administration policies that pertain to the implementation and promotion career development, mentoring, and competition for U.S. FSOs led to increased representation of women in SES positions within the U.S. federal government. The scope of this study was limited to data obtained from the State Department. The study was also limited to careers in the Foreign Service from the levels of FSO1 and higher. Although the State Department offers a large sample and is inclusive of more FSOs than other departments in the federal government, its specific culture, organizational structure, and practices may differ from those of other organizations.

Limitations

This study has at least four limitations. The first limitation stemmed from the use of summary-level, secondary data. The second limitation is that the study centered on one department within the U.S. federal government. A third limitation is that key variables (e.g., the quality of an interview, the experiences that an applicant may have, as well as the locations that an FSO may have served at) could be significant factors that a QRB or promotion board considered when determining whom to select and therefore whom to promote to the SES or SFS. A fourth limitation of this study connects to the correlation to the three variables, enhanced career development training, career mentoring, and forced promotion. Within the context of this study, the length of time that an applicant had for these variables is unknown. Additionally, the quality of the career development training and career mentoring is unknown. Another factor that could be relevant and which is unaccounted for is that the length of tenure at the time of applying for a promotion is unknown. These factors could potentially change the results of the statistical analysis.

Significance

I conducted this research to address a gap in understanding of variables that may contribute to an increased representation of women in SES or SFS positions within the U.S. federal government. More specifically, this research was undertaken to forecast the effect of the policies of career mentoring, forced promotion, and enhanced career development to determine if there is an increased representation of women in the SFS.

Summary

In this chapter, I provided the background for this quantitative correlation study, which was conducted to advance an understanding of whether public administration policies that pertain to the implementation and promotion of career development, mentoring, and competition led to an increased representation of women in SES positions within the U.S. federal government. Summary-level, secondary data were obtained from the State Department. In Chapter 2, I provide an extensive literature review. In Chapter 3, introduces the research design and approach for the study.

Chapter 2: Literature Review

Introduction

There is a public policy problem both domestically and globally where despite efforts worldwide to increase diversity in management and senior leadership positions, women continue to be underrepresented in the most senior levels of leadership and management positions. The gender gap remains in both the public and private sectors and is not only relevant in developed countries; it is particularly relevant in developing countries where women lack opportunities to advance and serve in elected offices. These opportunities have been shown to improve the quality of education, health, and economic stability (World Economic Forum, 2019; United Nations, n.d.). In this chapter, I review extant literature relevant to this study. The literature review encompasses research on the effects of career development, training, and mentoring for women as they advance into executive positions or mid-level management. The research also includes a review of journal articles emphasizing the glass ceiling, the glass cliff, and game theory.

This study aims to advance public policy with knowledge of the effectiveness of variables that may contribute to an organizational culture within the federal government where women can advance in proportionate rates to men to the SES, or equivalent positions, thereby increasing gender diversity. Diversity in public organizations is necessary to ensure that a broad spectrum of public interests is considered when developing or modifying public policy. An organizational culture that values diversity also represents individuals who do not tolerate bias. Johnston (2019) suggests that when public bureaucracies reflect an underrepresentation of women and minorities, this

undermines the performance and trust in public institutions. Through exploration of the study variables, this study may contribute to knowledge of factors that impede female advancement to the highest levels of the federal government. This study will further address gender diversity with quantitative analysis to determine if specific variables may lead to gender equality within federal agencies that include civil service and foreign service employees.

Women often face a *glass ceiling*, a term initially coined by feminists to reference barriers that women faced as they advanced through the ranks of leadership or management. (Ryan, et al., 2016). Although there have been great strides in advancing civil liberties, this term has been expanded to describe barriers that minority women or men face. A more recent phenomenon analogous to the glass ceiling theory is the glass cliff theory. The *glass cliff theory*, or phenomenon, was coined by Ryan and Haslam (2005) to describe their research findings on financial companies and board performance. Ryan and Haslam discovered that the appointment of women to executive boards was more likely in cases where a company had poor performance preceding the board appointment. The glass cliff phenomenon is uniquely applicable within the contexts of this study as the data entails women who may have been chosen for senior leadership positions in a risky or hazardous location. A review of the literature that includes game theory and the glass cliff may explain the applicant's strategic decision-making process as they seek to promote to the SFS or the equivalent, the SES.

The literature review will delineate how mentoring, enhanced career development training and networking factors may influence the selection of a woman for a senior

executive position. Qualitative and quantitative research has shown that mentorship has been pivotal in empowering women and led to women advancing to leadership positions in the business sector (Haslam & Ryan, 2008; Lewellyn & Muller-Kahle, 2019; Tharenou, 2005). In a study of Dutch civil service, Groenveld et al. (2019) found that in turbulent organizations, there was a higher proportion of women at the most senior level when the level of women in lower management positions was higher. Although there are extensive studies on the glass cliff phenomenon and the glass ceiling for female CEOs within the business sector, there is limited research on how this may apply to the federal sector. Furthermore, there is a gap in research on the differences between foreign service and civil service employees and the competitive nature of the foreign service, which has aspects akin to game theory.

Two approaches are taken within this study. The first was to expand research in peer-reviewed articles and publications within the public policy and administration field. The research includes mentoring, career development programs, networking, and government initiatives and policies to advance gender diversity. The second approach examines the convergence of the glass ceiling and glass cliff phenomenon with game theory and how these may influence or impact an employee's advancement into the SFS, the highest position within the SFS.

The highest Foreign Service position is a career ambassador, followed by career minister and minister counselor. The SES and SFS are the top positions within the federal government. Although a particular administration may hold some SES positions to be filled by political appointees, most of the SES positions are filled through a competitive

process. (OPM.gov, 2020). For the purpose of this research, the literature review is inclusive of the competitive process for FSOs and the differences in competition as civil service employees seek to advance to SES or SFS positions.

Literature Search Strategy

I drew the references for this study from many sources, including:

- Walden University Library databases, including EBSCO, LexisNexis Academic, ProQuest Central, JSTOR, Sage, Wiley, and Directory of Open Access Journals;
- Google and Google Scholar search engines
- State Department, Foreign Service Institute, the U.S. Agency for International Development, Department of Commerce, and Department of Agriculture websites; and
- other government, academic, and relevant nongovernmental websites that were available to the public.

Search words included the following: *civil service, foreign service, glass cliff, game theory, promotion, competition, mentoring, networking, female CEOs, IAD framework, glass ceiling, gender diversity, mid-level management, Senior Executive Service, development training, and career development*. The literature search included research published from 1970 onwards.

Theoretical Foundation

The theoretical framework for this study was founded on the convergence of the IAD framework, game theory, and the glass cliff theory. Incorporating game theory and

the glass cliff theory into the IAD framework provides a more extensive framework, allowing a more profound analysis of the variables that may impact the selection for and advancement of women into the SES. Game theory provides the elements of strategic thinking that each individual utilizes throughout their career, while the glass cliff theory explicitly addresses the barriers that women face as they seek to promote at the highest levels of the federal government. Each theory incorporates key elements applicable to the research while aligning with the IAD framework. The glass cliff theory is a phenomenon of women in leadership roles being likelier to achieve leadership roles during periods of crisis or downturn (Ryan et al. 2016). Game theory, developed by John von Neuman, is a theory designed to explain the human strategic reasoning process in competitive situations.

The glass cliff theory and game theory closely align with the IAD frameworks. Each entails the decision-making process that an actor utilizes throughout their career. It is within the context of the strategic decisions that a woman may make, that the glass cliff becomes a factor as they may choose riskier positions in order to advance. Similar to a business organization or other entity in a market situation, an individual makes choices without full knowledge of all possible alternatives and the likely outcomes. The choices made on an individual level further affect the outcomes and interactions resulting in an organization.

Institutional Analysis and Development Framework

Ostrom originally developed the IAD framework in the 1980s. Ostrom (2011) created the IAD framework as a paradigm to understand the relationships and decision-

making processes in natural resource management and later expanded on it to include game-theoretical analysis. The IAD framework has been used extensively in research pertaining to natural resources, energy, and environmental decision-making; however, the framework has also been applied in a wide range of other contexts, including research on social behavior and organizational and strategic development (Tenenbergh, 2008; Wang, 2020).

The IAD framework is an appropriate framework for this study in part due to the incorporation of game theory and in part due to the nature of the IAD framework providing the basis for the strategic choices made at an organizational level. Game theory addresses the strategic decision-making process within a competitive situation and has been used to explain, understand, and predict outcomes in relevant settings. The high-level decisions made within a federal department and the individual choices federal employees make throughout their careers are vital to this research within the context of public policy and administration.

The IAD framework begins with an action situation and incorporates actors who can be individuals or organizations, an action arena, and identifying variables in the action arena. (Ostrom, 2011). An actor will evaluate and make decisions based on the information they have obtained within the action arena. From these decision points, patterns of interactions and outcomes occur. (Ostrom, 2005, 2011). The IAD framework centers on four variables: (a) the resources that an actor brings to a situation; (b) the valuation actors assign to states of the world and actions; (c) the way actors acquire,

process, retain, and use knowledge and information; and (d) the processes actors use for the selection of particular courses of action (Ostrom, 2005).

The action arena within this research includes the applicant seeking promotion to the SFS or SES, the qualifications and promotion boards, the selection boards, the OPM, and the state department. Ostrom (2005) suggested that whenever two or more individuals are faced with a set of potential actions that result in an outcome, these individuals are said to be in an action situation. The rules or regulations provide structure and instruction for interactions, while socioeconomic conditions, institutional norms, and procedures are variables that affect an actor's learning conditions and experiences. (Ostrom, 2005). Cole (2017) suggests that individuals organize their activities around informal rules in ways similar to formal ones.

Game Theory and Action Situation

The action situations and patterns of information in this research include those made by the employee, promotion boards, and the selecting officials. An evaluative process begins when an employee determines that they would like to apply for promotion to the SFS or SES. This evaluative process continues as a promotion board ranks the employees and ultimately chooses the individual for the promotion or results in a notification that they were not selected. Employees' core values lead them to take specific courses of action as they seek to promote to the SES or SFS. These values may include a desire to lead an organization or a desire for the power that comes with being a senior executive.

Variables that align with game theory include the number of potential applicants for a position, the status (foreign service or civil service), the grade or rank of the applicants, and other individual attributes such as age, gender, tenure, and education. Within the Foreign Service, consideration for promotion may also be given to the locations they have served at as the complexity of the work and the size of the post they managed is relevant in assessing their skills and ability to manage higher-level positions. For this study, the attributes incorporated into the forecast include women competing for promotion to the SFS, men competing for promotion, percentage of women promoted, percentage of men promoted, years, forced competition, career mentoring, and career development training. In order to successfully integrate the IAD framework, game theory, and the glass cliff theory, the history of the Foreign Service and the dual personnel systems within the State Department should be elucidated.

