

**HIRING, MOTIVATING, AND RETAINING TECHNICAL TALENT IN THE  
PUBLIC SECTOR**

by

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## **Dedication**

To all those who grew up, or are growing up, in poverty or a challenging environment.

This doctoral degree is a testament to the power of education, how family support and access to higher education can take a child from poverty in a developing country to a successful professional career in the United States, and a doctoral degree from a Swiss University.

Embrace education as it will change your life...

## **Acknowledgments**

I am grateful to my mother; may her memory be a blessing for instilling the power of education in me from a young age.

To all those great leaders who taught me how to become one and to those managers who showed me what not to do.

I want to thank Raveen Chhabrani for helping me edit this dissertation.

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ABSTRACT

**HIRING, MOTIVATING, AND RETAINING TECHNICAL TALENT IN THE  
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2024

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**ABSTRACT:** Public entities rely heavily on technology to carry out their missions. Highly skilled employees are needed to support the IT infrastructure, develop applications, and maintain and secure their network and the flow of information. As the cost of hardware decreases, the cost of IT talent increases dramatically. The public sector competes with the private sector for these resources. This study explores the tools available for IT managers in the public sector to attract, retain, and motivate employees to achieve high-performance teams.

Utilizing a survey and interviews with IT employees of several California State departments, this study explores the most important reasons for public servants to join the public sector and the factors that motivate or demotivate them to stay at their jobs and perform at their top.

The public sector offers very competitive extrinsic motivators such as job security, pay, retirement, and benefits, and public servant IT managers can utilize the intrinsic motivators appealing to their team members such as recognition for their contributions, career growth, participation in the decision process, telework, and mature IT governance. This study recognizes the critical role of the direct supervisor on the level of engagement and motivation of their team. The servant leader style supports the appropriate environment for IT talent to thrive; technical professionals like solving problems and prefer the independence to do it their way. They like clear directions and well-established processes promoting a sense of belonging with good communication and personal relationships and supporting their career development. This study's survey and interviews identified the impact, often overlooked by upper management, of hiring vendors, implementing off-the-shelf solutions, and not sharing the long term strategy.

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# CHAPTER I: INTRODUCTION

Chapter I comprehensively describes the obstacles that public sector IT management confronts in acquiring and retaining expert human resources. It examines the complexities of managing a team of skilled individuals and maintaining their motivation to achieve optimal results. The chapter also outlines the research problem, study object, and study objectives and the significance of the research in public sector IT management.

Furthermore, the chapter thoroughly analyses recruitment and retention in the public sector, such as compensation, career advancement, job satisfaction, and organizational culture. It also explores the challenges IT managers face when managing a diverse workforce. In summary, the first chapter provides a detailed and insightful analysis of the challenges and complexities that public sector IT managers face, setting the stage for the remainder of the study.

## **1.1 Introduction**

Information technology (IT) and digital skills are a set of competencies that revolve around the use and management of digital technology. These abilities span a broad spectrum of areas, including computer hardware and software, application development and maintenance, database support, networking, cybersecurity, website development, social media, project management, testing, integration, and cloud platforms. In today's digital age, proficiency in these areas is essential for individuals and

organizations. It is critical not only for the smooth functioning of day-to-day operations but also for the competitive edge of businesses, the public sector, and the success of academic institutions.

Professionals across various industries must thoroughly understand IT and digital skills, including IT specialists, software developers, cybersecurity analysts, data scientists, digital marketers, and web developers. Furthermore, these competencies enhance employability and enable individuals to navigate the modern world effectively by facilitating communication, information access, and participation in digital activities. Indeed, the importance of IT and digital skills cannot be overstated.

The rapid digitalization of social networks in the 21st century has drastically transformed society, economies, cultures, and businesses (Castells, 2010). The evolution of the concept of management has run parallel to the advent of the information age, leading to a paradigm shift in the way organizations view their most valuable resource- human capital. Indeed, in this era of intense competition, it is widely recognized that effectively harnessing the potential of individuals within an organization would lead to significant competitive advantages. Consequently, human capital management has emerged as a critical area of focus for organizations seeking to excel in today's rapidly evolving business landscape (Altinöz, 2018).

With the introduction of big data and Artificial Intelligence (AI) technology, digital skills have become crucial for enterprises and public agencies, resulting in a shift in personnel management. Digital transformation involves leveraging digital technologies to streamline corporate and public agency operations, enhance the customer experience, create new business models, and improve overall performance (Piccinini *et al.*, 2015).

The widespread use of digital technologies such as big data, real-time analytics, AI, Internet of Things (IoT), Virtual Reality (VR), and cloud computing systems significantly impacts the talent management approach. In-demand digital talents include cybersecurity, cloud computing, analytics, web development, mobile application design, big data, AI, and robotics. Furthermore, highly sought-after digital talents have customer-centricity, a desire for learning, teamwork, data-driven decision-making, and comfort with uncertainty (Karaboga *et al.*, 2020).

Having digital talent is vital for the future of the workforce, encompassing skills and competencies related to digital technology for specific roles. The lack of digital skills across organizations has emerged as a significant challenge that affects competitiveness and impedes progress in digital transformation, according to a joint survey including over 1,250 people by Capgemini and LinkedIn. (Institute, 2017)

The global workforce is currently confronting a digital talent shortage, which requires a deep understanding of technological advancements and optimal utilization of

expertise and skills within the workforce. Governments, educational institutions, and businesses must collaborate and develop comprehensive digital initiatives addressing the talent shortage.

Local, state, and federal government agencies rely heavily on information technology to achieve their goals. Services such as tax collection, license issuance, infrastructure management, document issuance, registration, education, elections, public health, and legal and judicial systems require this technology and its supporting infrastructure to function efficiently. Given the crucial role of these information systems in public services, they need highly skilled technical staff to maintain and operate them. However, the public sector faces stiff competition from the commercial industry in attracting and retaining talented individuals. Recent research by CompTIA showed that the IT industry's unemployment rate was historically low at 2.2% in November 2023, significantly lower than the national rate of 3.8%. (Figure 1) (Ostrowsi, 2023)

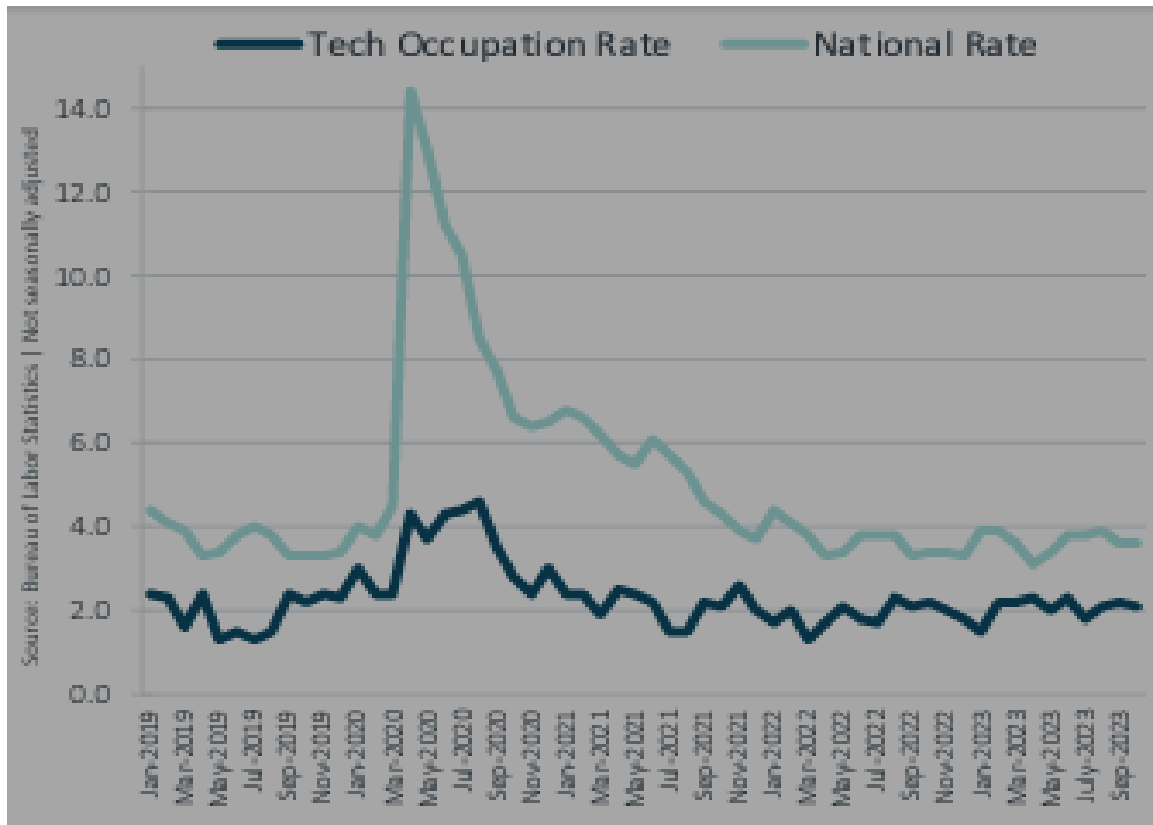


Figure 1: U.S. Unemployment Tech Sector Rate vs. National Rate

This means intense competition for technical expertise in the IT industry, making it challenging for government agencies to recruit and retain highly skilled technical staff. Moreover, it is worth noting that the need for more skilled technical staff is not exclusive to the government sector. Other industries, such as healthcare, finance, and manufacturing, require technical expertise, further exacerbating the talent competition. Therefore, government agencies face significant challenges in attracting and retaining the technical knowledge necessary to manage and operate their information systems.

As mentioned above, the industries have undergone significant transformations due to the introduction of novel technological solutions and innovative approaches. In



particular, the healthcare industry has seen significant strides in developing digital health tools, revolutionizing patient care. Similarly, the finance sector has adopted cutting-edge technologies to enhance the delivery of financial services.

Meanwhile, the manufacturing industry has experienced the implementation of various Industry 4.0 technologies (advanced analytics, automation, Internet of Things, etc.), which have optimized production processes and improved efficiency and require technical expertise, further exacerbating the talent competition. Therefore, government agencies need help attracting and retaining the technical knowledge to manage and operate their information systems. Thus, these agencies must proactively attract, train, and retain highly skilled technical staff. Organizations can adopt various measures to attract and retain qualified employees. These measures may encompass incentivizing competitive compensation packages, rolling out opportunities for professional growth and development, and cultivating a conducive work environment that fosters creativity and innovation. Such strategies can aid in creating a sustainable and productive workforce, enabling organizations to attain their targets and objectives in a dynamically rapidly evolving business landscape.

The acquisition and retention of technical talent in the United States are formidable challenges for both private and public sector organizations in contemporary times. Upon examining the comparison between the unemployment rates in the tech

industry and the national economy, as demonstrated in Figure 1 above, the magnitude of these challenges becomes evident.

When weighing employment opportunities and job offers, candidates prioritize compensation packages, including salary, signing bonus, and annual bonuses. While private sector IT companies are better positioned to offer competitive compensation packages, public sector agencies need more comparable incentives, which impedes their efforts to attract and retain highly skilled technical professionals. As such, public sector managers must adopt innovative and effective recruitment, motivation, and retention strategies to address these challenges.

Moreover, the challenge of acquiring new talent places an additional burden on technical teams. The recruitment process is often lengthy, placing excessive stress on existing resources and potentially diminishing job satisfaction. Thus, implementing efficient recruitment strategies is imperative, and these strategies should include careful planning, streamlining processes, and leveraging technology.

Given these challenges, private and public sector organizations must proactively acquire and retain skilled technical professionals. The inability to do so can have significant implications for technical teams, who are already under pressure to deliver results within tight deadlines. As such, organizations must prioritize the recruitment and

retention of technical professionals and adopt effective strategies to address these challenges.

Employee engagement is a crucial element of effective workforce management, yet it can be challenging for managers to motivate and retain their staff. In 2021, Gallup surveyed employees to assess their engagement levels in the United States. The survey was based on a random sample of over 50,000 full-time and part-time employees throughout the year, and the results were concerning. For the first time in almost a decade, the percentage of engaged workers in the United States fell, with only 34% of employees feeling engaged in their work and workplace. Meanwhile, 16% of employees were actively disengaged, representing an increase from the previous year. (Harter, 2022)

The findings contradict the 2020 survey, which showed that 36% of employees were engaged and only 14% were actively disengaged. This trend persisted in 2023, with 33% of employees engaged and 16% actively disengaged. These results indicate that managers face significant challenges in generating and maintaining employee engagement.

Actively disengaged individuals often experience hostile work environments due to inadequate management, resulting in discontent and disloyalty since their job demands are unmet. It can have detrimental effects on the organization, as disengaged employees

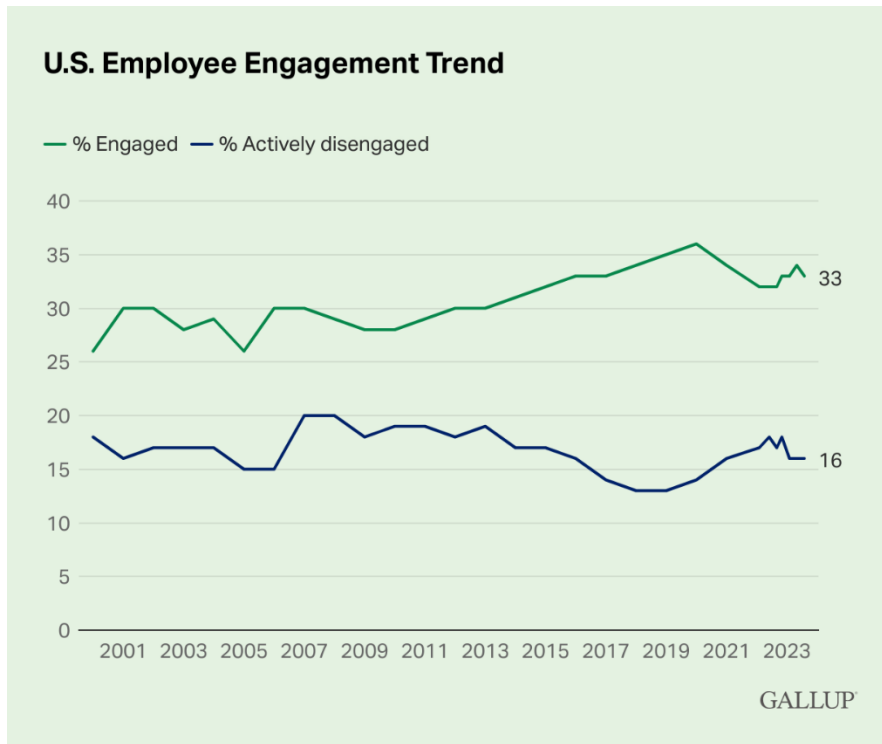
are less productive and more likely to leave their jobs, leading to increased recruitment and training costs.

The survey also showed that overall employee satisfaction in the US was assessed at 21%, slightly higher than last year but 9% lower than in 2009. It highlights the need for managers to focus on improving employee satisfaction in addition to employee engagement.

Figure 2 displays the general levels of employee satisfaction in the United States over the years. Figure 3 shows the US Employee Engagement Trend year averages, indicating a steady decline over the years.



*Figure 2: Overall Satisfaction Among U.S. Employees*



*Figure 3: U.S. Employee Engagement Trend, Annual Averages*

The author of this study is an IT Manager for a large California State Department with over 25 years in the IT industry. The author has been involved in all the stages of the Systems Development Life Cycle (SDLC) and has provided consulting services to State and Federal agencies and private sector organizations in various industries. The author holds a master's degree in business administration (MBA) and has extensive experience managing technical teams as an Information Systems Engineer.

As an IT manager in the public sector, the author experiences firsthand the challenges of acquiring, retaining, and motivating technical talent. Using his experience as a team member, consultant, and employee and now as a manager, the author wants to

research the best practices to develop and maintain high-performance technical teams in the public sector.

## **1.2 Research Problem**

Digital technologies have brought forth a paradigm shift in how occupations, workspaces, and workforces operate, with automation and artificial intelligence (AI) gradually taking over routine administrative tasks. This transformation significantly impacts governments, organizations, and educational institutions, requiring the development of effective action plans and strategies to manage the opportunities and challenges presented by digital technologies. Numerous studies indicate that organizations face difficulties retaining skilled staff, with increasing managers emphasizing the need for a fresh labor pool. It has led to a growing need for digital talent development, which involves recruiting new personnel for specific roles and enhancing the skills of current staff. (Kane *et al.*, 2017)

The significance of recruiting and retaining competent personnel in a digital business environment cannot be overstated, as emphasized by the research conducted by MIT Sloan Management Review and Deloitte. Organizations must identify and retain individuals with the requisite skills and expertise to succeed in the dynamic and evolving IT landscape. The research findings reinforce the importance of prioritizing recruitment and retention strategies tailored to the demands of the technical environment and aligning with the overall organizational goals and objectives. Companies are adopting two primary methods: leveraging digital platforms to access highly competent contractors and consultants in digital talent markets.

At the same time, the other focuses on enhancing the skills and capabilities of current employees through ongoing training programs and career advancement opportunities (Kiron *et al.*, 2016). Successful multinational corporations like Meta (Facebook, Instagram, and WhatsApp), Proctor and Gamble, Alphabet (Google), Universities, and Governments have effectively adjusted their Human Resources (HR) strategies to attract, motivate, and retain digital professionals. (Karaboga *et al.*, 2020)

The creation of a dynamic digital talent marketplace can offer benefits for both companies and digital professionals. Such platforms provide access to resources that meet all technological requirements, together with experts with the most sought-after positions and skills. Counselors act as intermediaries on these platforms to facilitate mutual gain through talent acquisition. Initiatives and regulations that foster individual recognition, a favorable balance between work and personal life, and a collaborative, adaptable work environment can help to retain skilled individuals in a company.

Governments must also modernize their public services by transitioning them into digital platforms to appeal to a skilled workforce. Individuals should promptly adapt to environmental changes and establish mechanisms to comprehend current trends and advancements within a nation to promote the acceptance of new talents, abilities, and policies (Mergel, Gong, and Bertot, 2018). Bringing skilled individuals in the digital field to a nation enhances economic prosperity and advances digital growth (Hanna, 2018).

Access to information and communication technologies is unequally distributed between nations with varying socioeconomic levels, creating a digital divide. The digital

divide refers to the disparities in access to information and communication technologies within societies and is a critical factor that impacts individuals and countries. The extent of this divide can vary greatly and is influenced by various socio-economic factors. The resulting discrepancies in access to information have significant implications for a country's digital talent management needs (Degirmen, Vural, and Ozbukerci, 2016). This gap impacts the speed and extent of information access, influencing a country's need for digital talent management.

To address this issue, governments can develop strategic workforce plans that consider the availability and need for digital workers. They can assist education programs with digital proficiency, assess skill needs, and promote universities to incorporate new subjects in digital technology. Governments must compete with the private sector to attract and retain digital talents. Bureaucracy, inflexible regulations, lack of adaptability, and fixed salary hinder their capacity to recruit digital workers. Investing in digital transformation in public institutions is essential to address this deficiency. Implementing competitive digital government strategies can attract digital talents to public sector organizations by offering a digital culture, flexible work environments, competitive compensation, streamlined public services, modern bureaucracy, training in emerging trends, career advancement opportunities, and high levels of transparency, accountability, and citizen engagement. The present study examines IT managers' challenges in the public sector regarding acquiring, retaining, and motivating technical talent. Drawing on extensive experience as a team member, consultant, employee, and current manager, the author aims to explore strategies for building and sustaining high-performance technical teams in the public sector.



It is widely recognized that government organizations, like private enterprises, require well-managed IT departments to achieve their objectives. Acknowledgment that IT departments require both adequate technology resources and competent individuals is crucial for the success of any public organization.

Public agencies must prioritize identifying the most effective strategies for recruiting, motivating, and retaining their high-performing technical staff to achieve their goals. While most studies focus on the private sector and the entire workforce, a more focused examination of technical staff within the public sector is necessary.

### **1.3 Research Questions and its Objectives**

The study aims to provide public sector IT managers with a thorough and inclusive understanding of attracting, retaining, and motivating their IT workforce. The study seeks to address common questions frequently occupying many IT managers' minds:

1. What tools are available to IT managers when recruiting highly skilled IT professionals who prefer to work with big-name companies like Google, Microsoft, or Apple?
2. Once hired, how do we keep them motivated in the short and long term when financial incentives are unavailable?
3. What other factors should IT managers consider for achieving high-performance teams?
4. What are the recurrent reasons why technical talent leaves public agencies looking for better opportunities?

The result of this study will be valuable to technical managers in the public sector, managers in other areas of the public sector, and managers in the private sector.

#### **1.4 Significance of the Study**

This study is essential for advancing research and understanding of attracting, retaining, and motivating employees, focusing on technical teams within the public sector. Studies on hiring, motivating, and training IT personnel in the public sector have yielded important insights. In 1990, University of Illinois researcher Sharon Mastracci evaluated HR management strategies for recruiting and retaining IT professionals in the U.S. Federal government: “Computer programmers and computer systems analysts made up approximately 1.54% of the U.S. workforce during the years studied period, and nearly 5% of the IT professionals held federal government positions... IT professionals had attained higher levels of education than the overall population, with more than half of IT professionals having earned a four-year college degree or a graduate degree. IT professionals were also more likely to have received some postgraduate education than U.S. workers overall.”

Sharon Dawes, director of the Center for Technology in Government (CTG), stressed the need for public management education to include information strategy and management topics, emphasizing competencies like strategic thinking, system-oriented analytical skills, and complex project management skills (Sharon, 2004). The importance of a good training program in enhancing work motivation among public service servants

cannot be emphasized enough, particularly in the context of increased public complaints (Azmar, Romle, and Ismail, 2015).

These studies together highlight the importance of a nuanced approach to hiring, motivating, and training IT personnel in the public sector, considering factors such as job complexity, HR management strategies, and the development of specific competencies.

This study is fundamental in addressing the need for more research and understanding of recruiting, retaining, and motivating employees, specifically applying it to technical teams in the public sector. Even though this study focuses on more research and data from the United States and California, most concepts are transferable globally to the public sector.

## **1.5 Chapter Summary**

Public agencies at all levels heavily rely on technology to carry out their missions. To support their applications, servers, and databases, provide cyber-security, and any other technological needs, the IT departments of these agencies require skilled employees.

With the U.S. unemployment rate for the tech sector at 2.2% in 2023 (Ostrowski, 2023) (Figure 1), the competition to acquire technical resources for the public and public sector has become extremely difficult.

The existing literature supports that human resource (HR) professionals are central in shaping organizational culture and disseminating job-related features to prospective candidates.

In today's fast-paced technological landscape, organizations must develop HR strategies that cater to IT professionals' specific needs and preferences. Implementing such strategies has become crucial in ensuring optimal performance and retention of this critical workforce. The success of public sector organizations hinges on their capacity to persuade, maintain, and cultivate a proficient and driven workforce. Public agencies at all levels depend heavily on technology to achieve their objectives. Consequently, the IT departments of these agencies require qualified workers to support their apps, servers, and databases, provide cybersecurity, and meet other technological needs. In a nutshell, effective HR management practices are essential for recruiting and retaining IT professionals. According to (Mastracci, 2009), it also highlights the increasing demand for skilled IT professionals in the public sector. Henceforth, Public sector IT managers often need help to offer competitive initial salaries or other perks and benefits compared to their private sector counterparts, leading them to rely on alternative methods to attract, retain, and incentivize their employees.

## CHAPTER II: REVIEW OF LITERATURE

### 2.1 Introduction

The transformative impact of the Information Age on communities, economies, cultures, and organizations in the 21st century has been widely acknowledged by scholars (Castells, 2010). Digital networks have caused significant changes in the structure and organization of various aspects of our personal and professional lives (Van Dijk, 2016), creating a highly interconnected and technologically advanced world. As a result, digital and technical skills have become essential assets for enterprises in the era of information overload (Van Deursen and Van Dijk, 2011). The arrival of big data and AI technologies has significantly transformed work processes. Consequently, talent management strategies have evolved to underscore human capital's pivotal role in driving competitive advantage (Altinöz, 2018).

Against this backdrop, this paper addresses the critical issue of technical talent shortage from multiple perspectives. It argues that digital intelligence is a crucial asset for any nation, and its development requires a deep understanding of technological advancements and the ability to utilize expertise and skills to their fullest potential (Karaboga *et al.*, 2020). Furthermore, the paper contends that the scarcity of digital and technical skills concerns governments, public sectors, and other stakeholders. Collaboration among various sectors is needed to develop and implement strategic plans

to address a country's digital talent shortage. However, managing information systems and technical skills in the public sector presents unique challenges compared to the private sector due to conflicting objectives, political influences, and bureaucratic obstacles. (Onday, 2016)

Overall, this paper underscores the importance of building digital talent as a critical driver of economic growth and societal development in the 21st century. This research aims to assist IT managers in the public sector in selecting, retaining, and motivating their IT staff to improve human capital productivity, thereby creating a conducive environment. The literature review delves into the presentation of numerous research studies carried out in the context of challenges and bottlenecks IT personnel face. The study aims to provide insights, and the objectives are as follows:

1. Finding ways for public sector organizations to attract top-tier IT professionals who prefer to work for renowned corporations such as Google, Microsoft, and Apple.
2. Implementation of approaches to motivate employees in the short and long term without relying solely on financial incentives.
3. Essential factors for building high-performing teams.
4. Reasons behind skilled professionals leaving government agencies for better opportunities.

The findings of this study will benefit technical managers in the public sector and private industry.

## **2.2 Literary Review Strategy**

A detailed literature review was undertaken using a range of keywords in both English and Spanish across various research databases. The research databases are as follows:

- EBSCO
- JSTOR
- ERIC
- ScienceDirect
- IEEE Xplore
- Property
- EconBiz

Search engine services such as Google Scholar and AI-powered Bing were also used to conduct searches utilizing the exact keywords in English and Spanish.

In addition, popular search engines such as Google Scholar and AI-powered Bing were utilized to cover the scope of the relevant material.

Each search result was carefully evaluated, with articles added to a reading list for further in-depth analysis if deemed relevant. Furthermore, references to publications, ideas, or concepts that could add value to the research were also included. The open-source reference manager software Zotero was implemented to manage all the literature, including books, articles, and online publications (see Appendix A).

Research conducted by employment websites such as Indeed.com, ZipRecruiter.com, and Dice.com and consulting companies such as Gartner, Nielsen, and Franklin Covey were also utilized.

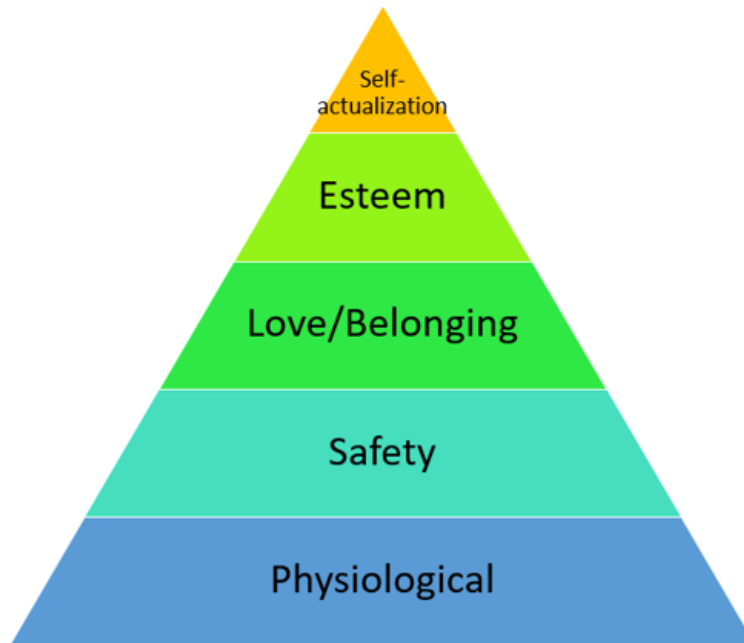
### **2.3 Literary Review on Motivation**

The following text provides a comprehensive overview of some fundamental theories of motivation proposed by renowned psychologists. The subject of motivating employees has been the focus of numerous academic studies, books, and articles. Among the most notable theories in this area is Maslow's hierarchy of needs, which comprises five distinct levels. These levels incorporate Physiological needs (such as sustenance and attire), Safety needs (such as assurance of employment), Love and Belonging needs (such as social connections), Esteem needs, and Self-actualization needs (Maslow, 2013).

(Figure 4)



## Maslow's Hierarchy of Human Needs



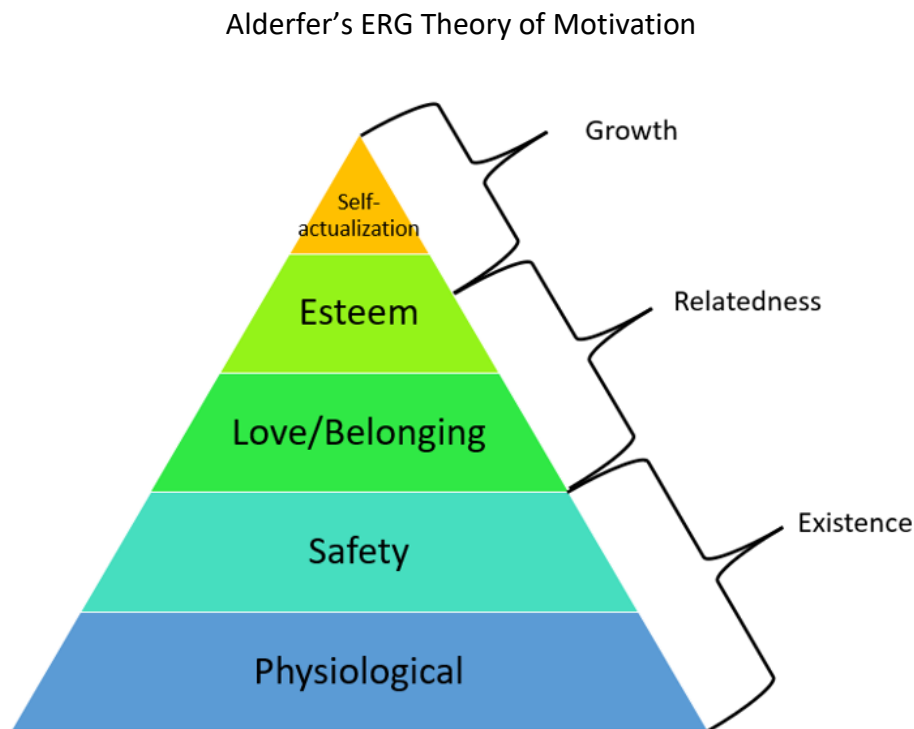
*Figure 4: Maslow's Hierarchy of Human Needs*

According to Sadri, Golnaz, and Bowen, managers should motivate their employees by providing rewards aligned with the prevalent operational needs at any given time. The theory posits that once a need has been substantially fulfilled, it ceases to act as a motivator, and employees move on to the next level in the need hierarchy to focus on satisfying those needs (Sadri and Bowen, 2011).

This notion implies that employees' motivations are diverse, and managers must comprehend their employees' needs and provide appropriate rewards accordingly.

Alderfer's ERG Theory of Motivation is a simplified version of Maslow's hierarchy of needs, which identifies three core motivation groups: Existence (E), Relatedness (R), and Growth. Alderfer challenges the rigidness of Maslow's hierarchy, arguing that an individual can work on any need simultaneously and does not necessarily have to fulfill one before moving on to the next. Employees can experience growth, even if their related needs are unmet. (Alderfer, 1972)

This notion implies that employees can be motivated by different rewards, and managers must create a flexible work environment that allows employees to pursue their motivations. (Figure 5)



*Figure 5: Alderfer's ERG Theory of Motivation*

In 1959, Frederick Irving Herzberg, a well-known American psychologist, introduced an influential theory in his book, *The Motivation to Work* (Herzberg, Mausner and Snyderman, 1959). This theory explores the relationship between job satisfaction and performance and is primarily based on empirical research. Herzberg's two-factor theory identifies two distinct categories of factors affecting job satisfaction and dissatisfaction: Motivator and Hygiene Factors. Motivator Factors are intrinsic and focus on work content, such as achievement, recognition, responsibility, and growth opportunities. In contrast, Hygiene Factors are extrinsic and relate to the work environment, including salary, working conditions, company policies, and job security.

According to Herzberg and his associates, these factors are mutually exclusive and can create motivation or lead to demotivation. This contradicts the traditional understanding that job satisfaction and dissatisfaction are interdependent. Herzberg's work was also influenced by Maslow's pyramid of needs, highlighting that individuals have basic needs that must be met before moving on to higher motivation levels. (Mcleod, 2023)

In summary, Herzberg's two-factor theory provides a comprehensive framework for understanding the factors influencing job satisfaction and dissatisfaction. Organizations can design work environments that promote employee satisfaction and motivation by identifying the different motivators and hygiene factors, leading to improved job performance and organizational success.

## Herzberg's Motivation – Hygiene Theory



*Figure 6: Herzberg's Motivation - Hygiene Theory*

In contrast, Kenneth Thomas emphasized the importance of intrinsic motivators in modern organizations where managers expect employees to self-manage their work. While extrinsic motivators such as pay, benefits, and status are still powerful motivators, intrinsic rewards such as meaningful work, autonomy, and personal growth are crucial in promoting job satisfaction and performance (Thomas, 2009).

In the workplace, empowerment is widely recognized as an effective motivator. Many experts have identified various approaches to empower team members and leaders. One such expert is David Marquet, a former US Navy Captain and author of "Turn the

Ship Around." Marquet advocates for the Leader-Leader Approach, which empowers team members by focusing on Control, Competency, and Clarity (Marquet, 2012). This approach involves giving individuals the freedom to make decisions and take actions that align with the organization's goals, providing team members with the necessary skills and training to perform their roles effectively, and making sure that team members understand their roles and responsibilities, as well as the organization's vision and mission.

Another expert, Harvard Business School professor and former Medtronic CEO Bill George, also identifies empowerment as an essential motivator; George focuses on characteristics leaders must follow to motivate and retain top-performance teams (George and Sims, 2007).

- Take inspiration and passion from your own life story.
- Self-awareness will guide you in the right direction.
- Find the right motivation to get the most out of your capabilities.
- Invest in personal, lasting relationships.
- Integrate all aspects of your life to always stay true to yourself.

By doing so, leaders can become more authentic and relatable to their team members, increasing trust and loyalty. Daniel H. Pink, a renowned author on human motivation, identifies Autonomy, Mastery, and Purpose as key drivers of intrinsic motivation (Pink, 2012). Autonomy gives individuals the freedom to choose how they

work and what they work on. Mastery involves providing team members opportunities to develop and excel in their roles. The purpose is to connect team members to the organization's mission and vision, giving their work greater significance.