Literature Review Related to Key Variables and/or Concepts

History of the U.S. Foreign Service

This study centers on the SFS. The Foreign Service Act of 1924, commonly known as the "Rogers Act," was enacted by Congress to reorganize the diplomatic and consular service and provide a merit-based career path for FSOs (Rogers Act, 22 U.S.C. 3901, May 24, 1924)). The Act was codified into law and signed by President Calvin Coolidge in 1924 (Rogers Act, 22 U.S.C. 3901, May 24, 1924.). The law strengthened the Foreign Service and established merit principles for advancement, including probationary assignments, career development, advancement, and retention (Legal Information Institute, n.d.-a). The 22 USC Chapter 52, §3901 b is the portion of the law that

establishes a SFS characterized by strong policy formulation capabilities, outstanding executive leadership qualities, and a highly developed functional, foreign language, and area expertise (Legal Information Institute, n.d.-a).

FSOs have served abroad since the early 1900s to advance U.S. foreign policy related to economic, political, disease, cybersecurity, and climate issues and to promote U.S. commercial and agricultural exports. In 1900, the State Department, which employs the majority of FSOs, had a mere 91 domestic employees, 41 diplomatic missions, and 318 consular establishments (American Foreign Service Association [AFSA], 2021). Currently, there are approximately 15,600 employees in the Foreign Service and over 13,000 are employed by the State Department (AFSA, 2021).

Dual Personnel Systems: The Foreign Service and Civil Service

There are a select few departments within the federal government that include both foreign and civil service employees. The U.S. Departments of State, Defense, Agriculture, and Commerce and the U.S. Agency for International Development are among these. Typically, the civil service employee serves domestically within these departments to support U.S. foreign policy while the foreign service cadre supports U.S. foreign policy abroad. (State.gov, n.d.).

While there are currently over 13,000 FSOs in the State Department, there are also over 11,000 civil service employees and 45,000 locally employed staff at more than 270 missions. (State, n.d.) In comparison, the U.S. Agency for International Development has only 1,700 FSOs, and the Department of Commerce is inclusive of only 220 FSOs at 75 posts (AFSA, 2020). The Department of Agriculture is inclusive of two agencies with

both foreign and civil service employees, the Foreign Agricultural Service (FAS) with approximately 150 FSOs, and the Animal and Plant Health Inspection Service (APHIS) with approximately 40 FSOs (AFSA, 2020). Although the number of diplomats has increasingly grown over the last 100 years, the number of civil service employees has also grown and currently exceeds 2,100,000.

The Foreign Service Officer Promotion Process

The competitive nature of the Foreign Service is the notable characteristic that allows for the implementation of game theory and the glass cliff phenomenon into the IAD framework. FSOs enter at the bottom of a rank and advance throughout their career by a competitive process that ultimately results in either promotion to the SFS or forced retirement by age and time-in-grade. The forced ranking of an FSO and potential promotion, which occurs annually, is a process that entails a review by a promotion board. The intent of the forced promotion, as enacted by 22 USC, Chapter 52 §4001 c(2)C, is to provide a regular, predictable flow of talent upward through the ranks and into the SFS (Legal Information Institute, n.d.-a).

The promotion board ranks each officer based on character, ability, conduct, quality of work, experience, dependability, usefulness, and general performance. These pre-established boards rank the FSOs after a thorough evaluation that includes a review of the individual's performance evaluation reports, records of recommendations, foreign language scores, awards, and reprimands or disciplinary actions. (State, n.d.). The highest-ranked officers at each level are then promoted to the next level of the Foreign Service (AFSA, n.d.; Legal Information Institute, n.d.-a).

Differences Between the Foreign Service and Civil Service

The personnel systems for the foreign and civil service vary in several ways, including the hiring and promotion process, career development and training opportunities, and retirement plans. In contrast to the FSO who must advance to SFS within a specified amount of time or be forced to retire, a civil service employee's career does not entail forced career advancement or mandatory retirement. The majority of promotions within the federal government occur within the civil service when an employee chooses to apply for a position that will result in a promotion or a position that entails career development opportunities that will improve their skill sets as they seek to advance throughout their career.

Another noteworthy difference between foreign service and civil service occurs within the realm of career development training. Career development opportunities for civil service are not mandated as they advance throughout their career to a grade where they may compete for a SES position. Training opportunities depend primarily on funding availability, which may or may not be available depending on the agency's overall budget. Conversely, training funds are allotted explicitly for FSOs for foreign languages and career-enhancing development. These distinctions have created part of the disharmony within a department with dual personnel systems. Table 1 provides an overview of the differences between foreign service and civil service.

Table 1*Foreign Service and Civil Service Characteristics*

Characteristic	Service	
	Excepted Foreign Service	Civil Service (General Schedule)
Type of personnel system	Excepted personnel system (based on Navy) for global service	General Schedule personnel system for domestic USG employees
Commission status	Presidentially commissioned officer cadre selected for general executive potential	No commission, selected for subject matter technical expertise
Rank	Rank in person	Rank in position
Hiring Process	Selection through exam and assessment based on longer-term career potential	Hired to position openings based on subject matter expertise, typically via USAJOBS
Recruitment	Recruits to be representative of all 50 states and the American People, and now is.	No mandate to be representative of the nation beyond Equal Employment Opportunity (EEO).
Tenure	Tenure board requires foreign language plus performance.	An employee must serve 3 years of substantially continuous creditable service to achieve career status (tenure) 5 CFR 315.201.
Career Rotation	Worldwide availability (including family) based on needs of our diplomatic service and rotational.	No rotational requirement, mobility at employee's initiative
Promotion criteria	Annual promotion boards by a panel of peers with an assessment of potential to perform at next rank; 2% low ranked with consequence.	Pro-forma review for satisfactory performance
Career Mobility	Up or out career mobility (like military)	Mobility at initiative of employee
Labor Unions	Time in class/rank (TIC) selection out Represented by the American Foreign Service Association (AFSA)	Indefinite tenure Represented by the American Federation of Government Employees (AFGE) – Nonmanagement only
Retirement	Mandatory retirement at age 65	Most do not have a mandatory retirement age.

Adapted from: Foreign Service, Civil Service: How we got to where we are, Foreign Service Journal, 2014, <https://afsa.org/foreign-service-civil-service-how-we-got-where-we-are>

Foreign Service and Civil Service Ranking. One of the most significant differences between the civil service and the foreign service is that an FSO is ranked as an individual, similar to the military. In contrast to the foreign service, a civil service employee's rank is held by their position. The second core difference is that, unlike the FSO whose performance is reviewed annually in a competitive format for promotion to a higher rank, the civil service does not entail an annual ranking. Annual performance reviews are held for all federal employees; however, these are generally not for promotions. Competition occurs in the civil service when an employee applies for a vacant position that would result in a promotion.

The civil service employee begins their career at a grade scale (GS) that ranges between a GS-1 and a GS-15. Generally, to advance or be promoted the civil service employee must apply for a position at the next higher grade level and, if determined to be best qualified and selected for the position, the applicant will enter at the grade level of the position. A civil service employee is not limited to a minimum or a maximum number of years at any grade level, nor is there a maximum number of years before mandatory retirement. poor performance, throughout their career the civil service employee will determine when to seek a promotion, how long to remain in their current position, and when to voluntarily separate or retire from the federal government.

Foreign Service Time-in-Class and Promotions

A fundamental aspect of the promotion and ranking system within the Foreign Service is the *time-in-class* limitation. The maximum time-in-multi-class (FS-5 through FS-1) is 22 years with no more than 15 years in any one class (State Department, 2021).

A FSO promoted to FS-1 may be considered for promotion to the SFS at this point (AFSA, n.d.). 22 USC Chapter 52 Subchapter VI provides measures for the separation or removal of any member of the Foreign Service that has been ranked by the promotion boards at the bottom 5% of their class for 2 or more of the preceding 5 years (Legal Information Institute, n.d.-a). Additionally, 22 USC §3962 establishes the pay for the senior level positions of career-ambassador, minister-counselor, and counselor in the Foreign Service as well as establishes how a board of examiners for the Foreign Service will be comprised.

The qualifications for promotion to career ambassador, the highest-ranking position within the Foreign Service (3FAM 2320, July 2020; AFSA, n.d.) include the following: (a) have held the rank of career minister for a minimum of 3 years; served at least 15 years in positions of significant responsibility while in a class of FS-1 or above; show a demonstrated record of extraordinary, sustained achievement; and served as chief of mission at post.

Minister-counselors are eligible for promotion to the class of career-minister, the second highest-ranking position, after having demonstrated superior performance in positions with broad leadership and personnel management, policy direction, and program and resource management. (State Department, n.d.) The Foreign Service also includes time-in-service limits for the SFS. State Department guidance (3 FAM 6213.3-3) reflects the maximum number of years for the SFS as follows: counselor (7 years), minister-counselor (14 years combined time in class with no more than 7 years in the class of counselor), and career minister (7 years).

Senior Foreign Service and the Promotional Process

An FSO determines when they will seek to promote to the SFS by making a formal request for consideration. This application starts a clock; if the officer is not promoted into the SFS within a specific number of convocations of Selection Boards (set by regulation in each foreign affairs agency), the officer is mandatorily retired (Legal Information Institute, n.d.-b). SFS officers, similar to their military counterparts, are subject to time-in-class provisions. The officer must retire mandatorily if not promoted within a specific time-in-class for the rank encumbered. The time-in-class for each grade varies by career rank and the foreign affairs agency and is established by agency regulation. Times in class are now cumulative, so early promotion to higher grades no longer leads to the rapid retirement of rapidly rising officers. These stipulations ensure flow-through of the senior ranks of the Foreign Service, a specific goal of the rank-in-person Foreign Service personnel system. (3 FAM 2320 State Department, n.d.) Due to the statute governing the Foreign Service, every FSO is held to the same time-in-service limits or is forced to retire mandatorily.

The Civil Service and the Senior Executive Service

The SES was established by Title IV of the Civil Service Reform Act of 1978 (P.L. 95-454, October 13, 1978) and became effective on July 13, 1979. Like the SFS, the Civil Service Reform Act was established to ensure that executives at the highest levels of the government embrace democracy and possess the skills necessary to make sound policy decisions within the federal government. The Civil Service Reform Act also

provided for the development of the executives, addressed rewarding outstanding performers, removing poor performers, and prohibited personnel practices.