Lastly, Mark Royal and Tom Agnew present their findings based on a seven-year research revealing that workplace frustration significantly drives employee disengagement. The study involved exit interviews with high-performing employees who left organizations due to avoidable management conditions. (Royal and Agnew, 2018). These conditions included lack of recognition, limited opportunities for growth and development, poor communication, and ineffective leadership.

The experts suggest empowering team members and leaders can drive motivation and performance. By providing control, competency, and clarity to team members, leaders can create a culture of empowerment that fosters engagement and innovation. Leaders can also become more authentic and relatable by drawing inspiration from their life stories, practicing self-awareness, building relationships, and aligning their personal and professional lives. Leaders can enhance intrinsic motivation by promoting autonomy, mastery, and purpose and encourage team members to achieve their full potential. Finally, by avoiding avoidable management conditions, organizations can retain high-performing employees and create a positive work environment.

## 2.4 Literary Review on Motivation in the Public Sector

This study explores potential differences in motivating employees between the public and private sectors. A noteworthy research study conducted in the 1990s by James Perry and Lois Wise at Indiana University emphasized the concept of Public Service Motivation (PSM), which outlines three distinct motives: Rational, Norm-Based, and Affective (Perry and Wise, 1990) (Table 1)

Public Service Motives

Rational	Participation in the process of policy formulation. Commitment to a public program because of personal identification. Advocacy for a particular or private interest.
Norm-based	A desire to serve the public interest. Loyalty to duty and the government as a whole Social equity
Affective	Commitment to a program from a genuine conviction about its social importance. Patriotism of benevolence.

Table 1: Public Service Motives

According to Perry and Wise, PSM is “an individual's predisposition to respond to motives grounded primarily or uniquely in public institutions or organizations.” The study suggests that the idea that management in government is no different from private business contradicts the theory of public service motivation. Furthermore, the study concludes that the field needs a more precise definition of the other motives that people experience and a theoretical context to link these motives to incentives. Academic literature has extensively studied public versus private sector work motivation (Buchanan 1975; Gabris and Simo 1995). While some scholars assert significant differences between

the two sectors, others argue that the differences are not substantial and do not significantly impact employee motivation. Bradley Wright's 2001 review concludes that there are few differences between public and private sector motivation. However, Wright suggests that greater perceived mission valance or task importance associated with contributing to the provision of a valuable public service may enhance worker motivation (Wright, 2001)

J. Norman Baldwin reports differences between public and private sectors but concludes that these differences do not substantially impact employee motivation. (Baldwin, 1987). Several other studies explore the difference between the public and private sectors regarding cause. In their survey of over three thousand private sector employees and over four hundred public employees, Buelens and Van den Broeack find that public sector employees are less extrinsically motivated. Still, at the same time, they conclude that the differences apply more to job content and not the sector itself. (Buelens and Van den Broeck, 2007).

Public sector employees value intrinsic rewards such as a sense of accomplishment. In contrast, their private sector counterparts are more likely to appreciate extrinsic reward motivators such as high salaries and shorter working hours. Jeannette Taylor's extensive 2005 review offers a more nuanced view. Taylor notes that while some empirical evidence suggests no difference between public and private employees' preference for extrinsic and intrinsic rewards, most empirical evidence



supports the existence of Public Sector Motivation among public employees. This motivation tends to manifest as an intrinsic over extrinsic rewards orientation, with public employees more concerned with inherent, intrinsic rewards, such as a sense of accomplishment, than monetary incentives (Frank and Lewis 2004). On the contrary, private workers are more likely to value extrinsic reward motivators, such as high salaries and shorter working hours. Government respondents tend to place a higher value on challenging and essential work, which provides the opportunity to impact public affairs, public policy, or work on behalf of the public. In conclusion, while there has yet to be a consensus on whether there are significant differences in motivating talent in the public versus private sectors, the debate has been the subject of extensive academic inquiry (Houston, 2000). The importance of intrinsic and extrinsic motivation in each industry has been identified, with some studies suggesting that public-sector employees are less extrinsically motivated than their private-sector counterparts (TAYLOR, 2010).

## **2.5 Literary Review on Motivation of Technical Employees**

The main objective of this investigation is to differentiate between the motivators of technical and non-technical employees. While the literature on the motivation of technical professionals is abundant, only some studies have focused on technical employees in the public sector. Moreover, only a handful of studies have examined the differences in the motivational factors between technical and non-technical workers. Most of the literature suggests incentives that may not be relevant to the public sector,

such as individual financial rewards, group financial rewards, and patent awards, in addition to regular motivators (Hebda *et al.*, 2012). Technical professionals are driven by the satisfaction of seeing their ideas come to life and working with advanced technologies.

"Technical visionaries are primarily motivated by internal factors, including the desire to see their ideas become a reality and the thrill of working on innovative projects." (Hebda *et al.*, 2007). This statement suggests that technical professionals are motivated by internal factors from their work environment. Several authors, including Ralph Katz, argue that "technical employees will strive to meet the demands of their job, regardless of its difficulty, if they believe their work is challenging and innovative, provides opportunities for recognition, growth, and advancement, and allows them the freedom for independent action" (Katz, 2005).

This argument highlights that technical professionals are motivated by career satisfaction, growth opportunities, and the ability to act independently. Petroni and Colacino also note that "despite the extensive research on motivating technical professionals (Allen and Katz, 1990), there remains an unresolved issue: not all technical professionals are the same and not all groups are motivated by the same factors" (Petroni and Colacino, 2008). This statement emphasizes different types of technical professionals, and each group may be motivated by other factors. Furthermore, it is vital to acknowledge that technical professionals at different career stages may have distinct

motivational factors, which may evolve as their careers progress. In summary, comprehending the differences between motivating technical and non-technical employees is crucial for organizations to create a conducive work environment that fosters job satisfaction, career growth, and opportunities for independent action. This understanding can help organizations retain and motivate their technical workforce, improving overall productivity.

## **2.6 Technical Personnel in the Private Sector**

The digital age has brought about diverse and complex areas of competition for businesses, highlighting the need to develop employee skills and capabilities to remain competitive. As resources become scarce and competition intensifies, companies must identify potential talents and technical skills, evaluate their organizational roles, and provide opportunities to develop their skills and capacities. The development of digital talents should not be limited to acquiring new staff for specific jobs but should also include the empowerment of existing employees in their current roles. In the digital age, companies must replace employees who cannot adapt to the changing landscape with those who possess the necessary skills to meet evolving needs. Failure to provide opportunities for digital skills development can lead to employee turnover, significantly impacting a company's competitiveness. Brain drain has been an alarming phenomenon in developing countries.

Despite the growing importance of digital skills, many companies lack well-established plans to cultivate them. The study conducted in 2016, which was a joint effort between MIT Sloan Management Review and Deloitte, brings to light the challenge of attracting and retaining talent in the digital era (Kane et al., 2016). To overcome this challenge, businesses can opt for two distinct approaches. To address this challenge, companies can adopt two different methods. The first approach involves focusing on digital talent markets that leverage digital platforms to connect highly skilled contractors and consultants with companies in need. The second approach suggests developing existing employees' skills and capabilities through continuous training programs and career opportunities.

As per the existing literature, it has been observed that not only young and inexperienced employees but also mid and high-level managers who hold crucial positions within a company may choose to transition to digitally advanced organizations if they do not have the opportunity to enhance their skills and knowledge within their current workplace. This underscores the importance of providing continuous professional development opportunities to all employees to retain top talent and remain competitive in the ever-evolving business landscape. (Kane *et al.*, 2017)

High-performing global companies have developed effective strategies to attract, motivate, and retain digital talent. For example, Facebook fosters the fulfillment of digital talents by allowing them to participate in projects that significantly impact the world.

Facebook also supports continuous learning, initiative-taking, and work-life integration with authenticity, creativity, and transparency. Similarly, P&G partnered with Google to develop digital capabilities among its employees. Through this partnership, P&G employees learned how to use and implement digital technologies and platforms. Additionally, P&G and Google's employees in marketing teams took part in each other's strategic meetings and programs to gain expertise in digital marketing (Osborne & Winston, 2016).

According to global research companies, the impact of digitalization on workplaces and the workforce has been investigated. A recent survey by Randstad US (2019) found that 40% of employees left their jobs due to a lack of access to the latest digital tools. Additionally, employee respondents identified factors that influenced their decision to join a company, such as the use of cutting-edge digital tools (80%), an innovative culture (72%), and the company's reputation as a digital leader (62%). The 2018 Deloitte Global Human Capital Trends Survey also revealed that AI, robotics, and automation technologies have increased the importance of technical skills (65%), complex problem-solving abilities (63%), cognitive skills (55%), and process skills (54%). However, companies still need to have well-defined plans to develop these skills.

Companies must incorporate and integrate the technical and digital talents they need. Creating a dynamic environment called a digital talent market or talent pool will provide advantages for companies and digital skills. Such environments not only bring

companies and talents together but also bring enterprises together with other businesses. The standard features of these environments enable the digital market to reach the resources that will meet any organization's technological needs with its experts in the most demanded positions and skills.

In the contemporary digital era, organizations are faced with the critical task of identifying and acquiring digital talent. Counselors are vital intermediaries on virtual platforms to assist organizations in this endeavor. The primary objective of these counselors is to achieve mutual benefit by identifying and harnessing digital skills. They meticulously evaluate individuals' attributes, expertise, and professional knowledge related to digital skills and provide objective criteria, comments, and evaluations in the form of comprehensive reports to organizations.

However, identifying the appropriate paths to follow for digital talent acquisition can be quite challenging without a comprehensive understanding of the attributes exhibited by digital employees. Digital employees possess unique qualities; they show data-driven decision-making, prioritize user-oriented product and service development, demonstrate creativity, and exhibit collaborative work and agility in interdisciplinary teams. Traditional recruitment methods often do not attract individuals with the required skills to secure employment swiftly and efficiently.

To engage with these individuals effectively, organizations must leverage virtual platforms and mobile apps to facilitate the demonstration of digital competencies. Many digital platforms such as TopCoder, Kaggle, Codility, and HireIQ are available, enabling users and candidates to showcase their technological skills. These platforms provide access to a vast pool of digital experts. Organizations can evaluate the skills and capabilities of individuals to identify the right candidate for the job. Additionally, digital talent platforms such as Good&Co and HackerRank assist firms in aligning their skill requirements with a candidate's talents and capabilities (Bhens et al., 2006).

In 2016, General Motors (GM) acquired Sidecar software and 20 workers possessing digital expertise, including the founder and chief technology officer. However, developing talented individuals is not enough to succeed. It is crucial to establish a work environment that encourages long-term commitment. Regulatory initiatives that promote individual recognition and work-life balance and foster a cooperative and adaptable work setting can aid in retaining skilled individuals in the organization.

Work Market Inc. offers online services in the communications sector by providing a platform and marketplace for freelance workers. The company operates in multiple markets by providing a cloud-based contractor management platform to oversee the freelance workforce, which includes contract selection and recruitment, distribution, ongoing workforce management, related payments, and legal compliance. This platform

provides access to a vast pool of freelance workers, which enables organizations to scale their workforce according to their requirements.

Topcoder Inc. offers digital talent management services to enterprises by providing project managers access to a vast talent pool available 24/7, even on public holidays. Topcoder boasts more than one million users worldwide. The platform offers specialized communities that enable users to enhance their technological knowledge and abilities, promoting technology awareness and acceptance. Additionally, SoftTech, Turkey's most prominent investment firm, offers consultancy services to established organizations in finance, banking, logistics, and real estate industries, assisting them in transitioning to the digital realm to digitize their customer (Karaboga et al., 2020).

Hence, companies must prioritize the development of digital skills and talent acquisition to remain competitive in the fast-evolving digital landscape. To maintain a competitive edge, companies must identify potential digital talents, develop the skills of existing employees, and cultivate a culture of innovation. By doing so, organizations will be able to attract and retain top-tier talent while continuing to be at the forefront of the digital revolution.



## **2.7 Technical Talent of the Public Sector**

In today's world, the digital transformation of governments has become a pressing issue. One major obstacle to attracting digital talent is the fiercely competitive private sector offering attractive compensation packages. Additionally, rigid rules and policies can make it difficult for governments to recruit and retain the best digital talent. In a rapidly evolving technological landscape, governments are aiming to make the digitization of public services a priority. The private sector has quickly adapted, but public sector institutions have remained constrained by policies, such as rigid job classifications, centralized structures, and high discipline, making it challenging to attract skilled talent to the public sector (Karaboga et al., 2020). This results in a significant skills gap between the public and private sectors, with the former struggling to keep up with the latest trends and developments in digital transformation and technical advancements.

Attracting and retaining technical talent in the public sector is a significant challenge that requires attention. This challenge is particularly critical in industries such as power systems (Reder, 2006). The public sector's unique characteristics, including its size and complexity, make talent management complex (Karaboga et al., 2020). Nevertheless, there is potential for implementing talent management strategies in the public sector, which could enhance organizational performance. Effective talent management practices, such as those employed by Bharat Heavy Electricals Limited, can

help retain talent in the Indian public sector (Rana, Goel, and Rastogi, 2013). Talent management is decisive in managing conflicts and contradictions in the public sector. (El Ammar, 2021)

Talent management (TM) is a popular topic in contemporary HRM, involving the systematic attraction, identification, development, engagement/retention, and deployment of talents. Human resources are increasingly recognized as the source of competitive advantage for organizations. Societal developments such as globalization, technological advancements, and demographic changes affect the demand for and availability of talent in the labor market. While TM issues in private sector organizations are widely studied, research on TM in public or non-profit organizations is lacking (Christensen & Lægheid, 2007). There is a need to pay more attention to specific TM issues in public sector organizations, how they define talent, and their effectiveness in attracting and retaining talent (Thunnissen, Boselie, and Fruytier, 2013).

Cultural, human resource, managerial/structural, and environmental factors influence talent management in the public sector. Recruiting, training, and retaining competent specialists in the public sector are critical issues that require attention (Perry and Wise, 1990). Establishing and managing professional and technical positions in public institutions requires a scientific and rational structure, incentive mechanisms, and a fair employment environment. Using contracted staff in public sector management,

particularly in state-owned enterprises, has created disparities in treatment and welfare, leading to the outflow of technical personnel.

To tackle this challenge, governments must build the capacity to quickly adapt to changes in their environments and create systems to stay up to date with the latest trends and developments in the country (Mergel, Gong, and Bertot, 2018). Since digital and technical talent is a crucial contributor to economic success and digital development, governments must create an environment that is attractive to digital talent to prevent their departure for better opportunities in other countries (Strack, Antebi, Kataeva, *et al.*, 2019).

The digital divide, which refers to the levels of access to information and communication technologies in societies, is another critical factor affecting countries and individuals. The digital gap is crucial to a country's digital talent management needs. Governments must develop strategic workforce plans to avoid a digital talent shortage, considering the demand and supply of digital workers.

Attracting digital talents to the government sector can be daunting due to obstacles such as bureaucracy, inflexible laws and procedures, and fixed remuneration that cannot be negotiated (Aitken, 2018). However, it is crucial to modernize government operations through digital transformation and technological innovations, which requires digital policies, strategies, culture, and change management supported by digital

specialists. To facilitate the digital transformation of the Canadian public sector and cultivate a workforce with digital skills, Cukier (2019) recommended a comprehensive digital plan. This plan includes establishing a digitally prepared public service that can attract top-tier digital talents, fostering a digital culture with more flexible and adaptable work environments, implementing accountability measures with quantifiable objectives, updating procedures at all HR levels, providing training in both technical digital skills and soft skills such as critical thinking, communication, collaboration, and decision-making, integrating gender and diversity perspectives throughout the value chain, promoting partnerships between public and private sectors to access talents and innovative methods, and creating effective marketing campaigns for government services to dispel prejudices about government employment.

Notably, the digital transformation of governments is a complex process that requires a multi-faceted approach. It necessitates digital policies, digital strategies, digital culture, and change management with the support of digital professionals on the government staff. Building a digitally ready public service is essential to attract world-class digital talent. This requires fostering a digital culture that is more flexible and adaptable to the needs of digital talent and implementing accountability mechanisms with measurable targets to ensure that the digital transformation process is on track (Karaboga *et al.*, 2020).

Modernizing HR practices is critical to creating a technically talented workforce. This includes training in hard digital skills such as coding, data analysis, and cybersecurity and soft skills such as critical thinking, communication, collaboration, and decision-making. Applying gender and diversity lenses throughout the value chain is also necessary to create a more inclusive and diverse workforce.

Public-private partnerships can also play a significant role in bridging the digital talent gap. Governments should collaborate with private sector corporations to reach talent and new approaches. Effective marketing campaigns can also be launched to break biases about government jobs and promote the benefits of working for the public sector.

Investing in digital transformation within public institutions is more critical than ever, and these recommendations are crucial to overcoming digital talent shortfalls across every government area.

By adopting competitive digital government strategies, public sector corporations can become more attractive places to work for digital talent (Hanna, 2018). A digital culture, flexible workplaces, competitive compensation packages, simplified and digitized public services, modernized bureaucracy, training on emerging digital trends, career progression opportunities, and high levels of transparency, accountability, and citizen participation appeal to digital talent. Therefore, governments should engage with

their country's digital ecosystem to compete with the private sector and attract digital talent to the public sector.