The rules that define how a civil service employee can apply for promotion beyond a GS-15 grade, the point at which they are then eligible to compete for the SES Candidate Development Program (SESCDP) or apply directly to the SES, are administered by the OPM. SES appointments can be career, non-career, limited-term appointments, or limited emergency. A QRB is similar to the SFS promotion board and is established to review the qualifications of all applicants for an SES position. Recruitment for SES positions may be limited to career employees or include qualified individuals not currently in the civil service. (OPM, 2020).

Senior Executive Service Selection Process

SES positions are generally advertised in USAJobs, although an SES may also be a political appointee. Additional methods by which an individual may be selected for the SES position include transfer, reinstating a former SES member, SESC DP graduate, or making a non-career appointment (5. U.S.C., OPM, n.d.). The QRB will convene to certify the applicants based on the executive core qualifications (ECQs) regardless of the selection method to review each applicant's submission and judges their qualifications within the scope of the core requirements (OPM, n.d.). The applicants are ranked, interviews conducted, and the agency conducts interviews and recommends the best-qualified candidates to the appointing official, who then forwards their recommendation to the QRB for certification (OPM, n.d.).

This selection process varies from the Foreign Service Review Board, primarily since the QRB does not rank applicants but instead determines if an applicant's qualifications meet specific criterion. According to the OPM (2020), the QRB considers “criterion A, "demonstrated executive experience," criterion B "successful completion and graduation" from an SESCDP, and criterion C "possession of special or unique qualities that indicate a likelihood of success" (p. 2-25). The QRB's criterion ranking is sent to the hiring agency, and at this point, the agency selects and appoints an applicant. The OPM, or State Department in the case of the Foreign Service, union contracts, and federal laws guide the promotion process. These rules and norms are generally known and shared between individuals and must be followed to compete for SES positions.

Applicability of the Theoretical Framework

Ostrom's (2011) first development of the IAD framework consisted of biophysical/material conditions, community attributes, and an action arena that included action situations, participants, interactions, evaluative criteria, and outcomes and later evolved to include multiple other theories, including game theory. The crux of the IAD framework is that numerous individuals interact within a rule-based system within any institution, crafting and modifying rules that are then interacted with within a deeper context (Ostrom,2005). Similarly, game theory analysis involves several players, their actions, potential outcomes, decisions, and each player's values and ranking. (Barash, 2003; Ostrom, 2005).

The variables within game theory include (a) the set of participants, (b) the positions to be filled by the participants, (c) the potential outcomes, (d) the set of

allowable actions and the function that maps actions into realized outcomes, (e) the control that an individual has regarding this function, (f) the information available to participants about actions and outcomes and their linkages, and (g) the costs and benefits serve as incentives and deterrents assigned to actions and outcomes. (Ostrom, 2005). The integration of the IAD framework and convergence with game theory is germane to this research as game theory was designed to explain the human strategic reasoning process and is often thought of as a mathematical game. While an FSO is continually competing for promotion each year, they also compete to be posted in locations that they desire to serve at and when to ultimately seek promotion to the SFS.

A civil service employee determines when they will seek promotion to the next higher grade level throughout their career and if or when they will apply for a position in the SES. The strategic decisions made by civil service employees seeking a promotion to the SES are based on several factors, including what positions are open, when to apply for a position, who the other applicants may be (actors), what actions those individuals may take, and what the potential outcomes are. These strategic decisions are akin to game theory which involves any set of circumstances where the result is dependent on the actions of two or more decision-makers. The assumption is that each actor operates rationally to maximize their situation, i.e., making strategic choices that will benefit him/her the most. Savage et al. (2020) clarify, "absent actual information about the actual abilities of others, people in competitive environments rely on the salient status characteristic to decide whom they want to compete for against resources and tend to settle on a status disadvantaged other." (p. 12).

Leadership at a Senior Level

Mentorship, networking, career development, and power expectations directly impact an employee's strategic decision-making process. Goodwin et al. (2020) found that women who are more likely to consider becoming a member of a leadership group expect more positive factors such as mentor support relative to negative factors such as negative stereotypes and discrimination. The core qualifications for obtaining certification into the SES include leading change, leading people, results-driven, business acumen, and building coalitions. Leadership at a federal level, as well as in a corporate level, involves power. Goodwin et al. also found that a sense of power for women was related to their desire to pursue leadership opportunities. An individual's views of power regarding either the ranking of a position or the desire to lead an organization may impact when the individual seeks opportunities for career development training or the times to seek promotional opportunities.

An aspect of power that is relevant to communication as well as national culture, is that of power-distance relationships. Power-distance relationships can be thought of on one level as to how subordinates interact with their superiors. Culture is a component within the Foreign Service as the FSO will likely serve in several locations worldwide and many of these will entail managing locally employed staff with a more subservient nature than is typical of the United States. Regions in the Middle East, as well as Asia, have higher power-distance cultures than others. Power-distance relationships are applicable to the SES and may indicate a particular leadership style.

Multiple authors (Eagly, 1987; Eagly & Carli, 2007; Debebe et al., 2016) have asserted that leadership is equated with assertiveness, aggressiveness, competitiveness, and maleness in most cultures. Koenig et al. (2011, as cited in Araújo-Pinzón et al., 2017), noted, "the traditional masculine-stereotyped manager is based on hierarchical power and control would be particularly adapted to intra-organizational management" (p.71). Research on the corporate board glass ceiling conducted by Lewellyn and Muller-Kahle (2018) indicated a high degree of complementarity with low power distance and high economic empowerment as well as high political empowerment for female directors. These results were moderated by national culture, and while the study was limited to public organizations in the United States, national culture, as well as power distance and economic empowerment, these variables are germane to game theory due to the strategic choices made to apply for positions within a particular region.

Cultural dimensions can be determined by the characteristics of employees or participants in the action situation (Ostrom, 2004). Variables such as how much of a power distance an individual needs or how comfortable with uncertainty an individual is may lead an applicant to choose a Foreign Service career. In a quantitative study involving diverse and nondiverse directors of boards, Field et al. (2020) suggested that diverse directors may not choose to serve in leadership positions because they are risk adverse. (p. 790).

Women's career aspirations have changed in the last three decades, and there is research indicating women value prestige and power in leadership similar to men (Eagley & Carli, 2003). Goodwin et al. (2020) found that increasing a female candidate's sense of

power affected their desire to lead and apply for leadership positions. Research findings from Hurley and Choudhary (2015) revealed that an increase in the number of children and years of education lowered the probability of a CEO being a female while having a more significant number of employees and length of time spent in management raised the likelihood of a woman becoming a CEO.

The manner in which an employee values a high or low power-distance relationship may impact the decisions that they make. The basic tenet of game theory is that any actor will think and behave strategically to optimize their situation. The process by which individuals employ game theory in their career can be best understood when applying an understanding of human behavior is articulated by Ostrom (2005).

Ostrom (2011) expanded on concept of game theory with the following:

For many problems, it is useful to accept the classical political economy view that an individual's choice of strategy in any particular situation depends on how he or she perceives and weighs the benefits and costs of various strategies and their likely outcomes. (p. 13)

Ostrom (2011) clarified:

In highly competitive environments, a further assumption can be made that the individuals who survive the selective pressure of the environment act as if they are maximizers of a key variable associated with survival in that environment (e.g., profits or fitness) (p. 13)

Ostrom (2011) evolved the IAD framework to incorporate game theory, which involves any set of circumstances where the result is dependent on the actions of two or

more decision-makers. The assumption is that each actor operates rationally to maximize their situation, i.e., making strategic choices that will benefit him/her the most. Game theory is germane to this research as one can assume that whether an employee is in civil service or foreign service, each employee makes decisions based on what will benefit them the most. Savage et al. (2020) found that absent actual information about the experience and traits of others, people in competitive environments rely on salient status characteristics to determine whom they want to compete against and tend to compete with those they view as having fewer advantages.

Game Theory, the Foreign Service, and Forced Competition

Entry into the Foreign Service forces FSOs to continually promote or be "ticked out," a phrase that reflects a mandatory retirement. The Roger's Act was created in part to address the critical element of maintaining outstanding leaders within the competitive nature of the Foreign Service (Office of the Historian, n.d.). As the promotion boards take into account the number of vacancies, the availability of funds, the projected needs of the Foreign Service, and the need to retain expertise and experience (AFSA, n.d.), the promotion board determines how many to promote to the SFS. Game theory is a key feature within the Foreign Service due to the competitive annual process. FSOs must progressively advance and do so within 22 years or be forced to retire (State Department, 2022). In order to do this, the FSO must be very strategic in terms of their advancement as they can only remain in one grade for a certain number of years.

Game theory also applies for those in the civil service. Although they may not be "ticked out" or forced to retire, the civil service employee determines throughout their

career whether to seek positions that enable them to acquire different skill sets as well as when to compete for a vacancy. The civil service also requires being strategic in considering whether a promotion within their agency is advantageous or whether they should seek employment in another government agency to require the leadership skills that are necessary to advance to the SES. Within the civil service, an employee may stay at the same grade (similar to a particular class within the Foreign Service) for their entire career and if they do not promote to higher positions, they will not be forced to retire (Office of Personnel Management, n.d.).

Within either the foreign service or the civil service, an employee's strategy involves the selecting official and the agency's interests while simultaneously determining the best way to compete with other participants. An applicant seeking to promote to an SES or SFS position inherently knows that other applicants are also seeking to maximize their potential (akin to a profit within a business setting). At times, an agency's best interest or goal may be selecting an individual with specific career experiences; at others, it may mean selecting someone with the most relevant policy experience. In recent years, various administrations have sought to address diversity through recruitment and education. Several European countries have developed quotas to increase female representation to address diversity (Veldman, 2023). For the purposes of this research, variables that will be used to forecast include years and percentage promoted for women.

The Glass Cliff, Game Theory, and Risk

Game theory includes an element of risk. While the FSO is continuously competing for promotion, the employee will naturally give consideration to the opportunities and dangers in each location. Bearing in mind that an FSO may have personal interests in advancing trade or a particular government policy, negotiating trade outcomes, or resolving trade disputes, each employee needs to be strategic in choosing which posts to bid on. The inherent challenges and the potential danger for FSOs and their families are weighed within the decision-making process. A FSO may choose not to seek a position at a higher risk post, or conversely, choose to take the risk, receiving a hazard pay differential as well as obtaining experience that may help to advance their career (Office of Foreign Service Human Capital, U.S. Department of Commerce, 2015).

As the FSO advances to the level where they seek promotion to the SFS, the selection board may consider qualitative factors when reviewing applicants and determining who to promote to the SFS. These variables may include the number and complexity of the posts in which the FSO has served and in which countries. A higher-risk or dangerous location is likely to have required a more nuanced skill level in diplomacy and necessitated higher security levels for their work (Office of Foreign Service Human Capital, U.S. Department of Commerce, 2015).

Risk is also a component of the glass cliff theory. Risk is a potential variable that may lead to a different proportion of women in the SFS or SES. Although the level of risk for a civil service employee working domestically is lower, the diplomatic and policy skills required for obtaining a SES can be considered as high as those needed in the SFS.

The SES position entails higher security level clearance, skills in negotiating trade or policy, engagement with foreign diplomats, and leading organizations that may have high levels of conflict (Office of Foreign Service Human Capital, U.S. Department of Commerce, 2015).

One of the strategic decisions made by an FSO includes the length of term they would need to serve at a post they are bidding on. The term of a post will vary from 1 year at the most dangerous posts to 3 years with an opportunity to extend at other posts. These variables ultimately result in applicants for the SFS having widely varying experiences and skill sets (Office of Foreign Service Human Capital, U.S. Department of Commerce, 2015). Ultimately, both FSOs and senior-level civil service employees utilize game theory as each advance throughout their career, strategically decide what positions to apply for, which locations to serve at, career development opportunities to explore, and even who they seek for formal and informal mentors.

The Glass Cliff

Paramount to a study of how women may advance in proportionate rates as men to the SES or equivalent is the glass cliff theory. The glass cliff phenomenon resulted from research conducted by Michele K. Ryan and Alexander Haslam (2004). Considerations of the level of risk in a particular position or location is part of the strategic decision-making process. For the FSO, some overseas positions may be considered high risk due to the political instability of a foreign country, the lack of available resources, and the level of danger for foreigners. For the civil service manager seeking promotion to the SES, leading an agency with a high level of conflict, as is

currently the case with the Department of Homeland Security, there may be a risk of failure as compared to leading an organization that is less visible.

Ryan and Haslam (2004) examined the performance of FTSE 100 companies, finding that women were more likely than men to be appointed to boards of companies that were consistently performing poorly. Ryan and Haslam concluded that women were more likely to be promoted to lead during periods of crisis or downturns and they coined what is now known as the glass cliff phenomenon. Experimental research by Haslam and Ryan (2008) indicated that women were more likely to be appointed to leadership positions associated with a high risk of failure or criticism when the organization's performance was declining. Ryan and Haslam concluded that this was partially due to the woman being perceived as more suitable for those positions and partially due to the female candidate having more leadership ability. (Haslam and Ryan, 2008). In many ways, the glass cliff phenomenon is a variation of the glass ceiling, which suggests that women face barriers (ceilings) as they seek to advance to the highest-ranking positions of companies and boards as well as senior positions within the public sector (Esposito, 2019; Groeneveld et al., 2019; Maida & Weber, 2020; Sabharwal, 2013).

The theory of the glass ceiling is well documented in several research studies. Mulcahy and Linehan (2014) found clear evidence that gender discrimination exists in companies and persists in board positions. Risk is shown to be an element of the glass cliff with an impact on the proportion of women on company boards, within school administration, and in the selection of leaders of failing companies. Mulcahy and Linehan

(2014) found that women were more likely to achieve board positions when there was a high risk of failure.

Mulcahy and Linehan (2014), in their research on the glass cliff and gender diversity, identified loss, or a risk of failure, based on the severity of a loss for companies listed on the UK stock exchange and concluded women were selected for boards of companies in more precarious situations than in companies with more minor losses. Adams and Funk (2012) found female directors were less risk-averse than male directors, while Adams and Rangunathan (2014), as cited in Adams (2016), concluded that women are less risk-averse than men in the area of finance.

Smith (2015) expanded research on the glass cliff with a study of leadership positions in local education agencies, defining risk as to the likelihood of failure based on the complexity of the school administration. In this study, risk was defined as a more diverse student body, considering the percentage of students with limited English proficiency and students with suspensions. Smith found support for the glass cliff theory finding that in more diverse student environments, women held a larger percentage of leadership positions.

Using an experimental design and drawing from the glass cliff theory, Esposito (2020) conducted research on middle management levels. Esposito sought to determine whether participants assigned women to higher risk positions more than men. In contrast to the research findings that indicated women were more likely to obtain a board or senior-level corporate positions in high-risk situations, Esposito's research indicated that

the participants assigned the candidate they viewed as a better fit and more effective, suggesting that the glass cliff theory was not applicable in mid-level management.

The Glass Cliff and Senior Executive Service Studies

A select few research articles include quantitative studies of the SES and the glass ceiling and glass cliff. Sabharwal (2015) explored the glass ceiling and glass cliff with a quantitative study on women in the SES and federal agencies, including distributive, redistributive, regulatory, and constituent policies. Sabharwal found that female SESs in redistributive agencies are the least likely to experience glass cliffs and that SES women in redistributive agencies are more likely to exert significant influence over policymaking.

Groeneveld et al. (2019) studied the effect of workforce decline on the share of women in management positions in a Dutch senior civil service setting. Similar to the Foreign Service in the federal government in the United States, the Netherlands senior civil service system requires that senior civil servants change positions regularly within this setting. The Netherlands civil service system is position-based, which aligns with a civil service position in the federal government in the United States. Groeneveld et al. found that organizational units with a substantial workforce decline were associated with higher proportions of women in top management, although the results were not statistically significant. Groeneveld et al. concluded that the pressure to appoint women in settings with solid diversity policies was high and that organizational growth was associated with increasing proportions of female managers in cases where the pre-existing level of female managers was low. Aluchna, et al. (2023) studied the relationship

to a firm's performance and promotion of women to top positions, finding firms in distressed positions were more likely to promote women.

Leadership, Ambition, and Organizational Context

There is a wealth of research on leadership in general. There is also considerable research on the glass cliff, the glass ceiling, and gendered ambition. Encompassed in this research are several components that may apply to the selection of women. Embedded within the organizational history of an institution is the perception of female ambitions and leadership ability. Eagly and Carli (2003) found that women who demonstrate clear-cut leadership ability may be seen as insufficiently feminine. Maranto et al. (2019) argued that "institutional and behavior patterns define recruitment, selection, and promotion" and "make different kinds of individuals more or less likely to emerge as leaders of public organizations" (p.469).

Eagly and Carli (2003) concluded that working in male-dominated occupations increased a man's chance of promotion while increasing women's chances of leaving their jobs. Expanding on gendered ambition with a study of public education administrators, Maranto et al. (2019) found that ambition emerged within a career system and concluded that gendered bureaucratic ambitions imply that in progressing toward equality, equal pathways to management for men and women lead to a different organizational culture, empowered employees, and greater job satisfaction.

Aguilera and Jackson (2003) examined institutional environments and reference how career patterns reflect the complex incentives and opportunities for top managers' mobility. (p. 458) while Chizema et al. (2015) found that the representation of women in

parliament positively impacted the prevalence of women on boards. In recent quantitative research on the influence of corporate elites and female board composition in Germany, Huang et al. (2020) supported the hypothesis that the number of men with multiple appointments on a given board was negatively related to the level of the board's diversity. Huang et al. (2020) argued that women face more difficulties entering corporate boards and achieving elite status partially due to men's attitudes towards women and the more significant attribution of agentic qualities associated with men than women.

Research conducted by Araújo-Pinzón et al. (2017) indicated that the years of experience for women were considerably shorter than for men and that as experience increased and position levels increased, managers tended to be male. There was no significant difference in the level of education between the two groups, and Araújo-Pinzón et al. (2017) suggest that social perceptions of how men and women manage organizations lead to women occupying fewer managerial positions at higher levels. Adams's (2016) research on female composition on boards led to the conclusion that while it is unusual for women to hold board seats, women may tend towards more universalism and stakeholder-oriented policies than male directors. Elango (2019) found that country wealth, gender egalitarianism, and humane orientation increased a woman's likelihood of leading a firm.

Within the context of the glass cliff are several variables that may lead to women occupying high-level positions, as well as indications of many obstacles that women may face in advancing to the highest levels of leadership in the federal government. Risk, a component of the glass cliff theory, is one variable within the Foreign Service due to

nature of the danger that an FSO may face when serving in different countries. At the same time, this risk may provide the FSO with the experience and opportunity to show their skills in a global and complex environment. High-risk positions can also be a factor that limits women as they seek to promote, due in part to how women are viewed in the Middle East, for example. Although this applies to the Foreign Service, the perceptions of how men and women lead organizations and institutional norms and behaviors apply to both the foreign and civil service.

The Senior Executive Service and Executive Core Qualifications

Similar to the SFS, in order to obtain a SES position, an applicant must meet five ECQs. The OPM (n.d.) established the five ECQs to measure whether an applicant has the skills needed to succeed in SES positions. The qualifications are defined by OPM as follows:

- **Leading change:** The ability to bring about strategic change, both inside and outside the organization, to meet the organization's goals. Inherent to this ECQ is establishing an organizational vision and implementing it in a continuously changing environment.
- **Leading people:** This core qualification involves the ability to lead people toward meeting the organization's vision, mission, and goals. Inherent to this ECQ is the ability to provide an inclusive workplace that fosters the development of others, facilitates cooperation and teamwork, and supports constructive resolution of conflicts.

- Results driven: This core qualification involves the ability to meet the organization's goals and customers' expectations. Inherent to this ECQ is the ability to make decisions that produce high-quality results by applying technical knowledge, analyzing problems, and calculating risks.
- Business acumen: This core qualification includes strategically managing human, financial, and information resources.
- Building coalitions: This core qualification involves the ability to build coalitions internally and with other Federal agencies, State and local governments, nonprofit and private sector organizations, foreign governments, or international organizations to achieve common goals.

The OPM (2012) does not determine whether an applicant is the most superior candidate for a particular position, as occurs within the Foreign Service, but instead determines if the applicant meets these core competencies.

Within the context of the glass cliff are several variables that may lead to women occupying high-level positions, as well as indications of many obstacles that women may face in advancing to the highest levels of leadership in the federal government. Risk, a component of the glass cliff theory, is one variable within the Foreign Service due to nature of the danger that an FSO may face when serving in different countries. At the same time, this risk may provide the FSO with the experience and opportunity to show their skills in a global and complex environment. High-risk positions can also be a factor that limits women as they seek to promote, due in part to how women are viewed in the Middle East, for example. While this applies to the Foreign Service, the perceptions of

how men and women lead organizations and institutional norms and behaviors apply to both the foreign and civil service.