Governments can increase the number of digital staff by supporting education programs with digital expertise (Strack *et al.*, 2019). They should analyze the skills enterprises require and compare them with the results of academic training programs. New programs should be developed to meet the changing skill requirements in project management and technology-intensive jobs. Practical knowledge and soft skills training must be emphasized through practical learning. The government should encourage universities to teach new topics in digital technologies, such as big data analytics, artificial intelligence, and cybersecurity.

The IBM Worldwide Skills Survey, conducted in collaboration with Oxford Economics, has contributed to understanding upcoming skills issues in the global workforce and the necessary solutions. The survey gathered the opinions of over 5,600 worldwide executives across 18 industries and 48 countries. They were requested to rank institutions based on their role in creating and sustaining worker skills and capacities. The results indicate that governments, higher educational institutions, and the commercial sector are accountable for developing and supporting worker skills, and collaboration among these entities is deemed essential for success.

Through collaboration, individuals can leverage their strengths and mitigate the impact of their shortcomings to enhance their speed. Governments can incentivize the corporate sector and invest in higher education for digital skills development initiatives. Collaboration between educational institutions and the private sector can establish work-based and practice-based learning initiatives (King, Marshall, and Zaharchuk, 2016).

The structured collaboration among universities, businesses, and governments facilitates the acquisition and integration of new technologies, converting them into production and development capabilities and adjusting these capabilities to the business environment, ultimately transforming knowledge into economic value. Universities oversee the research process for knowledge generation and skill development, while businesses facilitate the transformation of these skills into tangible outcomes. The government implements measures to ensure systematic integrity and offers support to institutions.

To attract and retain digital talent in government institutions, governments must compete with the private sector while ensuring digital talent development within their countries. Governments must recognize the need to foster an environment that supports digital talent's growth and advancement while offering competitive incentives and benefits to attract top talent. Attracting and retaining skilled professionals is essential to delivering high-quality services and maintaining the public's trust in government institutions. Therefore, governments must prioritize developing and retaining digital

talent as a critical component of their overall strategy. Additionally, it is necessary to create a conducive environment that encourages the growth and retention of digital talent in the public sector, such as providing opportunities for career development, flexible working arrangements, and competitive remuneration packages.

In summary, the digital transformation of public services is a critical matter that requires urgent attention from governments. By creating an environment attractive to digital talent and developing strategic workforce plans, governments can bridge the digital skills gap and ensure they keep pace with the latest trends and developments in the field.

## **2.8 Present Scenario and Digital Divide**

Digital technologies are revolutionizing the world, resulting in a notable scarcity of skilled individuals. Boston Consulting Group predicts a significant global shortage of digital talent by 2020, resulting in 30% of IT positions remaining vacant (Strack *et al.*, 2019). Human Resources professionals are vital in bridging the gap in business operations.

HR must enhance digital skills and competencies at all levels to ensure that organizational-wide digital transformation investments lead to business success. Technical digital skills like programming, data analytics, machine learning, AI, automation, and robotics demand specific expertise. In contrast, human-specific soft



digital skills like learning ability, customer-centricity, collaboration, flexibility, adaptability, and comfort with ambiguity are precious in organizations' digital transformation (Institute, 2017; Cukier, 2019).

HR directors must address the digital skills gap in a firm by fostering communication and collaboration while establishing an innovative-friendly atmosphere. HR methods emphasizing coordination and management skills can help preserve balance and boost productivity in diverse work settings. HR managers today encounter challenges in acquiring and overseeing digital skills and addressing fundamental needs like work-life balance, career advancement, job satisfaction, and mobility (Mura, 2018).

Recommendations to address the digital talent gap involve establishing a robust digital strategy to attract, nurture, and retain digital talents, implementing training initiatives for employees to adapt to new work methods in line with the organization's digital strategy, fostering a digital culture to support digital transformation, creating flexible digital work environments for digital talents to explore innovative solutions, focusing on digital talent markets through digital platforms with skilled contractors and consultants, enhancing existing employees' skills through ongoing training and career advancement opportunities, analyzing employee data regularly to identify training needs, and managing digital talents' career progression and work-life balance with competitive compensation packages (Dhanabhakym and Kokilambal, 2014; Ratten, 2014; Mura, 2018).

## **2.9 Technical Talent Management in The Public Sector**

In the 21st century, managing human resources effectively requires strong talent management skills (Cappelli, 2008). Companies worldwide have recognized that human capital is their most valuable resource for global competition, and retaining that talent is a top priority. This holds true for the public sector as well. Employee engagement has been identified as one of the critical factors in retaining top talent (Glen, 2006).

“Today's typical organization views talent management as three building blocks: attract, develop, and retain. These are solid building blocks on which the foundation lies. The challenge is that these blocks will not stick together unless mortar exists. And that mortar is employee engagement. A robust, world-class talent management process must put the mortar between those three key building blocks.” Brian Gareau, Manager, people and organizational development, Caterpillar Inc.

A study by consulting firm KPMG stresses that organizations of all sizes, like private or public sectors and industries, must identify, develop, deploy, and retain their key talent to remain competitive (Lyon, 2010). Talent management has emerged as the most effective way to systematically recruit, develop, and retain highly productive and promotable individuals (Davies and Davies, 2010).

Organizations must have a comprehensive strategy for managing their talent to achieve effective talent management. This involves creating a culture and environment that allows talented individuals to thrive and predicting the skills, attitudes, and behaviors required of them in the future (Onday, 2016).

Talent management (TM) has emerged as a prominent theme in contemporary human resource management (HRM) due to the growing recognition that human resources (employees) can be a significant source of competitive advantage in the current knowledge-intensive economy. TM is often defined as the systematic attraction, identification, development, engagement/retention, and deployment of talents. However, the literature on TM primarily focuses on private sector organizations, enormous organizations operating on a global scale. Therefore, the current concepts and assumptions in the TM literature related to the context of private and multinational organizations are likely less than adequate to study TM in public or non-profit organizations, which face different circumstances and characteristics. Public sector organizations, including government entities, face HR challenges like labor market scarcity and the unpopularity of specific public sector jobs. These challenges can affect the performance of these organizations and, subsequently, the fulfillment of their public tasks. However, little attention is paid to specific TM issues in public sector organizations, how they define talent, and their success in their battle for talent. The value of TM for society is not yet clear, as empirical research regarding the effects of TM is scarce. Scholars argue that TM should be aimed at supporting organizations in reaching

their goals and gaining a competitive advantage by achieving organizational excellence. However, it is even more challenging for public sector organizations to define organizational performance, as they must deal with multiple stakeholders inside and outside the organization.

The success of talent management is closely tied to creating a work environment that values and acknowledges employee contributions. Organizations that recognize and appreciate the efforts of talented individuals can align them with the organization's goals and objectives (Davies & Davies, 2010). According to Wellins and his collaborators, engagement cannot be rationalized, and organizations must hire individuals with the right talents, develop them into leaders with the right skills, and provide support through robust talent systems and strategies (Wellins, Bernthal, and Phelps, 2005).

Organizations must identify talented individuals and provide them with opportunities for development and growth. Organizations must assess their workforce for potential future leaders. Additionally, organizations must create an environment that nurtures talent, encourages creativity, and promotes continuous learning and development.

In conclusion, effective talent management is crucial for organizations to succeed in today's workplace, whether in the private or public sectors. By identifying and retaining top talent through strategic talent management practices, companies can gain a

competitive edge in the global market. A comprehensive talent management strategy involves creating an environment that values and recognizes employee contributions, identifying high-potential individuals, and providing opportunities for growth and development.

## **2.10 Chapter Summary**

In today's world, there has been a significant shift towards digital work design, with phrases like "digital talents," "digital fluency," "digital networks," "technical personnel," "digital platforms," and "technical talent" becoming more common. This change has been driven by the rapid global digital transformation and technological progress, resulting in an increased need for digital and technical skills. Unfortunately, this increased demand has led to a significant global shortage of digital skills, which poses a critical concern for companies and a matter of national importance.

It is essential to recognize that digital intellect is a nation's most valuable resource, and technology advancement alone is insufficient for growth. It is crucial to comprehensively understand and make the most of technological changes by employing trained and experienced personnel. Collaboration among governments, higher education institutions, and enterprises is essential to creating and implementing comprehensive digital initiatives to address the digital talent shortage.

In the present era, digital talent management is a critical obligation for both the public and private sectors. The BCG's 2019 comprehensive research on digital talent indicates that individuals with digital skills are more likely to change companies and countries to improve their work experience and career progress.

The survey highlights the US, Germany, Canada, Australia, and the UK as the top global technical and digital talent locations. It emphasizes that digital professionals prioritize an excellent work-life balance, learning and training opportunities, career advancement, positive relationships with colleagues, and financial rewards, in that order. Hence, organizations and authorities should develop comprehensive strategic plans to attract and retain digital experts by providing rewards such as flexible schedules, career growth opportunities, and competitive compensation packages.

Both public and private sectors should prioritize offering employees continuous training and development programs to ensure they are proficient in the latest digital tools and technologies. This will equip them with the necessary skills and knowledge to meet the requirements of the digital era. The public sector must continuously try to retain, develop, and nurture technical talents. Public Sector Management (PSM) can be utilized when necessary, but the primary focus should be maintaining a healthy and productive environment.

Maslow's Five Levels of Hierarchy of Needs is a widely recognized theory that explains the fundamental demands behind human behavior leading to a conducive environment. The theory posits that individuals have five separate degrees of needs that must be satisfied sequentially. These needs are physiological, safety, love and belongingness, esteem, and self-actualization demands, listed in ascending order.

However, contemporary managers place more importance on intrinsic motivators such as autonomy, mastery, and purpose than extrinsic motivators like incentives and promotions. Research indicates that internal motivators are more successful in enhancing employee involvement and job contentment, ultimately resulting in improved performance and productivity. At the same time, it is essential to note that Maslow's theory has limitations. Some scholars argue that the theory may not apply to all cultures and that it oversimplifies the complexity of human needs.

Despite the importance of Maslow's theory, further examination is necessary, especially regarding the recruitment, encouragement, and retention of technical experts in the public sector. Professionals in this industry frequently encounter distinctive obstacles that necessitate a comprehensive comprehension of their requirements and incentives. Research is needed to determine successful strategies for motivating and retaining these individuals, which can enhance the overall success of public sector companies.

The public sector faces substantial difficulty in recruiting and retaining technological expertise, which is crucial, especially in industries like electricity systems. The distinct features of the public sector, such as its scale and intricacy, provide challenges in personnel management. The potential exists for applying talent management solutions in the public sector, which could enhance performance. Effective talent management is crucial in addressing conflicts and inconsistencies within the public sector.

Aspects affecting talent management in the public sector include cultural, human resource, managerial/structural, and environmental elements. For instance, cultural factors such as social norms and values can affect how employees perceive their work and motivation. Human resource policies and practices can also play a crucial role in attracting and retaining skilled individuals. Managerial and structural factors such as leadership styles, organizational structure, and communication patterns can also significantly impact employee motivation and retention. Finally, environmental factors such as economic conditions, political instability, and technological changes can also affect the public sector's ability to attract and retain technical experts.

Recruiting, developing, and retaining skilled specialists in the public sector is a crucial concern. A lack of technical workers makes the situation more complex, worsened by conventional values and talent supply systems. Establishing and managing professional and technical roles in public institutions is challenging and requires a



scientific and rational structure, incentive systems, and a fair employment climate. The employment of outsourced labor in public sector management, especially in state-owned firms, has resulted in unequal treatment and benefits, causing a loss of technical professionals.

In conclusion, the global digital skills gap is a critical issue that requires cooperation among governments, higher education institutions, and enterprises. Creating and implementing comprehensive strategic plans to attract and retain digital talent will help companies and governments ensure their workforce possesses the essential skills and knowledge to succeed in the digital era.

Maslow's theory provides a valuable framework for understanding employee motivation but has limitations. Further research is necessary to determine successful strategies for motivating and retaining technical experts in the public sector, which can enhance the overall success of public sector companies. By understanding the cultural, human resource, managerial/structural, and environmental aspects affecting talent management in the public sector, policymakers and managers can develop effective talent management strategies to attract and retain skilled individuals.

## CHAPTER III: METHODOLOGY

### **3.1 Overview of the Research Problem**

Like the private sector, the public sector heavily relies on information technology (IT) to carry out its missions. The IT departments in both industries need highly skilled talent; recruiting, motivating, and retaining that talent is a big challenge.

The private sector can usually afford better salaries and financial incentives when recruiting and maintaining technical employees, pushing IT managers and their Human Resources in the public sector to look for alternatives to the financial incentives.

Despite the vast number of books and articles about employee motivation, more studies are needed, focusing specifically on technical talent in the public sector.

### **3.2 Research Purpose and Questions**

To provide IT managers in the public sector with a clear understanding of the strategies to recruit, retain, and motivate their IT teams, the research is focused on answering the following questions:

1. What extrinsic and intrinsic motivators are available for public sector managers?
2. Is technical talent motivated differently than non-technical team members?
3. What other factors, reasons, or strategies are public managers overlooking when recruiting, motivating, and retaining technical talent?

4. What factors are upper management overlooking?

### **3.3 Research Design**

The research design utilizes a mixed methodology approach, a combination of existing data analysis to arrive at meaningful conclusions, and surveys and interviews with IT talent in the public sector to obtain firsthand input.

The primary research method for this study is a literature review. As described in the literary review section, there is an extensive collection of books and studies about employee motivation and team performance. The challenge is to analyze those that contradict each other and to summarize the findings, identifying key concepts and overlooked opportunities, giving this study an exploratory approach.

The literature review will support field research findings through surveys and interviews within the Information Service Division of a sizeable public service agency and a second round of the same survey with public servants of different departments. Utilizing the best of both worlds and anticipating the challenges of a combined approach using quantitative and qualitative methods will add value to this study. This cross-sectional approach will conduct the survey once during the first quarter of 2024 and will be observational (non-experimental).

### **3.4 Participant Selection**

This study surveyed two hundred and eighty-seven (287) IT professionals (of the six hundred and sixty-one (661) invited, 43%) from a large California public department.

The participants included IT professionals at different levels and years of career experience, from staff to middle and upper management, executives, and students to employees close to retirement.

A pilot survey test was conducted with a few diverse participants; twenty-four IT professionals were invited for the pilot sample. Minor changes were introduced after the input was collected from the pilot test.

After analyzing the survey with all participants, a second round was conducted with participants from the IT division of other California state departments to validate the findings and results. It included one hundred and twenty-two (122) participants.

Interviews were conducted with sixty-one employees at different levels and stages of their careers to clarify or analyze results more deeply.

### **3.5 Data Collection Procedures**

Data was collected using the online survey tool Microsoft Office Forms. The survey strategy is displayed in Appendix B.

The invitation to complete the survey was sent using the department's email exchange service and included an explanation of the goals of the study and its confidentiality and anonymity (Appendix C). The survey provided an opt-in for those participants agreeing to a follow-up for an interview. Fewer participants were interviewed, ensuring a diverse population, including participants at different career

stages. The survey included a closing thanking the participant, contact information for questions, and desired completion date. (Appendix D)

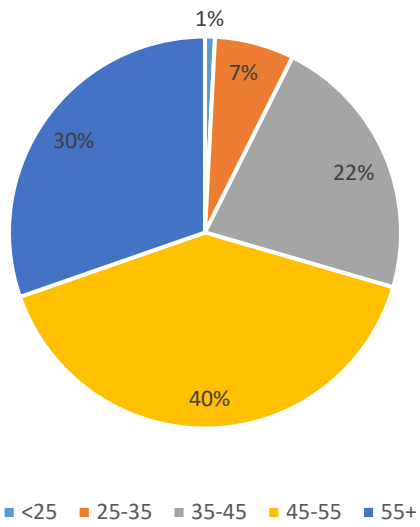
## **3.6 Data Analysis**

The survey was designed and conducted using Microsoft Office Forms; this online tool provides its analysis service and allows the data to be exported to Microsoft Excel™ for further analysis.

### **3.6.1 Quantitative Data Analysis**

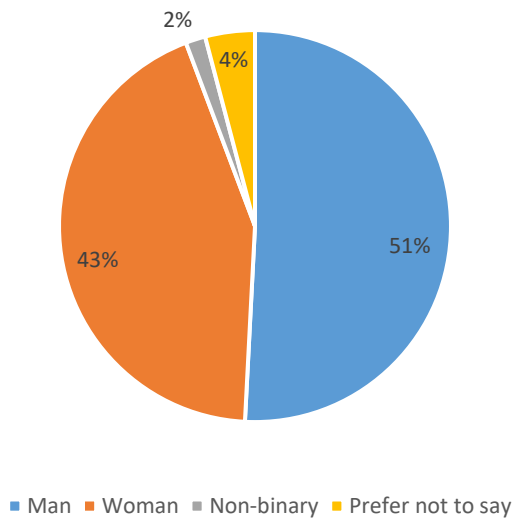
To profile the respondents, the survey captured the demographic data, including Age, Gender, and Race (established by the California HR Department), Years of experience in the IT industry, Years to Retirement, and single or multiple levels of reporting (managers with managers or supervisors with direct reports). The most appropriate charts were used to display the data.