Key Variables in the Study

The following is a continuation of the literature review and is directly related to the key components of an FSO's career. Unlike the civil servant who can choose to pursue a career development program or seek mentoring at any time in their career, or choose not to, the FSO's career progression and career development is mandated by law.

Candidate Development Programs

There are several differences related to career development programs and training between the foreign service and the civil service. 22 USC §4023 governs the Foreign Service Career Development Program, providing for training at junior levels of the Foreign Service and throughout as an FSO approaches eligibility for entry to the SFS (Legal Information Institute, n.d.-a). 22 USC. §4023 states in regard to FSOs, primary attention shall be given to training for career candidate officers and mid-career officers, both after achieving tenure and as they approach eligibility for entry to the SFS. FSOs also receive training on the conduct of diplomacy at international organizations and systematic professional development training and leadership and management courses at each mid-level grade. Attendance at a senior executive threshold seminar for newly appointed SFS is a portion of career development for FSOs. (American Academy of Diplomacy, 2011).

It is generally at the level of a GS-15 that an employee is eligible to apply for a senior executive position in the federal government. Although a GS-15 civil service

employee is eligible to apply for an SES position, they will not necessarily have taken part in a formal career development program. (OPM, n.d.) While not required, a civil service employee may have received training in the SESCO. The SESCO, a competitive program, is a 12-month program that provides the candidates with formal training, at least 4 months of developmental assignments, and an SES mentor. The SESCO is governed by 5 CFR §412.302 and establishes merit system principles. (OPM, n.d.)

There are a select few opportunities (vacancies) announced in USAJobs within any given year for the SESCO program, thereby reducing the chances that the civil service employee will have taken part in this program. Employees who do participate in the SESCO are certified by the QRB and may receive an appointment to an SES position without further competition (OPM, n.d.). The fact that the opportunities are limited and competitive reduces the likelihood of all applicants having had formal senior leadership training in the civil service.

Opportunities for rotational assignments for civil service employees outside the SESCO are limited. On December 15th, 2015, President Obama created an Executive Order (Strengthening the Senior Executive Service) that advised OPM on further steps to improve talent development (White House, 2015). OPM implemented mobility assignments, referred to as rotations, to encourage SES to take advantage of additional career development opportunities. The goal was set at 15% of all SES in agencies holding 20 or more SES positions (White House, 2015).

Advantages of Candidate Development Programs. Allio (2005) and Van Wart (2003), as cited in Lee and Suh (2018), found that while executive leadership and performance and accountability standards may be products of specific traits, managerial knowledge and capacity can be developed through training. In their study of managerial development programs for executive directors in nonprofit organizations, Lee & Suh (2018) found that providing incumbent executives with training and development positively related to the organization's financial, client-service, and performance accountability. This relates to the core competency of business acumen, one of the core competencies for the SFS and SES.

Martinez-Martinez et al. (2021) studied a leadership program used in Spain that included mentoring, executive development courses, and networking, finding the career development program effective, resulting in the promotion of women to executive-level positions. Due to the fact that career development programs are mandated by law for the Foreign Service as is additional training for an FSO throughout their career versus the civil servant who may not have participated in career development programs, career development is one variable controlled for in this study.

Organizational Context and Career Development

The context of the organization that is inclusive of foreign service and the civil service is essential for research involving competition, career development, and promotion. Edwards and Turnball (2013) contended that cultural context is not given enough attention in leadership development and that leadership behavior should be evaluated across different contexts and cultures. Raelin (2004, as cited in Edwards &

Turnball, 2013) suggested that leadership capacity can be developed throughout organizations and societies.

Organizational culture leads to implementing policies that impact the rate and the proportion of women advancing to the highest levels of the federal government. Research findings from Goodman et al. (2003) indicate that the organizations that emphasized the promotion and development of employees were more likely to have women in higher-level management positions. These findings were consistent with those of Morrison and Von Glinow (1990), who found that women benefited from formal mechanisms for promotion and development. (p. 493). Gul et al. (2018) conducted a quantitative study on the effects of an organization's culture and the relationship between job satisfaction and job performance in Pakistan and Afghanistan, finding that power-distance was not a moderating factor for job satisfaction or job performance.

Mentoring

Mentoring can be a crucial element of career development in any organization. Baran & Zaraycki (2021) completed a multitool comparative analysis of mentored and nonmentored employees, finding that participation in mentoring significantly increased the probability of promotion. Linehan and Scullion (2008) concluded that women might miss opportunities for global appointments in part because they lack mentors, sponsorship, and networking and that there were competitive advantages from increasing mentorship for women and reducing barriers to women participating in networking. In a study of the public sector and finance and business service industry, Tharenou (2005) found that while mentor support increased women's advancement opportunities, female

mentors had the most significant effects, both positively and negatively. The results of Tharenou's 2005 research revealed that while mentorship increased women's current and prospective promotion, it did not increase men's advancement.

In a study of CEOs, research conducted by Fitzsimmons et al. (2014) found that mentorship was a key role for both men and women; however, it was more instrumental for women. Linehan (2000), as cited in Shortland (2014), found role models to be an essential and critical part of women's participation in international roles, while Shortland (2014) found those role models to be of greater importance for female expatriates when undertaking short-term or rotational assignments. Mentorship is one of the variables within this quantitative study. Careers within the Foreign Service begin with mentoring. They include four components: domestic tour mentoring, mentor group dialogues for newly hired employees, situational mentoring, and mentoring at the FS-01 level for the FSOs interested in advancing to the highest senior ranks. (3FAM 2710, April 1, 2022).

Summary and Conclusions

Chapter 2 provided the framework and theories applicable for a quantitative research study to advance an understanding of whether public administration policies that implement and promote enhanced career development, mentoring, and competition led to an forecast of increased representation of women in the SFS. The study incorporated several variables which may facilitate the promotion of women at a proportionate rate to men to the level of SES. Chapter 3 provides the research design, methodology and data analysis plan for this study.

The theoretical framework for this study was founded on the convergence of the IAD framework, game theory, and the glass cliff theory. Incorporating game theory and the glass cliff theory into the IAD framework provides a more extensive framework, allowing a more profound analysis of the variables that may impact the selection for and advancement of women into the SES. Game theory provides the elements of strategic thinking that each individual utilizes throughout their career, while the glass cliff theory explicitly addresses the barriers that women face as they seek to promote at the highest levels of the federal government. Each theory incorporates key elements applicable to the research while aligning with the IAD framework. Goodwin et al. (2020) found that a sense of power for women was related to their desire to pursue leadership opportunities. An individual's views of power regarding either the ranking of a position or the desire to lead an organization may impact when the individual seeks opportunities for career development training or the times to seek promotional opportunities.

Although there is extensive literature on game theory as well as the glass cliff theory, there is a gap in literature on the inclusiveness of game theory and the glass cliff theory and the intersection of promotions into the highest levels of the foreign service and civil service. Ryan and Haslam (2004) examined the performance of FTSE 100 companies, finding that women were more likely than men to be appointed to boards of companies that were consistently performing poorly. Ryan and Haslam research concluded that women were more likely to be promoted to lead during periods of crisis or downturns and they coined what is now known as the glass cliff phenomenon. Considerations of the level of risk in a particular position or location is part of the

strategic decision-making process that FSOs make as they seek to promote throughout their tenure in the Foreign Service. Understanding the variances between the foreign service and civil service as it pertains to promoting to the highest levels of management, SES or SFS, was essential to this study. A literature review that was inclusive of a review of career development and mentoring is contained in this chapter. Chapter 3 will include the research design, role of the researcher, the methodology and the data analysis plan for this study.

Chapter 3: Research Method

Introduction

The purpose of this quantitative correlation research study was to construct a forecasting model that predicts the effects of policies related to enhanced career development, mentoring, and competition on the representation of women in the SFS within the State Department. The research question was as follows: Based on historical data, what is the forecast for the female promotion rate in the SFS, the equivalent of the SES, within the State Department for the next 5 years? I tested the following hypotheses:

H₀1: There is no significant increase in the forecast for the proportion of women promoted to the SFS within the federal government.

H_a1: There is a significant difference in the forecast of the proportion of women promoted to the SFS.

H₀2: The annual and required competition for positions and duty locations within the Foreign Service does not influence the rate of promotions for FSOs such that women promote at a higher rate to SFS.

H_a2: The annual and required competition for position and duty locations within the Foreign Service influences the forecast of the rate of promotions for FSOs such that women promote at a higher rate to SFS.

Role of the Researcher

This research will provide insight into whether the policies of enhanced career development, the annual and required competition for positions and duty location within

an FSO's career, and extensive career mentorship, result in a forecast with increased in female representation to the most senior levels of the federal government.

A time series analysis was conducted to determine whether these specific variables will increase the proportion of women promoted to SFS. Independent variables consisted of the years, the number of men who competed for promotion to the SFS and the number of women who competed for promotion to the SFS. The dependent variable was the percentage of women who were promoted to the SFS.

Due to the nature of a nonexperimental quantitative study, the researcher's role was solely as an observer and describer of the research findings that address the research question. The data for this study is exclusively secondary and was obtained from annual reports and data from the State Department. The data consisted of summary-level data from 93 types of Foreign Service careers and spanned 9 years. The number of individuals competing for promotion during the 9-year time frame was 4,524, indicating a large data set; however, only the summary data were available. Interpretation of the data is based on a scientific approach. I maintained objectivity by using a systematic empirical approach. The data is available to the general public; therefore, there are no conflicts of interest or ethical issues.

Research Design and Rationale

The research design chosen for this study was a quantitative correlational approach. An ARIMA time series analysis approach was taken to forecast the effect of the policies of career mentoring, forced promotion, and enhanced career development to determine if there is an increased representation of women to the SFS. The purpose of

this quantitative correlation research study was to construct a forecasting model that predicts the effects of policies related to enhanced career development, mentoring, and competition on the representation of women in the SFS. The independent variables are the number of FSOs competed, the number of women competed, the number of women competed, the percentage competed, career development training, mentoring, and forced promotion. The dependent variable was the rate of promotion of women promoted to the SFS.

The rationale for selecting a correlational regression and time series analysis was due to obtaining a large amount of data at a summary level. Because the study includes multiple variables that may influence each other, a research design with correlational regression is appropriate for analyzing the variables which may forecast a greater proportion of women advancing to the SFS. The study requires hypothesis testing to determine if there is a significant forecast for the next 5 years. Null hypotheses are needed to support a decision to rule out the potential relationship between variables. (Babble, 2017; Burkholder et al., 2020). A regression analysis strengthens the correlation analysis (Warner, 2021).

Methodology

A quantitative correlation study is the most appropriate research method to address the research question. The study involved collecting secondary data from annual reports and data sets from the State Department. The application of secondary data collection is considered reliable, accurate, and allows other researchers to replicate data collected at different points (Frankfort-Nachmias et al., 2015).

Population

The target population consisted of Foreign Service employees. I obtained summary-level data from the State Department. The data set consisted of a large group of subjects who were geographically dispersed both domestically and globally. Within the data set were 4,525 FSOs who competed for promotion to the SFS from 2015 to 2023.

Instrumentation and Operationalization of Variables

The dependent variables were the number and percentage of women promoted to SFS. This study relied on the enhanced career development training, mentoring, and forced competition that is mandated for FSOs as compared to civil service. The independent variables included years, number of FSOs competing for promotion, the number of men competed for promotion, the number of women competed for promotion, enhanced career development, career mentoring, and forced promotion,

Data Analysis Plan

The data analysis plan outlines the researcher's approach to collecting, decoding, testing, and interpreting the secondary data. All data used was secondary data that is publicly available. The data analysis plan included the following steps: software used for analysis, research questions and hypotheses, statistical tests, the rationale for the control factors, and an interpretation of the results. The selected software for this quantitative study is version 28 of IBM's SPSS statistical software program.

Summary

In this chapter, I outlined the research design for conducting a time series analysis and correlational regression research study of how the variables of enhanced career

development, mentoring, and forced promotion may contribute to women advancing in proportionate rates as men to the highest levels of federal service, the SFS.

Chapter 4: Results

Introduction

Women continue to be underrepresented in the most senior management and leadership positions. The purpose of this quantitative correlation research study was to construct a forecasting model that predicts the effects of policies related to enhanced career development, mentoring, and competition on the representation of women in the SFS within the State Department. In this chapter, I describe the results of the data analysis and results of the ARIMA model forecast. The research design chosen for this study is a quantitative correlation regression approach. An ARIMA (0,0,0) model design to forecast the next 5 years was conducted in SPSS. The ARIMA forecast was first completed in SPSS and then contrasted to AI results from Google Gemini and Bing Copilot to evaluate whether the forecast model was consistent with AI forecasts in predicting the promotion rate for women into the SFS.

The data set consisted of summary-level data from the State Department on the careers of FSOs spanning 9 years. This data included 4,525 FSOs who competed for promotion to the highest level of service. The rationale for selecting a quantitative correlational design is the capability to collect secondary data with a large sample size. Because the study included multiple variables that may influence each other, a research design with correlation regression was appropriate for analyzing the variables contributing to a more significant proportion of women advancing to the SFS.

I sought to answer the following research question: Based on historical data, what is the forecast for the female promotion rate in the SFS, the equivalent of the SES, within

the State Department for the next 5 years? To answer the research question, I postulated and tested the following null and alternative hypotheses:

H₀1: There is no significant increase in the forecast for the proportion of women promoted to the SFS within the federal government.

H_a1: There is a significant difference in the forecast of the proportion of women promoted to the SFS.

H₀2: The annual and required competition for positions and duty locations within the Foreign Service does not influence the forecast of the rate of promotions for FSOs, such that women do not promote at a higher rate to the SFS.

H_a2: The annual and required competition for position and duty locations within the Foreign Service influences the forecast of the rate of promotions for FSOs such that women promote at a higher rate to the SFS.

The dependent variables included the number and percentage of women promoted to the SFS. The independent variables included years, the number of FSOs competing for promotion, the number of men who competed for promotion, the number of women who competed for promotion, the rate of promotion for women, enhanced career development, career mentoring, and forced promotion,

Data Collection

The data analysis plan outlines the researcher's approach to collecting, decoding, testing, and interpreting the secondary data. All data used was secondary data obtained from the public website for the State Department. The summary-level data were obtained throughout 2020–2024 and is inclusive of 4,524 FSOs within 92 types of careers who

competed for promotion to the highest level of service in the Foreign Service. The State Department site has data for all grade levels of FSOs; however, only the grade levels for those competing for promotion to the SFS are included in this data set.

The maximum number of FSOs competing within a year was 421 with the mean being 49.18 among the 92 types of career services. The maximum for percentage of men promoted was 100% with the mean at 12.49%. The maximum for percentage of women promoted was 75% with the mean at 9.24%. The data analysis plan included the following steps: software used for analysis, research questions and hypotheses, statistical tests, the rationale for the control factors, and an interpretation of the results.

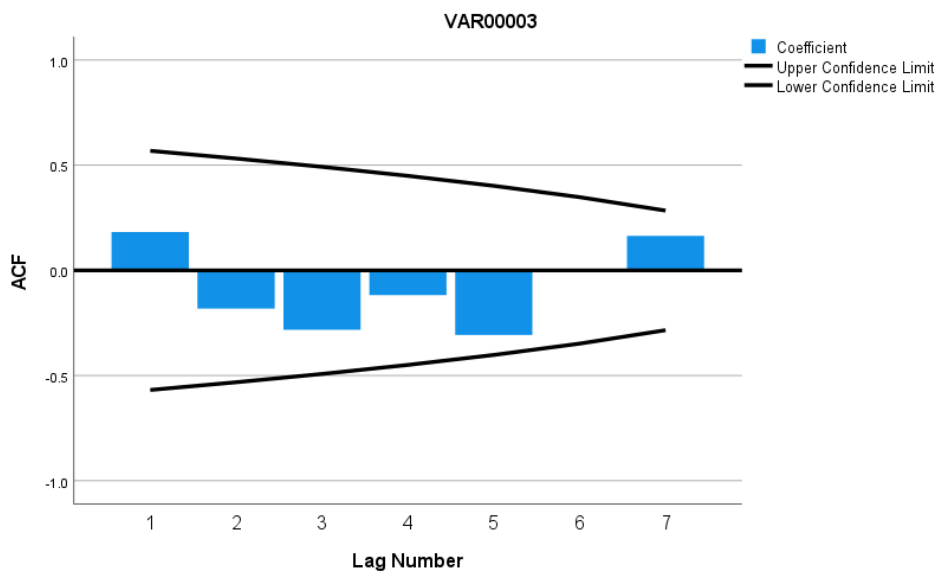
Results

I calculated descriptive statistics (i.e., mean, mode, median, and standard deviation) for the variables of interest: FSOs-SES competed, number of FSOs promoted, male promoted, male percentage promoted, female promoted, and female percentage promoted. The sample size—number of careers—was 92 for each variable. The results are shown in Table 2 and reveal that the mean for FSOs who competed for promotion was 49.18 ($SD = 82.968$). For the variable FSOs promoted, the mean was 7.0918 ($SD = 16.1159$). The mean for male percentage promoted was 12.4901 ($SD = 18.61276$) as compared to 9.2415 ($SD = 17.3983$) for female percentage promoted.

Table 2*Descriptive Statistics*

	N	Minimum	Maximum	Mean	Std.Deviation
FSOs (FE-MC/FE-CM) Competed	92	1	421	49.18	82.968
Number of FSOs Promoted	92	.00	77	7.0978	16.11569
Male Promoted	92	0	39	2.85	6.022
Female Promoted	92	0	34	1.89	4.832
Male Percent Promoted	92	.00	100	12.4901	18.61276
Female Percent Promote	92	.00	75	9.2415	17.39683

I then turned my attention to the ARIMA model. This analysis involved a time series data set of 9 years, beginning in 2015 and ending in 2023, and the corresponding female promotion rate. A time series model graph is shown in Table 3. Examining the first-order autoregressive ARIMA model, as shown in Figure 1, reveals white noise in the series of lagged autocorrelations. The pattern indicates a dramatic decrease in the promotion rate of women from 2019 to 2021. One possible explanation for this is the global COVID pandemic, which affected all industries worldwide during this time. The first autocorrelation function (ACF) is presented in Table 4 and is followed by the autocorrelation graph in Figure 2. Table 5 reflects the results of the partial autocorrelation while the partial autocorrelation graph is shown in Figure 4. The partial autocorrelation with seven lags indicates significance at only one lag, Lag 6.

Figure 1*Autocorrelations***Table 3***Time Series Model*

Series Var00003

Box-Ljung Statistic

Lag	Autocorrelation	Std. Error ^(a)	Value	df	Sig ^(b)
1	.182	.284	.411	1	.522
2	-.182	.266	.876	2	.645
3	-.282	.246	2.192	3	.533
4	-.118	.225	2.466	4	.651
5	-.307	.201	4.797	5	.441
6	-.004	.174	4.798	6	.570
7	.164	.142	6.129	7	.525

a The underlying process assumed is independence (white noise).

b Based on the asymptotic chi-square approximation.

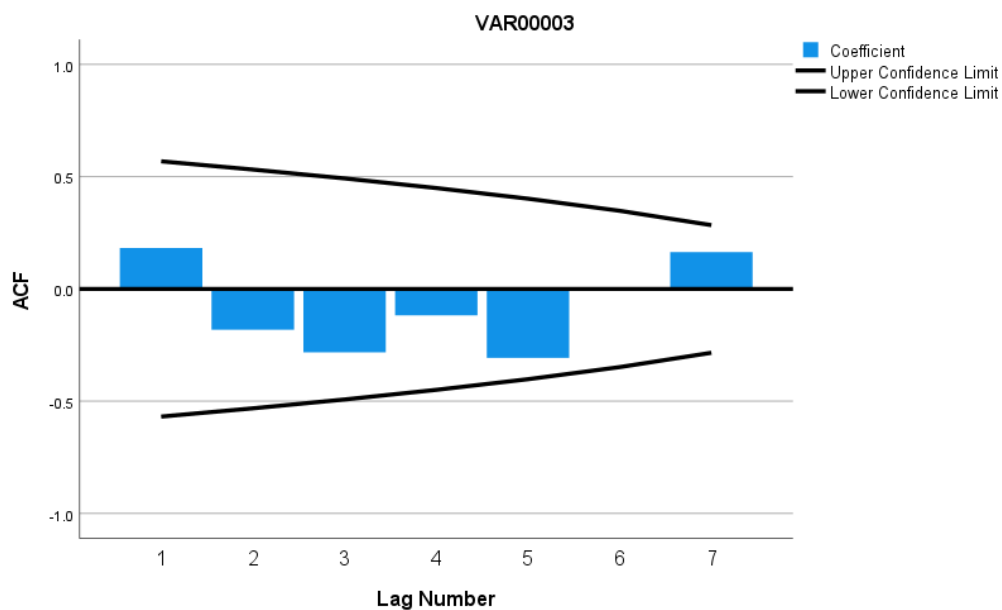
Table 4*Autocorrelations*

Series VAR00003

Lag	Autocorrelation	Std. Error ^a	Box-Ljung Statistic		
			Value	df	Sig. ^b
1	.182	.284	.411	1	.522
2	-.181	.266	.876	2	.645
3	-.282	.246	2.192	3	.533
4	-.118	.225	2.466	4	.651
5	-.307	.201	4.797	5	.441
6	-.004	.174	4.798	6	.570
7	.164	.142	6.129	7	.525