Age



*Figure 7: Age of Participants*

### Gender



*Figure 8: Gender of Participants*

### Race (CalHR Classification)

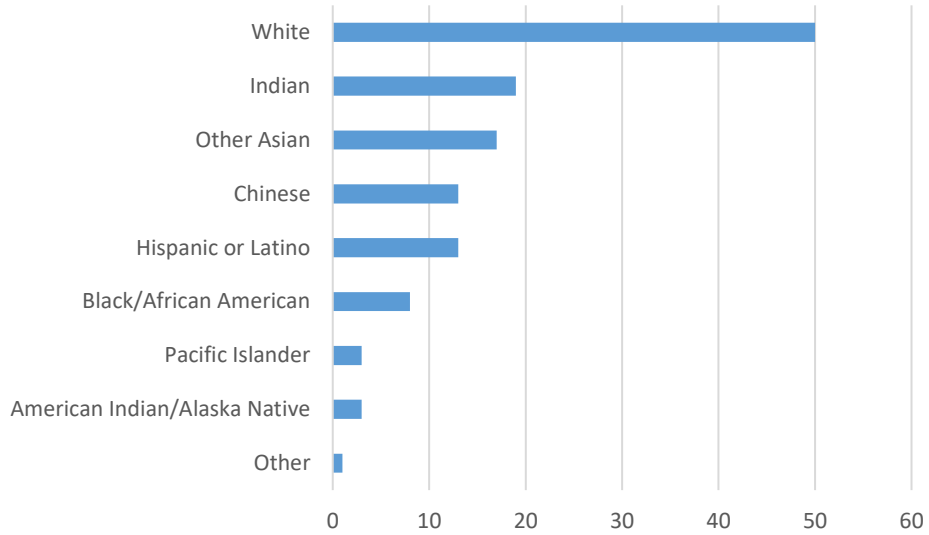


Figure 9: Race of Participants

### Year of Experience

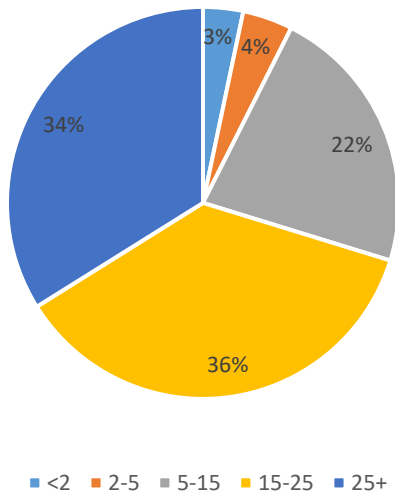


Figure 10: Years of Experience of Participants

### Year to Retirement

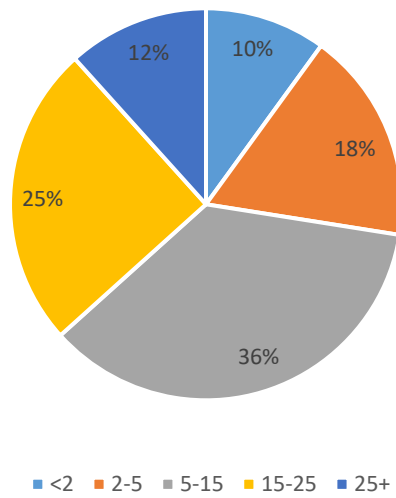


Figure 11: Years to Retirement of Participants

### Direct Reports?

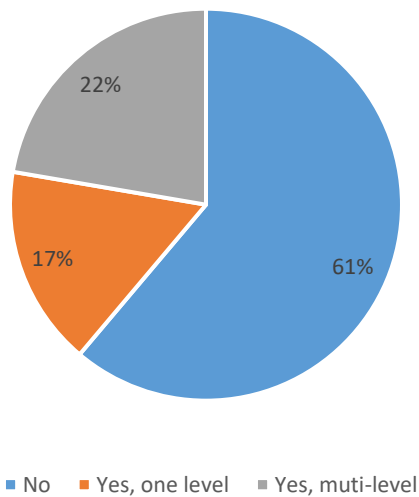


Figure 12: Does the participant have direct reports?



### **3.6.2 Survey Data**

The survey for this study included questions to identify the reasons and factors IT talent values when deciding to join the public sector and what motivates them to stay in the job and achieve top performance. The questions were in the ‘Simple Data Matrix’ format. For instance, in Table 2 for the question: ‘Reason to join the public service,’ the survey provided reasons for the respondent to assign a level of importance (1 to 4, from extremely important to irrelevant).

The data can be identified as ‘Categorical Data/Ranked’ as data cannot be measured numerically as quantities; it can be classified into more than two sets, and these sets can be placed in a rank order based on the book ‘Research Methods for Business Students’ (Saunders, Lewis and Thornhill, 2012) (Figure 13)

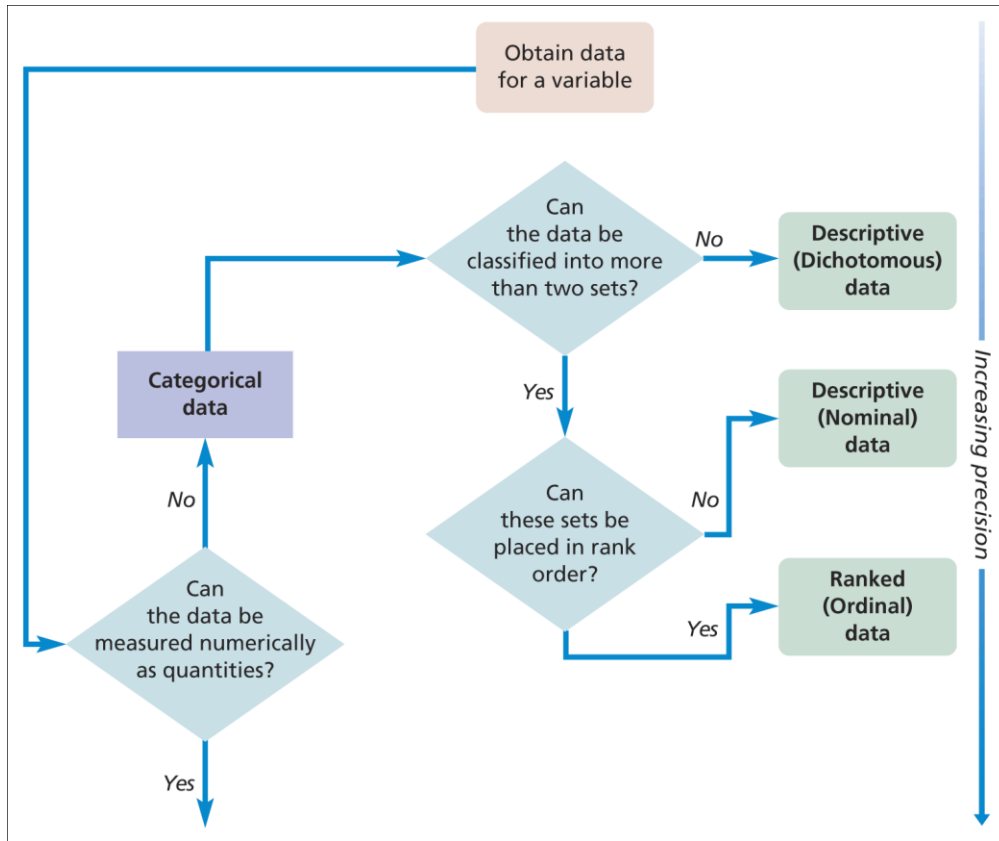


Figure 13: Defining Type of Data

### 3.6.1 Qualitative Data

Sixty-one IT professionals in the public sector were interviewed for this study. Interviews were not recorded to ensure anonymity; notes were transcribed into a document summary to aid the analysis.

The interviews included questions (Appendix F) to start the conversation. Trends were identified with words or phrases with a high level of repetition utilizing the word counting (unit of data) functionality of Microsoft Excel. For instance, most interviews referred to Job Security, Recognition, Telework, Direct Supervisor, and Communication.

At the end of the established initial set of questions, interviewees had the opportunity to add additional thoughts.

### **3.7 Research Design Limitation**

This study is geographically limited to the United States and primarily focused on the California public sector. Even though some of the concepts and findings of this study are universal, they might be affected by different socio-economic, cultural, and market conditions.

### **3.8 Chapter Summary**

This chapter restated the Research Purpose and Questions and described the methodology and strategy. This study used a mixed methodology approach, analyzing existing data and conducting surveys and interviews. The results and findings of the surveys were corroborated with existing literature.

The survey was conducted twice; after the primary data set was analyzed, a second sample of similar size was collected and analyzed. The surveys were conducted among employees of the Information Service Division of several California State departments.

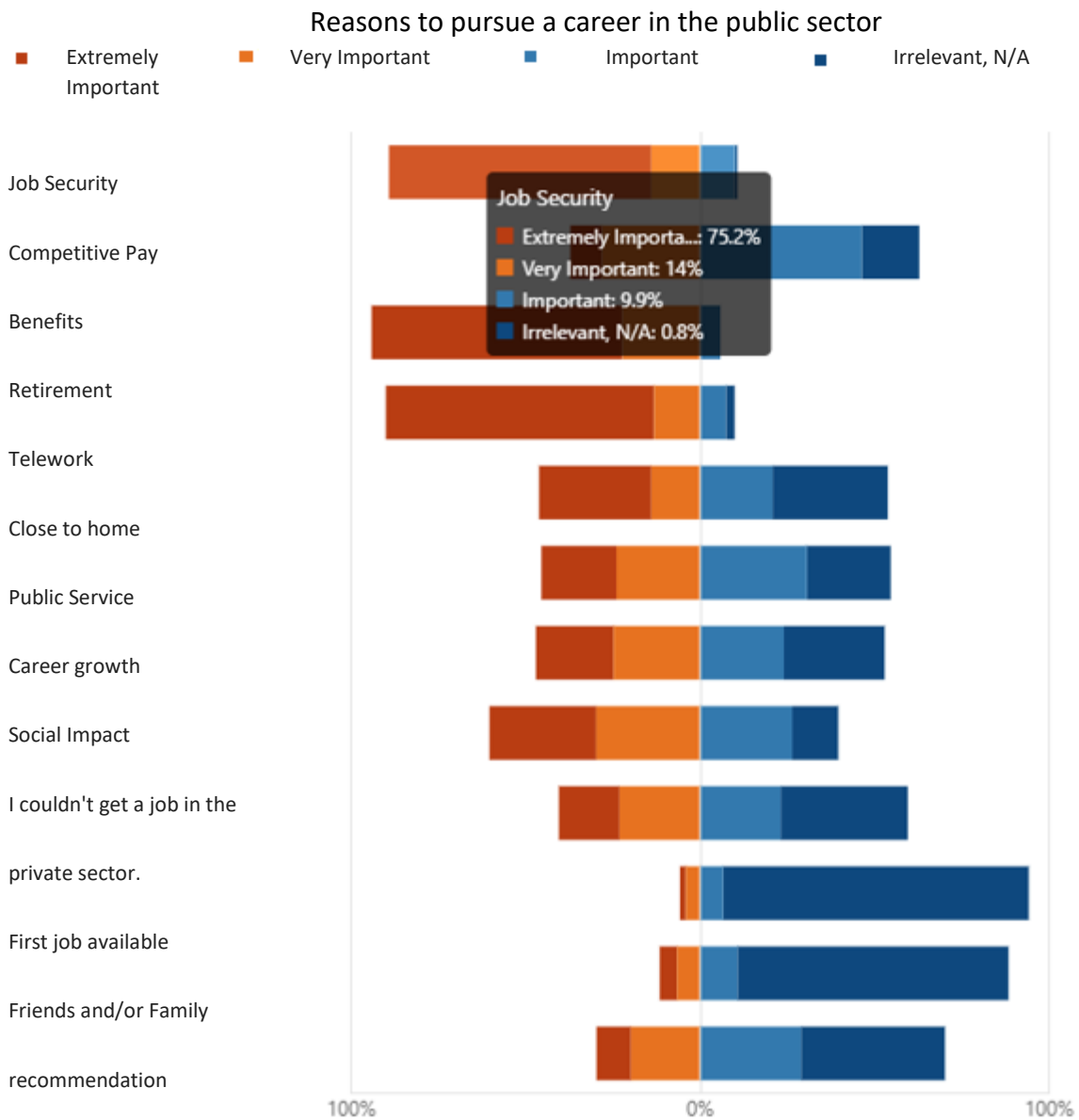
## CHAPTER IV: RESULTS

### **4.1 Research Question I:**

**What are the extrinsic and intrinsic motivators available for managers in the public sector?**

Benefits (94.2% extremely important and very important), Retirement (90.1% extremely important and very important), and Job security (89.2% extremely important and very important) were the three top reasons the participants of the survey and the subsequent interviews found when deciding to pursue a career in the public sector; all these are extrinsic motivators. (Table 2)

During the interviews conducted for this study, most public servants (97%) mentioned that job security was the main reason they considered when joining the public sector. Several interviewees were former consultants working for state agencies. Even though their pay rate was very high, they had to go through very stressful times every time their contract was close to the end, and the pay difference was significant; if they had to be out of work between contracts, their average salary was much lower.



*Table 2: Survey Results: Reasons to pursue a career in the public sector.*

The same three reasons plus “Like my job” (41.2%) and “Like my Supervisor” were the following two reasons given for staying at their current job; the top five motivators are a mix of extrinsic and intrinsic motivators.

### Reasons to stay at my current job

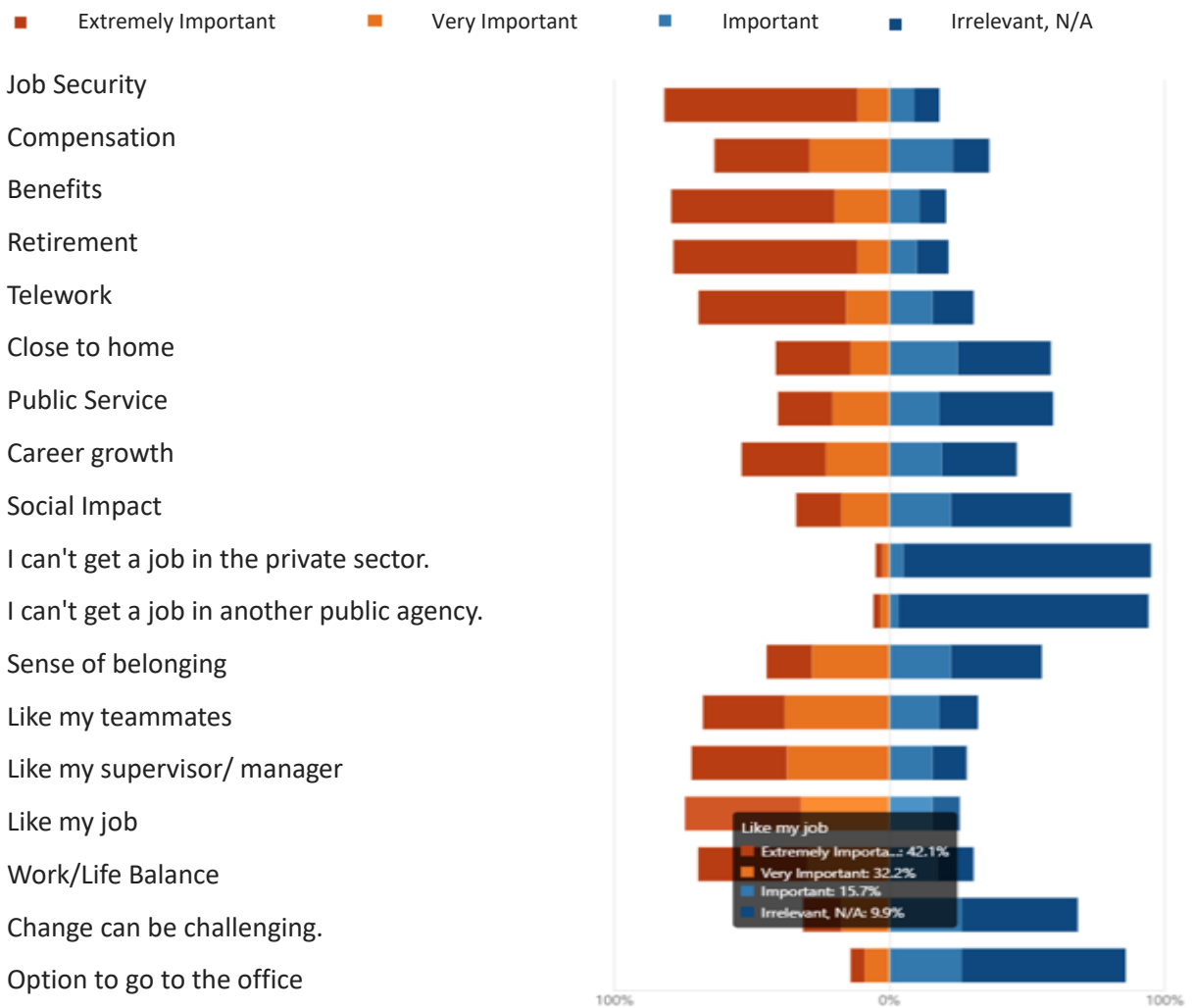


Table 3: Survey Results: Reasons to stay at my current job.