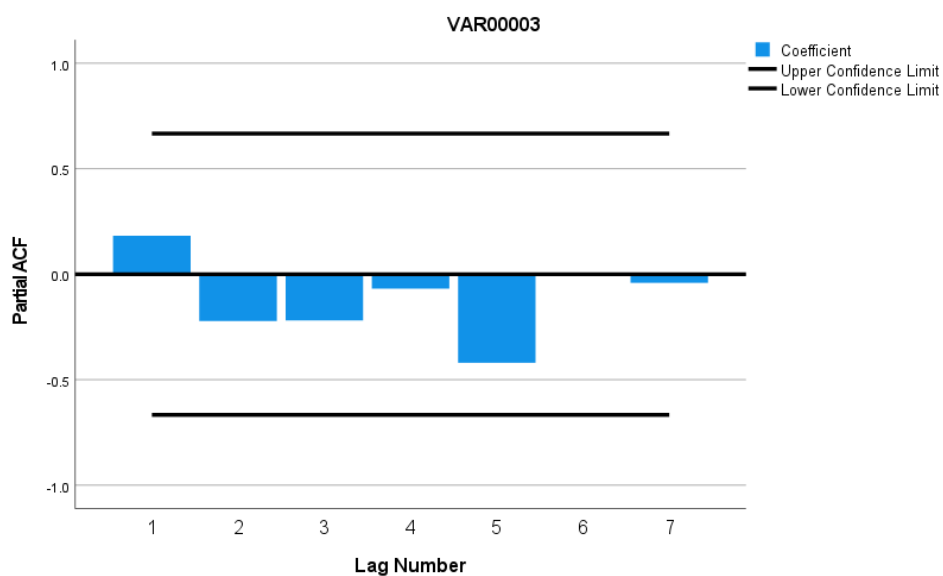
^a. The underlying process assumed is independence (white noise).

^b. Based on the asymptotic chi-square approximation.

Figure 2*Autocorrelation Function Graph***Table 5***Partial Autocorrelations*

Series VAR00003

Partial		
Lag	Autocorrelation	Std. Error
1	.182	.333
2	-.222	.333
3	-.219	.333
4	-.069	.333
5	-.420	.333
6	.000	.333
7	-.041	.333

Figure 3*Partial Autocorrelation Graph*

To evaluate H_01 and H_02 , I then conducted a forecast using the ARIMA model (0,0,0) in SPSS. The residual analysis suggests that the ARIMA (0,0,0) model adequately captures the lack of autocorrelation and the white noise in the data. A summary of the ARIMA model's performance metrics is shown in Table 6. An ARIMA model was fitted to the time series data, resulting in the following fit statistics: R-squared = -0.020, RMSE = 2.210, MAPE = 71.119, MaxAPE = 355.185, MAE = 1.816, MaxAE = 4.085, and Normalized BIC = 1.830.

Table 6*Model Fit Summary*

Fit Statistic	Mean	SE	Minimum	Maximum	Percentile						
					5	10	25	50	75	90	95
Stationary R-squared	1.332E-15	.	1.332E-15	1.332E-15	1.332E-15	1.332E-15	1.332E-15	1.332E-15	1.332E-15	1.332E-15	1.332E-15
R-squared	1.332E-15	.	1.332E-15	1.332E-15	1.332E-15	1.332E-15	1.332E-15	1.332E-15	1.332E-15	1.332E-15	1.332E-15
RMSE	2.188	.	2.188	2.188	2.188	2.188	2.188	2.188	2.188	2.188	2.188
MAPE	67.793	.	67.793	67.793	67.793	67.793	67.793	67.793	67.793	67.793	67.793
MaxAPE	329.952	.	329.952	329.952	329.952	329.952	329.952	329.952	329.952	329.952	329.952
MAE	1.848	.	1.848	1.848	1.848	1.848	1.848	1.848	1.848	1.848	1.848
MaxAE	3.794	.	3.794	3.794	3.794	3.794	3.794	3.794	3.794	3.794	3.794
Normalized BIC	1.811	.	1.811	1.811	1.811	1.811	1.811	1.811	1.811	1.811	1.811

The Ljung-Box test for serial correlation results is insignificant, indicating no significant evidence of autocorrelation in the residuals (see Table 7).

Table 7

Model Statistics

Model	Number of Prediction	Stationary R-squared	Model Fit Statistics		Ljung-Box Q(18)		Number of Outliers
			Normalized BIC	Statistics	DF	Sig.	
VAR00003-Model_1	0	-2.220E-16	1.83	-	0	.	

I examined the residual ACF to assess model accuracy. The residual ACF values at different lags are shown in Table 8. The ACF values at Lags 1 through 8 were as follows: 0.175, -0.220, -0.235, -0.075, -0.256, -0.061, 0.127, and 0.045. ACF value at Lag 1 is 0.175, indicating a mild positive correlation. At Lag 2, the ACF is -0.220, showing a moderate negative correlation, which continues at Lag 3 with an ACF of -0.235. Lags 4 through 6 exhibit smaller ACF values, with Lag 5 having the most significant negative correlation of -0.256. Lags 7 and 8 show small positive correlations of 0.127 and 0.045, respectively.

Table 8*Residual Autocorrelation Function*

Model		1	2	3	4	5	6	7	8
Var00003-Model_1	ACF	.175	-.220	-.235	-.075	-.256	-.061	.127	.045
	SE	.333	.343	.359	.375	.377	.396	.397	.401

The partial autocorrelation function (PACF) of the residuals from the ARIMA model helps identify any remaining correlations after accounting for the fitted model. The residual PACF values for the ARIMA model were examined to assess model adequacy. The PACF values at Lags 1 through 8 were as follows: 0.175, -0.259, -0.156, -0.062, -0.364, -0.047, -0.042, and -0.187. Significant partial autocorrelations were observed at Lags 2 and 5, suggesting that the residuals are not entirely uncorrelated. The residual PACF values at different lags are presented in Table 9. The PACF at Lag 1 is 0.175, indicating a mild positive partial correlation. At Lag 2, the PACF is -0.259, showing a moderate negative partial correlation, followed by -0.156 at Lag 3. Lag 4 shows a more negligible negative partial correlation of -0.062, whereas Lag 5 has a more substantial negative partial correlation of -0.364. The PACF values for Lags 6 through 8 are relatively small, indicating minor partial correlations of -0.047, -0.042, and -0.187, respectively. Although autocorrelations might exist, they are not statistically significant.

Table 9*Residual Partial Autocorrelation Function*

Model		1	2	3	4	5	6	7	8
Var00003-Model_1	PACF	.175	-.259	-.156	-.062	-.364	-.047	-.042	-.187
	SE	.333	.333	.333	.333	.333	.333	.333	.333

Using the ARIMA (0,0,0) model, the forecast for the promotion rate for women to the SFS is presented in Figures 4 and 5. The forecast reflects 5.23% for 2024 through

2028. The upper control limit for 2024 through 2028 is 17.95, and the lower control limit is 1.04. I then used Google Gemini to conduct an ARIMA (0,0,0) model forecast. The Gemini results forecast a 4.94% female promotion rate for each the next 5 years. Last, I input the 9 years of female promotion rates and years into the AI Bing Copilot tool to forecast the next 5 years. The AI Bing Copilot results indicate a forecast of 4.19% for each of the next 5 years.

Figure 4

Forecast

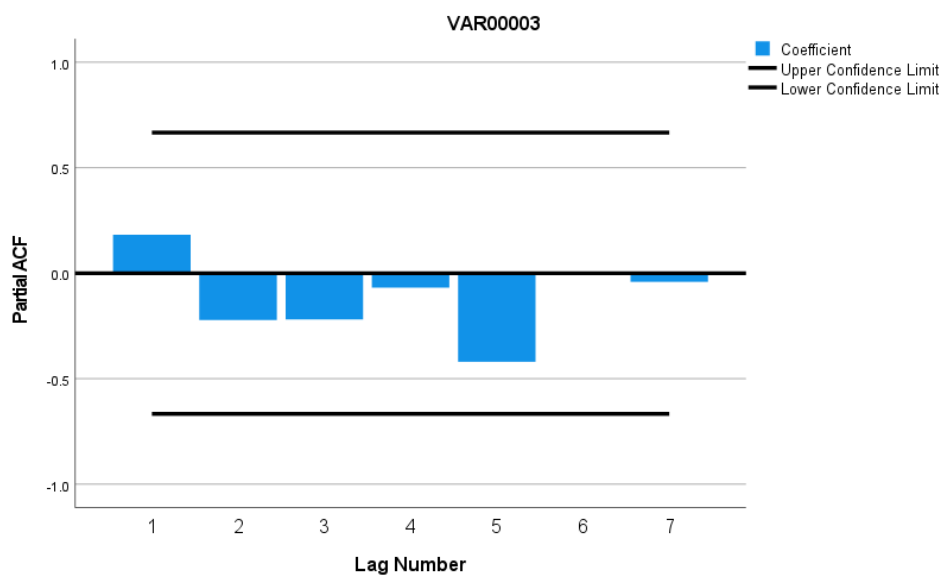
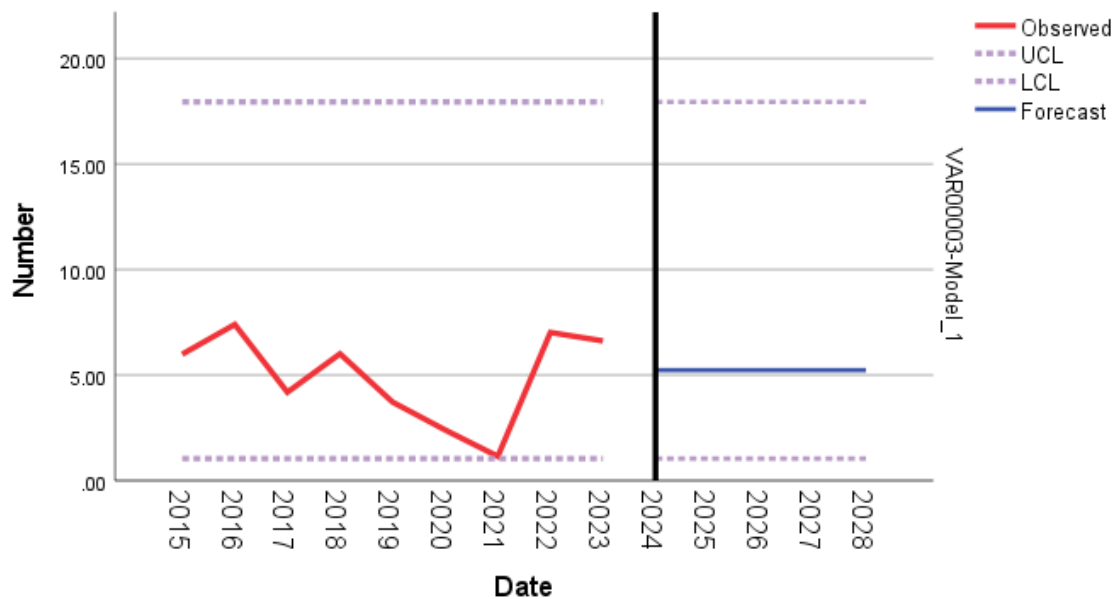