### Reasons for leaving the last job

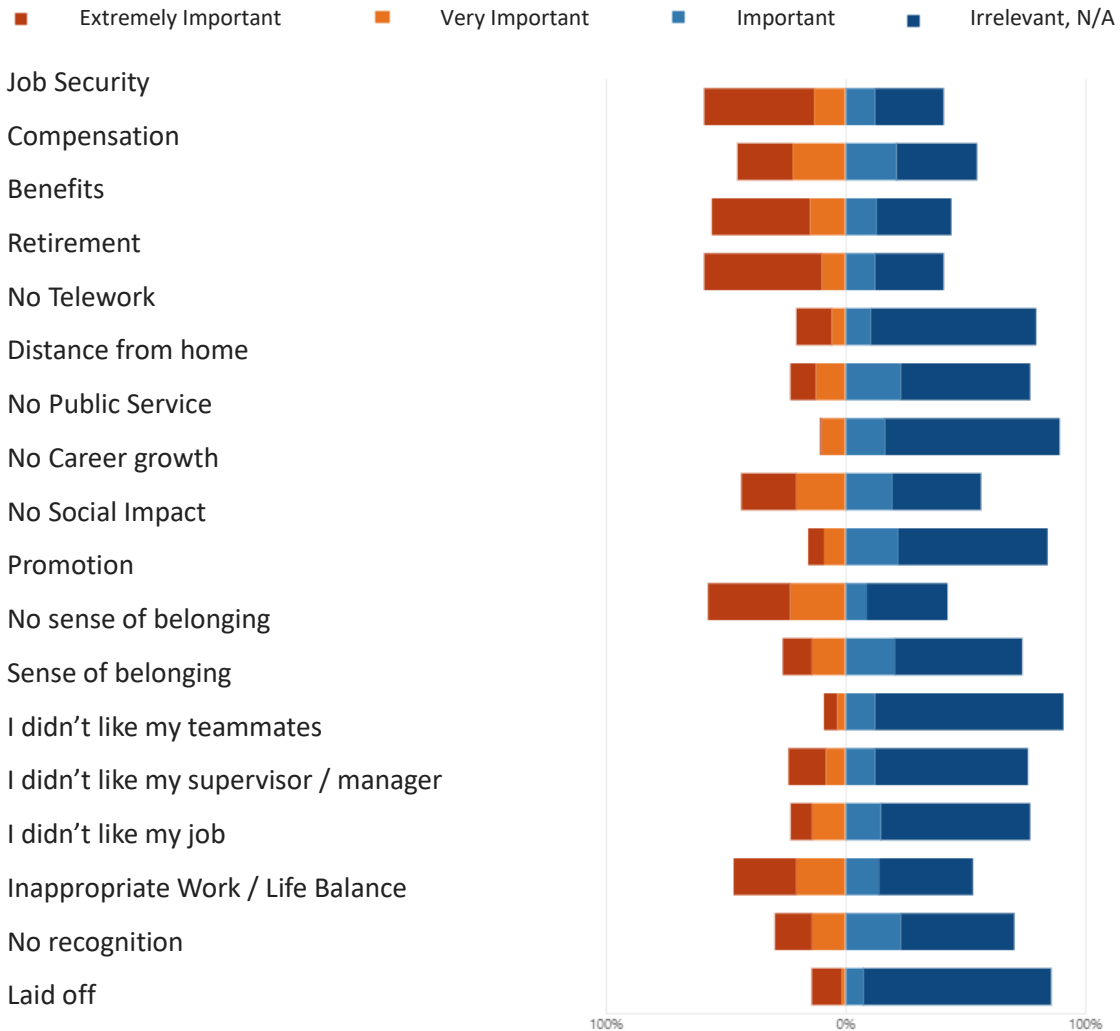
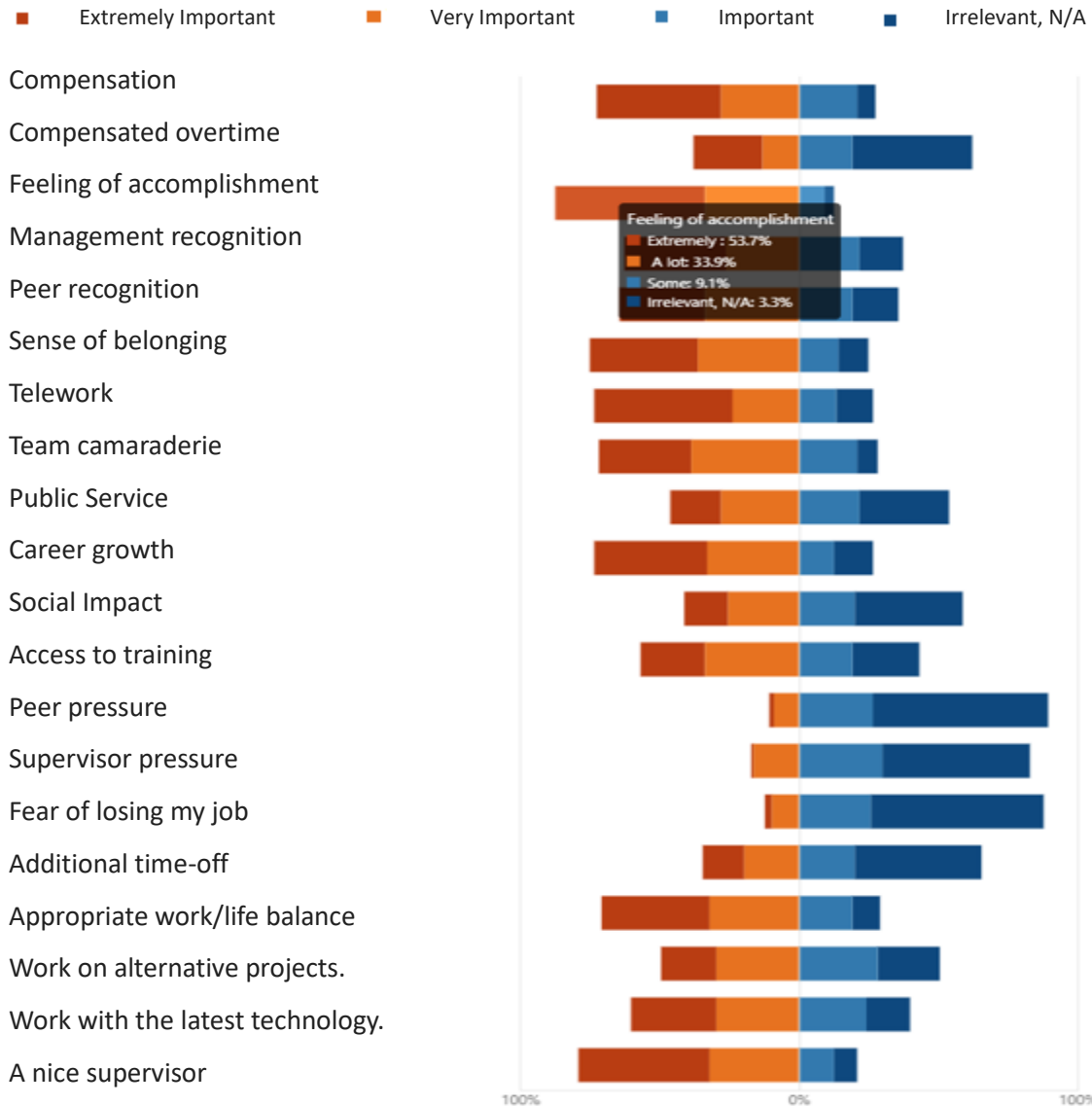


Table 4: Survey Results: Reasons for leaving last job.

When asked: what factors motivate better performance? The responses of this study identified “Feeling of accomplishment,” “A nice supervisor,” “Sense of belonging,” and “Telework” as the top reasons, all of them intrinsic motivators.

## Factors that motivate better performance

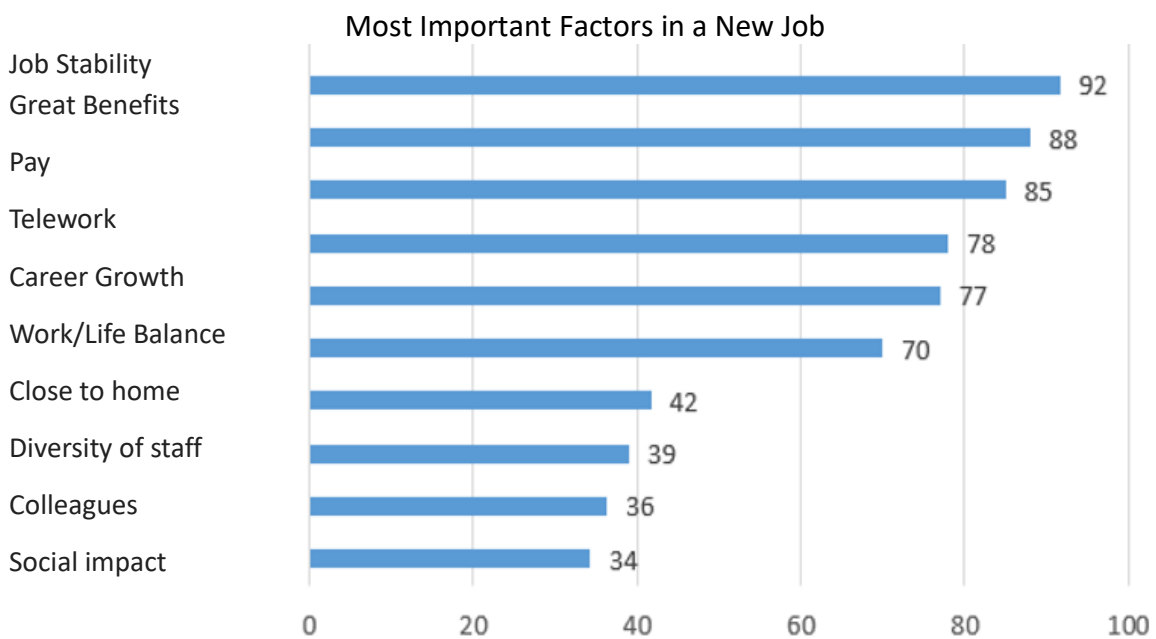


*Table 5: Survey Results: Factors that motivate better performance.*

A mix and combination of both types of motivators are needed in the three stages of engagement: recruiting, retaining, and motivating to achieve high performance; the survey also found slightly different responses for employees depending on stages of their career, gender, and race.



The California Department of Human Resources or CalHR (calhr.ca.gov) “is responsible for issues related to employee salaries and benefits, job classifications, civil rights, training, exams, recruitment and retention” (*About CalHR*, 2023). During 2023, CalHR conducted job fairs in person and online to attract new candidates. Participants were asked about the most important factors when looking for a new job, and the top three factors were Job Stability, Benefits, and Salary, followed by three intrinsic motivators: Telework, Career growth, and Work / Life Balance. (Figure 7)



*Figure 14: Most Important Factors in a New Job*

The results of the survey conducted by this study aligned with the findings of a similar study conducted in 2022 by the Mission Square Research Institute (formerly the Center for State and Local Government Excellence), including one thousand three

(1,003) state and local government employees. “Job security (92%), personal satisfaction from job (87%), and retirement benefits (86%) were the most commonly cited as major or minor factors that attracted respondents to their current job in the public sector in the first place.” (Liss-Levinson and Young, 2023)

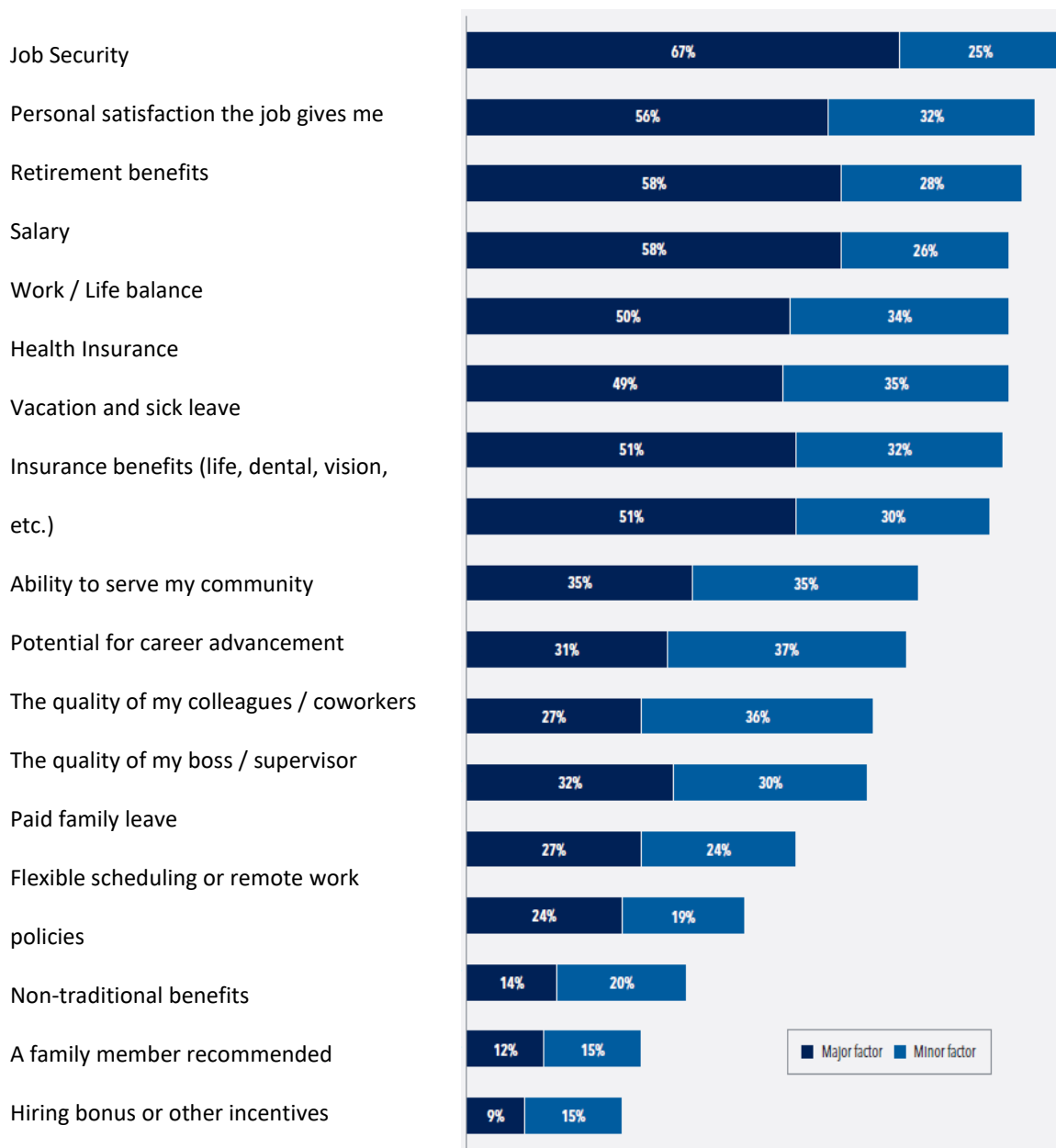
This report finds differences between younger workers and their older colleagues. As the public sector looks to attract the next generation, strategies must be adjusted to the target market.

#### Major factors when joining the public sector by age

Factor	Under 40	Ages 40 – 49	Age 60+
Work / Life Balance	56%	47%	43%
Quality of boss / Supervisor	43%	27%	20%
Potential for career advancement	42%	28%	17%
Quality of colleagues / coworkers	36%	24%	17%
Paid Family Leave	35%	35%	13%
Flexible scheduling or remote work policies	31%	22%	11%
Non-traditional benefits	20%	12%	6%

*Table 6: Major factor when joining the public sector by age.*

#### Major and minor factors to pursue a career in the Public Sector



*Table 7: Major and Minor factors to pursue a career in the public sector.*

## **4.1.1 Extrinsic Motivators**

### **4.1.1.1 Job security**

In December 2023, the American business news channel [cnbc.com](https://www.cnbc.com) reported: “Over 100,000 workers were laid off from tech jobs this year” (Smith, 2023). The article continues reporting: “Google announced plans to lay off 12,000 people in January 2024. That same month, Microsoft said it was letting go of 10,000 employees. Meta (parent company of Facebook, Instagram, and WhatsApp) has made sizeable cuts to its workforce, slashing thousands of jobs in four rounds of layoffs starting in November 2022 and continuing through May 2023.

Smith continues: “Some laid-off employees immediately found new jobs at smaller software firms and internet companies or continued their careers outside of tech, pivoting to consulting, health care, finance, and other industries eager to recruit top talent who might have otherwise stayed at larger tech companies. Others — relying on their severance packages, savings, or a different source of income — are taking a break, recovering from the stress and shock of being laid off.”

During the same month, a digital publication specializing in IT topics, [Computer World](https://www.computerworld.com), reported: “Facing an uncertain global economy and slowing revenue growth, technology companies have picked up the pace of layoffs in 2023. According to data compiled by [Layoffs.fyi](https://www.layoffs.fyi), the online tracker keeping tabs on job losses in the technology sector, 1,169 tech companies have laid off about 260,238 staff in 2023, compared to 164,969 layoffs in 2022.” (Trueman, 2023)

During the same period, no layoffs were announced from the public sector. The level of profits does not impact local, State, and Federal agencies as it does to companies in the private sector; labor costs are usually the top expense of a company, and laying employees off is one of the first tools used when profits shrink.