Figure 5*Time Series Chart*

In summary, three forecast methods, SPSS and two AI-generated forecasts, were analyzed to answer the research question and test the two null hypotheses. The rate of promotion for women in the Foreign Service to the highest level of federal service, the SFS, ranges from 5.23% (SPSS) to a low of 4.19% (Bing Copilot) for the next 5 years.

The results show that the estimate for the ARIMA (0,0,0) model is 1.465. The standard error is 2.06. The t-value is 7.125, and the significance level is less than .001. There is a significant increase in the forecast for the proportion of women promoted to the SFS within the federal government, H_01 must be rejected and H_{a1} accepted. The results further indicate that null hypothesis for H_02 cannot be rejected. In Chapter 5, the results of this study will be discussed further, and placed in context. Additionally, the

limitations of the study will be presented, along with recommendations for future research.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

Extensive research has shown that women are underrepresented in management positions. The Government Accountability Office (2023) found that female representation in management in the U.S. government increased only slightly between 2018 and 2021 and that a pay disparity existed. This quantitative correlation research study aimed to construct a forecasting model that predicts the effects of policies related to enhanced career development, mentoring, and competition on the representation of women in the SFS within the State Department. Chapter 5 includes a summary of results, limitations, interpretations of findings, recommendations, implications for positive social change, and a conclusion.

The foreign and civil service personnel systems vary in several ways, including the hiring and promotion process, career development and training opportunities, and retirement plans. In contrast to the FSO, which must advance to SFS within a specified time or be forced to retire, a civil service employee's career does not entail forced career advancement or mandatory retirement. Most promotions within the federal government occur within the civil service when an employee chooses to apply for a position that will result in a promotion or a position that entails career development opportunities that will improve their skill sets as they seek to advance.

Another noteworthy difference between foreign service and civil service occurs within the realm of career development training. Career development opportunities for civil service are optional as people advance to a grade where they may compete for an

SES position. Training opportunities depend primarily on funding availability, which may or may not be available depending on the agency's budget. Conversely, training funds are allotted explicitly for FSOs for foreign languages and career-enhancing development. These distinctions have created part of the disharmony within a department with dual personnel systems.

The theoretical predictions are based on research on the glass cliff and game theory. An FSO must continuously compete for upward mobility throughout their career, or they will be forced to quit or retire early. An ARIMA time series analysis approach was taken to forecast the effect of the policies of career mentoring, forced promotion, and enhanced career development to determine if there is an increased representation of women in the SFS. Within the 9 years of data, the percentage of women promoted to the SFS ranged from a low of 1.15% in 2021 to a high of 7.4% in 2016. It is worth noting that 2020 was the peak of the global COVID pandemic (Katella, 2021).

The research question was as follows: Based on historical data, what is the forecast for the female promotion rate in the SFS, the equivalent of the SES, within the State Department for the next 5 years? The hypotheses were as follows:

H₀1: There is no significant increase in the forecast for the proportion of women promoted to the SFS within the federal government.

H_a1: There is a significant difference in the forecast of the proportion of women promoted to the SFS.

H₀₂: The annual and required competition for positions and duty locations within the Foreign Service does not influence the rate of promotions for FSOs such that women are promoted at a higher rate to SFS.

H_{a2}: The annual and required competition for position and duty locations within the Foreign Service influences the forecast of the rate of promotions for FSOs such that women are promoted at a higher rate to SFS.

Interpretation of the Findings

Using the ARIMA (0,0,0) model, the forecast for the promotion rate for women to the SFS was 5.23% for 2024 to 2028. The upper control limit for 2024 through 2028 is 17.95, and the lower control limit is 1.04. Next, an ARIMA (0,0,0) model forecast was conducted using Google Gemini. The results forecast a 4.94% female promotion rate for the next 5 years. Lastly, the 9 years of female promotion rates and years were input to forecast the next 5 years using an ARIMA (0,0,0) model with the AI Bing Copilot tool. The results of Bing Copilot indicate a forecast of 4.19% for each of the next 5 years.

SPSS ARIMA model (0,0,0) indicates that the parameter is statistically significant by a t-value of 7.125 ($p < 0.001$) with a standard error of 0.206. Based on the results, *H₀₁* can be rejected and *H_{a1}* accepted (i.e., there is a significant difference in the forecast of the proportion of women promoted to the SFS). Furthermore, *H₀₂* can be rejected and *H_{a2}* accepted (i.e., the annual and required competition for position and duty locations within the Foreign Service influences the forecast of the rate of promotions for FSOs such that women are promoted at a higher rate to SFS).

This study reflects three forecasts (SPSS, Google Gemini, and Bing Copilot) with female promotion rates to the SFS ranging from 5.23% to 4.19%. This range aligns with results from a recent quantitative study. Marvel (2021) found that women who hold positions in dominant occupations or STEM positions had a higher promotion rate than those that are in non-dominant positions. The percentage of women in dominant positions promoted to SES ranged from 13% to 14% whereas the percentage of women in non-dominant positions promoted to SES ranged from 5% to 6%. In a 2020 study, Field Southern and Yore found the glass ceiling remains for female representation on boards and forecast that it would take 45 years at the same trajectory to reach a level where 50% of the board were represented by women. In a recent study, the Government Accountability Office (2023) found that women remained underrepresented in management positions and that the percentage had increased only 2% between 2018 and 2021.

This study is important in that the policies in place within the Foreign Service of enhanced career development, mentoring, and forced competition have had some impact on increasing the rate of representation for women to the SFS. The data indicates that fewer women are entering the Foreign Service than men and fewer women than men are competing for promotion to the highest levels of federal service. More research is needed to determine further policies that could advance the rate of promotion for women to the SFS. This finding fills a gap in research in the literature regarding the link between forced competition, ongoing mentoring, enhanced career development, and a forecast for women advancing in proportionate rates to the highest levels of federal service.

Limitations of the Study

This study has at least three limitations. The first limitation is that data collection was limited to secondary, summary-level data. The second limitation is that the study is limited to one department within the federal government. A third limitation is that variables such as the quality of an interview, the experiences that an applicant may have, as well as the locations that an FSO may have served at could all be significant factors that a QRB or promotion board considered when determining who to select and therefore promote to the SFS.

The secondary data for this study was limited to data obtained from the State Department. The data set from the State Department consists of a large group of subjects who are geographically dispersed domestically and globally. The summary-level data included 4,508 FSOs within 92 types of careers who competed for promotion to the highest level of service in the Foreign Service. The data were limited to the ranks equivalent of a GS-15, FSO1, and above.

Recommendations

Recommendations for future research on the impact of enhanced career development training, ongoing mentoring, and competition should include a mixed-methods analysis and inclusiveness of other federal departments. A more extensive study could be conducted if one could obtain the data from a database. There is a need for additional studies that include additional departments with foreign and civil service employees. Another recommendation would be for mixed research studies to obtain

subjective information on what promotion boards look for in the best-qualified candidates as they promote candidates to the SFS or equivalent, the SES.

It is also not unreasonable to expect that subjective and other quantitative factors are relied on when a hiring panel determines who to promote. Factors such as the length of career, age when applying, political acumen (a subject factor that could be partially based on where an applicant may have spent the majority of their career) when applying for a SES or SFS position, may be conducted to expand the scope of the study.

Conducting interviews through a mixed-methods study could bring other factors not identified here to light.

A more extensive study could be conducted if one could obtain the data from a database. It appears that this data is unpublished but available. The data for a more extensive time series on promotions appears to be available going back to the late 80's and could conceivably be added to the existing data. Furthermore, career development training, ongoing mentoring, and competition variables could be available for the total number of individuals over time. If that is the case it would then be possible to measure the impact of these variables on promotion rates.

Implications

This study has several implications for positive social change, beginning with enhancing awareness that the forecast for women promoting to the level of SFS is a low percentage; however, this is due in part to the fact that a very low number of people (male or female) make it to the ranks of SFS. The SFS is a deliberately highly competitive process as determined by statute. Additionally, the lower numbers are indicative of fewer

women at entry and middle levels. Further research is recommended to determine policies or work conditions that may impact a woman's decision to enter the Foreign Service.

The study advances positive social change by bringing awareness that some policies, such as forced promotion, ongoing mentoring, and career development training, are significant; however, these may not be as impactful as expected. Policymakers may need to consider other methods or programs that contribute to the factors that a QRB or promotion board ranks when determining whom to promote. These factors may include determining whether a lack of comparable experiences, education, tenure, or subjective factors resulted in fewer women seeking and then promoting at a proportionate rate to the SES or SFS.

Conclusion

The overall question that underpinned this study was, Given the absence of detailed policy impact data, what is the forecast for the female promotion rate in SES or equivalent positions within the State Department for the next 5 years based on aggregate time series data? The findings of this study were statistically significant. The results are essential as policymakers, government officials, and business entities may want to consider further policies to increase the proportion of women entering the Foreign Service and then competing to the levels of SFS. A mixed-methods analysis that included interviews with those who have served on QRBS and promotion boards could provide insight into whether other variables would increase the skill such that women advanced in proportionate rates as men to the highest levels of government service. Advancing to

these levels begins much earlier in one's career, and policymakers should consider other ways to advance an equal playing field for men and women.

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