The public sector is not immune to unfavorable economic conditions; at the beginning of 2019, the Legislative Analyst's Office ([www.lao.ca.org](http://www.lao.ca.org)) reported:

“On December 31, 2008, Governor Schwarzenegger's proposed budget projected a \$42 billion deficit. This shortfall was stunning, but it turned out to be optimistic. A few months later, the Governor's deficit projection was \$15 billion larger. In the subsequent weeks, the Governor released two more revised budgets, each addressing larger shortfalls. In the months that followed, California was called 'ungovernable,' 'a wreck,' and a 'failed state.'” (Taylor, 2018)

During the great recession of 2007-09, tax revenues were lower than expected, and the State of California faced a \$57 billion budget gap. To lower that gap, California State employees were furloughed two or three days a month, and their salaries were reduced by same number of days in exchange for vacations. Still, their jobs were safe even during the worst recession of the last 70 years. (Human Resources Manual - CalHR,

2018) (Figure 6)

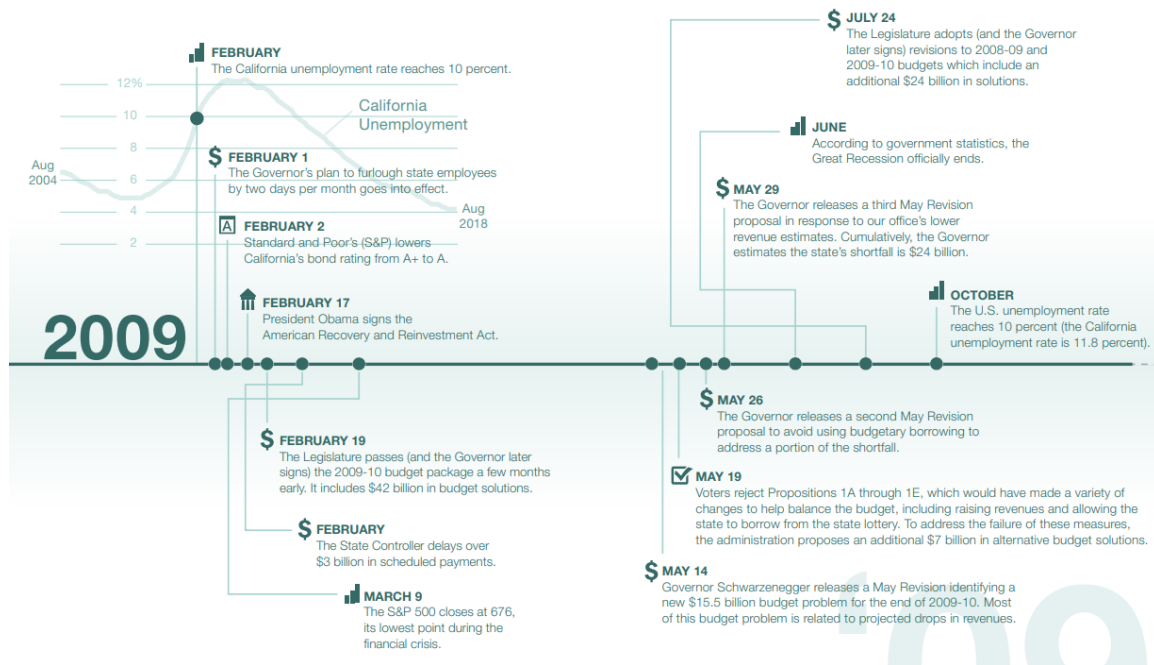


Figure 15: The Great Recession and California's Recovery

The research results led by Dr Hynunkang Hur and published by Cambridge University conclude: “highlight the significance of job security at the workplace, in shaping and enhancing employee attitudes and job security is worth retaining in some form in the public sector, contrary to the logic of at-will employment. This meta-analysis highlights several important considerations for developing effective public job security policy.” (Hur, 2022)

This is an essential extrinsic motivator that recruiters in the public sector should use as a sales point, and managers should remind employees to retain high-performance team members.

#### **4.1.1.2 Benefits**

This study showed that great benefits were the second most important reason for candidates looking for jobs at California State job fairs (Figure 16). These findings are consistent with Marslow's pyramid of needs. Employees first want to have their physiological and safety requirements covered. That's why extrinsic motivators are still essential to attract talent, but studies also show that they might not be as important to motivate them.

Several studies show that benefits have a positive but weak relationship with work motivation or no significant relationship between compensation and employee job motivation. (Ghazanfar et al., 2011; Yamoah, 2014)

The benefits packages offered by the public sector are very attractive, including Health, Dental, Vision, Life Insurance, Legal Services, long-term care, Long Term Disability Insurance, Student Loan Forgiveness Program, Pre-Tax parking, Pre-Tax Reimbursement Accounts, Relocation reimbursement, and several types of leave programs:

- State and Federal Holidays
- Annual Leave/Vacations
- Sick Leave
- Personal Day
- Professional Development Day
- Personal Leave Program
- Family Leave

- Pregnancy
- Catastrophic
- Bereavement
- Military
- Mentoring
- Union
- Jury Duty

A study conducted by Dice.com, the leading website for tech career seekers, that included 7,098 participants, shows the importance that tech professionals give to the available benefits in today’s job market, most of which are offered by the public sector.

Benefits that are Important to Tech Professionals

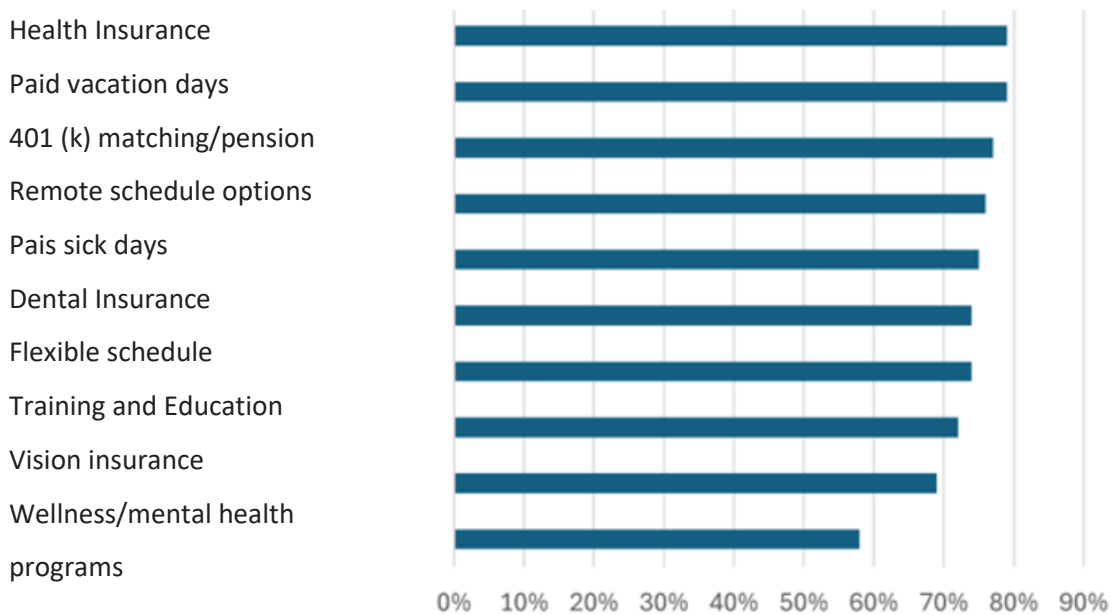


Figure 16: Benefits that are Important to Tech Professionals



The same study shows the gap between employees' benefits and those they find essential, showing again that the public sector offers most of the benefits Tech professionals consider important.

Benefits Employees have vs. Those they find important.



Figure 17: The Benefits Employees Have vs. Those They Find Important

The benefits that tech professionals consider essential are available in the public sector; this is a crucial tool available by management to remind job seekers and to motivate existing team members.

#### **4.1.1.3 Pay**

The idea that the private sector pays better than the public sector might be a common misconception; most of the participants of this study answered ‘Yes’ to the question of whether they think that the private sector pays better than the public sector. Several studies and articles contradict the findings of which sector pays better. Still, most conclude that the difference in pay narrows for jobs with higher education or technical skills requirements. (Miller, 1996; Lausev, 2014; Lewis, Pathak, and Galloway, 2018)

The difference in pay in both sectors also changes in developing countries, the European Union, and the UK. (Blackaby et al., 2018)

Comparably.com is a company that offers job placement services and collects employment data, specializing in salaries and work culture. The results of one of their studies, including 118,275 salary records at small, medium, and large public and private companies in the US, show that, on average, employees can earn more at public agencies than at private companies. The study also offers a more considerable disparity between working for larger and smaller companies; the disparity is even more significant for IT managers. (Table 5)

### IT Salary Comparison – Public vs. Private

Title	Public Company	Private company (segmented by funding raised)			
		\$0 to \$3M	\$3M to \$10M	\$10M to \$30M	Over \$30M
Architect	\$154,000	\$125,000	\$129,000	\$145,000	\$151,000
Data Scientist	\$124,000	\$113,000	\$125,000	\$128,000	\$134,000
Developer	\$114,000	\$95,500	\$99,000	\$104,000	\$107,000
IT Manager	\$127,000	\$92,500	\$90,000	\$92,000	\$115,000
Jr Developer	\$85,000	\$69,500	\$74,000	\$75,000	\$82,000
Lead Engineer	\$114,000	\$115,000	\$121,000	\$131,000	\$135,000
Marketing Manager	\$105,000	\$70,000	\$75,000	\$76,000	\$78,000
Operations Manager	\$114,000	\$69,000	\$75,000	\$82,000	\$94,000
Product Manager	\$126,000	\$97,000	\$102,000	\$111,000	\$117,000
Project Manager	\$113,000	\$89,000	\$92,000	\$100,000	\$106,000
Sales Manager	\$142,000	\$82,000	\$95,000	\$107,000	\$123,000
Sales Rep	\$132,000	\$79,000	\$100,000	\$106,000	\$110,000
Senior Developer	\$130,000	\$73,000	\$117,000	\$119,000	\$125,000
Senior Product Manager	\$161,000	\$130,000	\$129,000	\$141,000	\$147,000
UI/UC Designer	\$104,000	\$82,000	\$84,000	\$89,000	\$99,000

*Table 8: IT Salary Comparison – Public vs. Private*

Another advantage of working in the public sector, the same study shows, is for women; the disparity in salaries for men and women is much higher in the private sector.

(Table 6)

### IT Salary Comparison – Men and Women in Public and Private

Title	Public Female	Private Female	Public Male	Private Male
Architect	\$153,000	\$118,000	\$155,000	\$133,000
Data Scientist	\$127,000	\$110,000	\$135,000	\$111,000
Developer	\$112,000	\$95,100	\$114,000	\$95,700
IT Manager	\$128,000	\$92,500	\$126,000	\$92,500
Jr Developer	\$85,000	\$69,000	\$85,000	\$71,500

Lead Engineer	\$113,000	\$119,000	\$115,000	\$126,000
Marketing Manager	\$97,000	\$75,000	\$110,000	\$81,000
Operations Manager	\$110,000	\$64,000	\$116,000	\$74,000
Product Manager	\$120,000	\$93,000	\$128,000	\$119,000
Project Manager	\$112,000	\$84,000	\$113,000	\$111,000
Sales Manager	\$142,000	\$78,000	\$142,000	\$88,000
Sales Rep	\$118,000	\$74,000	\$134,000	\$83,000
Senior Developer	\$129,000	\$70,000	\$130,000	\$73,500
Senior Product Manager	\$159,000	\$131,000	\$163,000	\$137,000
UI/UC Designer	\$102,000	\$64,000	\$105,000	\$88,000

*Table 9: IT Salary Comparison – Women/Men in the Public vs. Private*

The difference in salaries can also deepen geographically across the US, with San Francisco, Los Angeles, New York, and the District of Columbia (DC) being the cities with the highest pay (Table 7). The District of Columbia and Northern Virginia attract IT talent who are working on jobs for the federal government.

#### IT Salary Comparison – U.S. Cities and Public vs. Private

Title	LA Public	LA Private	New York Public	New York Private	San Francisco Public	San Francisco Private
Architect	\$155,000	\$132,625	\$156,000	\$113,250	\$184,000	\$169,000
Data Scientist	\$126,000	\$119,000	\$140,000	\$124,000	\$159,000	\$136,000
Developer	\$102,000	\$104,100	\$115,000	\$106,700	\$134,000	\$120,000
IT Manager	\$129,000	\$98,750	\$134,000	\$108,500	\$153,000	\$112,000
Jr Developer	\$76,000	\$74,000	\$92,000	\$78,500	\$105,000	\$91,000
Lead Engineer	\$149,000	\$129,000	\$149,000	\$133,000	\$180,000	\$138,000
Marketing Manager	\$93,000	\$79,000	\$102,000	\$79,000	\$122,000	\$102,000
Operations Manager	\$112,000	\$83,000	\$107,000	\$80,000	\$143,000	\$97,000
Product Manager	\$121,000	\$106,000	\$125,000	\$107,000	\$150,000	\$119,000
Project Manager	\$116,000	\$94,000	\$88,000	\$104,000	\$129,000	\$111,000
Sales Manager	\$140,000	\$96,000	\$152,000	\$88,000	\$174,000	\$145,000
Sales Rep	\$131,000	\$92,000	\$150,000	\$83,000	\$141,000	\$149,000
Senior Developer	\$139,000	\$130,000	\$107,000	\$73,500	\$169,000	\$107,000

Senior Product Manager	\$149,000	\$141,000	\$152,000	\$135,000	\$178,000	\$149,000
UI/UC Designer	\$107,000	\$85,000	\$107,000	\$90,000	\$123,000	\$107,875

*Table 10: IT Salary Comparison – Public vs. Private, LA, NY, and SF.*

The US federal government announced for January of 2024 an average raise of 5.2% across all employees, and it also added localities in California, Nevada, New York, and Washington, which will receive more significant locality-based raises. To respond to the competition for IT talent, the federal government will increase the salaries of almost half of its IT employees by up to 33%. “Some 33,000 federal IT workers, computer specialists, computer engineers, and scientists will get pay hikes ranging from 7% to 33% in January, the U.S. Office of Personnel Management (OPM) announced today. The increase follows several government studies that examined the reasons behind the current shortage of federal IT workers. The larger pay increases will be targeted at entry-level jobs, where federal agencies face the most difficulty in hiring workers” (Thibodeau, 2023)

The article also concludes that the pay for IT talent is lower in the public sector than their private counterpart, especially for entry-level IT workers. Entry-level IT workers in the federal government (Below Grade 7 in the pay scale, Table 8) range, before the raise, between \$28,000 and \$35,000, and in the private sector, workers with marketable technical skills can get entry-level jobs with salaries around \$50,000 a year.

#### Federal IT Salaries not adjusted by location

Grade	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9	Step 10
1	21,986	22,724	23,454	24,183	24,912	25,339	26,063	26,792	26,821	27,502
2	24,722	25,310	26,129	26,821	27,124	27,922	28,720	29,518	30,316	31,114
3	26,975	27,874	28,773	29,672	30,571	31,470	32,369	33,268	34,167	35,066

<b>4</b>	30,280	31,289	32,298	33,307	34,316	35,325	36,334	37,343	38,352	39,361
<b>5</b>	33,878	35,007	36,136	37,265	38,394	39,523	40,652	41,781	42,910	44,039
<b>6</b>	37,765	39,024	40,283	41,542	42,801	44,060	45,319	46,578	47,837	49,096
<b>7</b>	41,966	43,365	44,764	46,163	47,562	48,961	50,360	51,759	53,158	54,557
<b>8</b>	46,475	48,024	49,573	51,122	52,671	54,220	55,769	57,318	58,867	60,416
<b>9</b>	51,332	53,043	54,754	56,465	58,176	59,887	61,598	63,309	65,020	66,731
<b>10</b>	56,528	58,412	60,296	62,180	64,064	65,948	67,832	69,716	71,600	73,484
<b>11</b>	62,107	64,177	66,247	68,317	70,387	72,457	74,527	76,597	78,667	80,737
<b>12</b>	74,441	76,922	79,403	81,884	84,365	86,846	89,327	91,808	94,289	96,770
<b>13</b>	88,520	91,471	94,422	97,373	100,324	103,275	106,226	109,177	112,128	115,079
<b>14</b>	104,604	108,091	111,578	115,065	118,552	122,039	125,526	129,013	132,500	135,987
<b>15</b>	123,041	127,142	131,243	135,344	139,445	143,546	147,647	151,748	155,849	159,950

*Table 11: Salary Table 2023 - Federal IT jobs.*

The State of California approved salary increases of 7.5% (in three-year increments effective at the start of its fiscal year, the first day in July, 2.5% in 2022, 3% in 2023, and 2% in 2024). As of January 2024, the IT classification salaries for the State of California are shown in Table 9.

IT Salary Range – State of California by classification

<b>IT Classification</b>	<b>From</b>	<b>to</b>
Technician	\$46,752	\$74,796
Associate	\$54,192	\$95,976
Supervisor I	\$87,504	\$117,252
Specialist I	\$73,692	\$119,172
Supervisor II	\$93,396	\$125,136
Specialist II	\$97,524	\$130,728
Manager I	\$103,092	\$138,144
Specialist III	\$107,532	\$144,108
Manager II	\$125,052	\$152,016

*Table 12: Salary Table 2024 – State of California IT jobs.*

As of December 2023, the California State Controller Office reported 237,973 active employees, including full-time (216,424) and part-time and intermittent employees, compared with Wells Fargo Bank, California’s largest employer, with over

250,000 employees. In 2028, the State Personnel Board approved the consolidation of the IT classifications from 36 to 9; over 10,000 IT civil services positions, around 5% of the state workforce, were impacted. “The Minimum Qualifications for the classifications were developed to allow for the recruitment of a wide range of individuals with a core of Information Technology education or experience. These qualifying patterns balance work experience with formal education. The Information Technology field is unique because many qualified individuals can learn the skills required independently or through working tech jobs instead of through college or trade school courses.” (*CalHR*, 2018)

Comparing Tables 8 and 9 shows that the State of California offers higher starting salaries than the federal government. For higher administrative and policy-influencing positions, the State of California provides Career Executive Assignments (CEA) with salaries reaching \$200,000 annually with three ranges: A, B, and C. These positions are for Deputy Directors and Chief Information levels.

#### **4.1.1.4 Retirement**

Retirement plans were another of the top motivators for employees searching for a job and current employees. Each local, state, and federal government offers a retirement plan. At retirement, most employees receive at least two forms of income: social security and, when eligible, a lifetime annuity. Most also offer 401(k) and 457(b) plans, pre-tax contributions invested with a comprehensive portfolio menu, and the income is taxed at withdrawal time.

The U.S. Internal Revenue Service (IRS) calls the Federal Employees Retirement System (FERS) one of the best retirement systems in the world.

“All federal employees are automatically enrolled in one of the best retirement systems in the world.

Federal employees first hired after December 31, 1983, on an appointment with retirement coverage, are covered by FERS.

The FERS is a three-tiered plan made up of:

- a basic annuity,
- Social Security, and
- a tax-deferred retirement savings and investment plan called the Thrift Savings Plan (TSP).

This three-tiered plan provides benefits for:

- Retirement
- Disability
- Survivors

The Office of Personnel Management (OPM) administers the essential benefits portion of FERS. The Social Security Administration has responsibility for administering the Social Security benefits. The Federal Thrift Investment Board administers the TSP. Federal government retirees receive benefits from all three of these agencies.” (*IRS - FERS, 2020*)

The California Public Employees Retirement System (CalPERS) offers excellent retirement benefits up to 90% of the final compensation. The retirement is calculated based on the years of service (service credit), the final compensation (12 or 36 highest compensation depending on plan and years of service credit), and a benefit factor set at



3% at age 55 (Table 10); depending on the plan, the minimum retirement age is 55.

(*CalPERS, 2023*)

### State of California Retirement Factor by Age

3% st 55 Retirement Formula – Minimum retirement age is 50 years

Age	Exact Year	$\frac{1}{4}$ Year	$\frac{1}{2}$ Year	$\frac{3}{4}$ Year
50	2.400%	2.430%	2.460%	2.490%
51	2.520%	2.550%	2.580%	2.610%
52	2.640%	2.670%	2.700%	2.730%
53	2.760%	2.790%	2.820%	2.850%
54	2.880%	2.910%	2.940%	2.970%
55 or older	3.000%	3.000%	3.000%	3.000%

*Table 13: CalPERS Retirement Factor by Age.*

As of January 2024, CalPERS reported assets for \$482.12 Billion. (*Investments - CalPERS, 2024*)

The modified lifetime annuities allow the spouse or another beneficiary to keep collecting the benefit upon the primary beneficiary's death. Health benefits are part of the retirement packages; alternative one-time refunds as a lump sum payment are also available for retirees who are not vested.

#### **4.1.2 Intrinsic Motivators**

All these great benefits were the top reason for candidates looking for jobs, the same three reasons plus “Like my job” (74% Extremely Important and Very Important) and “Like my Supervisor” (71.3%) are the reason for staying at their current job, followed by “” (69.7%), “Work / Life Balance” (68.8%), and “Like my teammates” (67.2%). (Table 1, Table 2, Table 3)

It's vital to notice that “Like my supervisor” is a critical factor for motivation, but even more crucial is to see that the highest factor for demotivation identified in the survey and consistently reported during the interviews is having “a bad supervisor” (55.7% Extremely important and 13.9% very important). Immediate supervisors are closely in control of the factors that motivate employees to retain employees and achieve a high-performance team and the factors that demotivate them, most of which are intrinsic motivators.

### Factors that demotivate performance

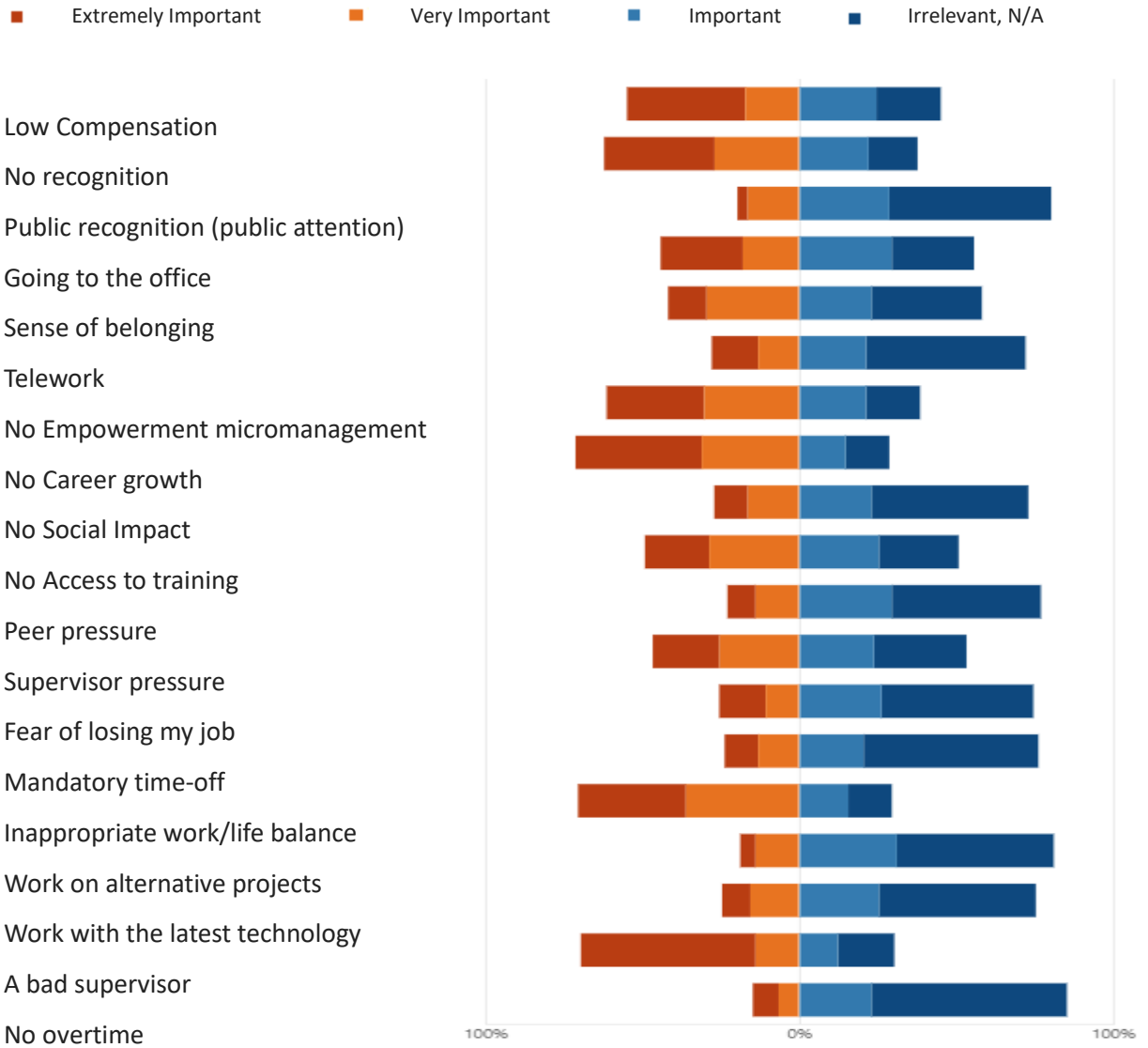


Table 14: Factors that demotivate IT talent.

#### **4.1.2.1 Feeling of accomplishment**

“Like my job” was the top factor for employees to stay at their current job. The challenge for supervisors and managers is how to make the employees like their jobs and, at the same time, achieve high performance.

The survey conducted for this study showed lower-than-expected importance of “Public Service” (22.1% as Extremely Important), contradicting several of the studies on Public Service Motivation (PSM) (Baldwin, 1987; Perry and Wise, 1990; TAYLOR, 2010; Kim *et al.*, 2013) but during the interviews, a familiar feeling was the pride on the job accomplished and the services provided.

Public service managers can easily take advantage of this powerful motivator. Even in the private sector, mission-driven companies successfully motivate employees using this tool. Global analytics and advisory firm Gallup conducted a meta-analysis of almost 50,000 business units across nearly 200 organizations representing almost 50 industries in 34 countries, concluding that “As employees move beyond the basics of employee engagement and view their contribution to the organization more broadly, they are more likely to stay, take proactive steps to create a safe environment, have higher productivity, and connect with customers to the benefit of the organization.” (Groscurth, 2014)

The same study continues: “Understanding a company's purpose helps employees answer yes to the question "Do I belong here?" Gallup's research shows that ensuring employees have opportunities to do what they do best every day and emphasizing

mission and purpose are the two strongest factors for retaining Millennials, Generation Xers, and Baby Boomers.”

During the interviews for this study, IT employees at different public agencies shared their pride in their work and the satisfaction it provides them. A senior developer at the Department of Justice shared: “I am a lead programmer for a team maintaining the application used by law enforcement officers when they stop a vehicle on the road. The accuracy of the information my system provides is key for the safety of the law enforcement agents on the street.”

A system analyst working with Voting Registration Information shared: “I feel like my job supports our democracy, a significant cause to me; my application ensures that every citizen who wants to vote will receive the information they need to exercise their constitutional right.”

A tester at the Department of Social Service shared: “My application supports the licensing of the facilities that provide residential care for adults and the licensing for the In-Home supportive services. My job helps protect our most vulnerable population, senior citizens and children.”

Other employees interviewed shared their pride in their work, members of the Information Security Office by keeping their organization secured, team members of the infrastructure network by supporting the organization running efficiently and without interruptions, and others for helping support their business sections so they can provide the best service possible.

A member of the Project Management Office proudly shared that her project helped reduce the visits to the field offices of the Department of Motor Vehicle, saving people's time and helping the environment by reducing miles driven; others mentioned reducing the time callers spend on the phone.

Each employee interviewed shared a similar story, recognizing the importance of their job by supporting internal or external clients.

A manager commented that he uses the department's mission to motivate his team; he added: "It's easier to motivate the team when the goal is to provide public service than when I was in the private sector, and my team helped the company's CEO to build a rocket to take a vacation in space."

Managers and supervisors must provide all the tools necessary for their team to succeed and facilitate the feeling of accomplishment. In 1970, retired AT&T's Director of Management Development, Robert Greenleaf, published an essay titled 'The Servant as a Leader.' The concept of servant leadership "has evolved as an effective model to drive measurable results by focusing on employees rather than the company. Servant leaders must work harder to evaluate challenges, empower and engage employees, and foster a strong company vision". (Hans, 2023). After more than 50 years, the concept remains of such importance that it is the primary management style of the curriculum of the highly regarded Project Management Certification or PMP.

The servant leadership style promotes the concept of the four Cs: Connection, Clarity, Coaching, and Commitment. The servant leader's goal is to clear any obstacles each team member might face to achieve their goals and support their accomplishments.

#### **4.1.2.2 Career Growth**

The survey for this study shows the importance of career growth in the mind of IT employees during their career life cycle: as an incentive to pursue a new job (recruiting) (60.6%), as an incentive for better performance (top performance) (73.8%), as a reason for leaving their job or looking for a new one (retaining) (56.2%), and a reason for staying at their current job (retaining) (53.3%).

Public agencies must provide a clear career path and support their talent development. In their study, including over 300 employees, Son and Kim concluded that employees with a clear career path were more committed and engaged. (Son and Kim, 2021)

The U.S. Federal Government presents a career path with 15 grades (G1 to G15), and each grade has ten steps with their appropriate salary increase (Table 8). The State of California offers two entry-level positions: IT Technician and IT Associate; besides their student assistance positions, employees then can choose a technical path (IT Specialist I, II, and III) or supervisor and managerial (IT Supervisor I, IT Supervisor II, IT Manager I, and IT Manager II), (Table 9) each classification has three levels with their corresponding salary range.

Utilizing the servant leader style, supervisors and managers must support their employees' career development by allowing them to invest in themselves and support their growth. Most public agencies heavily invest in training, providing access to internal and external online learning management systems (LMS) as on-site and off-site classes and conferences. Leaders can also allow employees to allocate time to work on side projects that might not directly relate to their day-to-day jobs but complement their career development.

Workforce provider Adecco USA published an article citing a survey showing 76% of employees were dissatisfied with their available career growth in the private sector. (Adecco USA, 2009)

The interviews conducted by this study showed that most employees are aware of the career path in their organizations; some of them shared that their agencies make an effort to promote from within their ranks, but others mentioned the opposite, with their management preferring to hire candidates from the private sector or other public agencies. Several employees interviewed shared their concern about a trend of managers hiring candidates from the same cultural background. Managers interviewed denied this claim and mentioned attending mandatory diversity and bias training.

Supporting team members in getting promoted is a great incentive for employees to perform better, but at the same time, it could be a demotivator after the promotion is awarded. A systems architect at a large California State agency shared during his interview that after the 12-month probation period for his promotion from IT Specialist I to IT Specialist II ended, he felt very demotivated as the next promotion might take years,



even achieving this step on his career would allow him to get a 5% increase in salary annually. Promotions and career growth are great motivators but must be accompanied by other intrinsic motivators.

Promoting the wrong person can also significantly impact the rest of the team members. A manager shared during his interview: “A technical lead of a complicated project was motivated when she was told she would get a promotion after completing the project she was leading. After two years of delays and technical challenges, the project was delivered with many issues, and the technical lead still got her promotion, creating much resentment among the rest of her colleagues.”

#### **4.1.2.3 Work / Life Balance**

The survey for this study showed that work/life balance was an essential factor to motivate in achieving higher performance (70.5%). The lack of an appropriate work/life balance is also an important demotivator (70%). Advertising it as a job perk can attract talent during the hiring process. Still, it is more critical to retain employees and motivate them to achieve top performance.

As staffing levels in the private sector are tied to the company’s performance and growth plans, staffing is determined by budget approval in the public sector. IT departments must maintain an appropriate number of positions to ensure managers and supervisors can afford to offer a proper level of work / balance. Management must assume that their staff will work the hours established by their contract (i.e., 8 hours, from 9 to 5 for full-time employees).

Some IT operations require immediate attention, and most security vulnerabilities, network issues, and production defects in applications, especially public-facing applications, legislation-mandated projects, and other tasks, require immediate action. Managers and supervisors can be flexible for other assignments, allowing the team members to accommodate their work schedule.

During the interviews, a manager shared the story of one of her team members with an assignment due the following Monday; the developer wanted to go snowboarding and ask for a day off the previous Tuesday because the slopes are not as crowded during the week as during the weekend promising the task will be delivered on time. The manager granted the request, and the happy employee completed the task with the expected quality level before the deadline.

A supervisor shared the story of one of his testers who asked if she could change her schedule to join her daughter and her kindergarten class in a weekly hike to the river; the supervisor agreed as long as her tasks were delivered on time with the appropriate level of quality. Similar stories were shared during the interviews, such as parents adapting their schedule to drop off and pick up their kids to and from school, team members taking care of older parents or family members, and students preparing for exams and presentations. As long as their work is not negatively impacted, managers and supervisors can support their teamwork/life balance with an equilibrium of empathy and assertiveness.

In his article for LinkedIn, “Recruiting Talent,” Fouad William quotes Microsoft’s co-founder Bill Gates: “The competition to hire the best will increase in the years ahead. Companies that give extra flexibility to their employees will have the edge in this area.” (William, 2019)

#### **4.1.2.4 Empowerment the Opposite of Micromanagement**

There are many studies about the benefits of empowerment, which are also available for IT talent. Australian researchers Tretiakov, Jurado, and Bensemman conclude in their work: “The results are consistent with the view that, at IT organizations, employee empowerment both promotes employee ability and willingness to be flexible and facilitates the organizational structures and practices that enable flexible use of HR resources.” (Tretiakov, Jurado and Bensemman, 2023)

Other studies conclude that empowering employees to increase engagement and encouraging the participation of junior employees during the planning stages is beneficial (Stafford, 2011). Mexican researchers at the University of Veracruz found that empowering employees contributes to sharing responsibilities and increasing the commitment of managers and employees; they describe the benefits as three-fold:

1. Improving the working environment,
2. Reflecting their philosophy of participation,
3. Fulfillment of quality standards.

(Amezcu García, Pérez Ceballos and Quiroz de la Cruz, 2019)

In his book *Turn the Ship Around*, retired US Navy Captain David Marquet presents the Leader-Leader Approach to empower team members utilizing three components: Control, Competency, and Clarity. This book tells the story of transforming a nuclear submarine crew from low morale and performance to a model to follow by empowering its members. Even in a rigid leader-follower approach environment, as in the Navy, empowerment is a powerful tool to create leaders and improve morale and performance.

Managers have a hard time abandoning the instinct to take control and make all the decisions, but they must trust their team members by giving them the independence to decide the best approach to face an issue. The survey for this study showed that empowerment is a potent form of motivation (70%) and a strong demotivator when a lack thereof (61.4%) was confirmed during the interviews. Also, the top issue when asked: What would you like your manager to do less? The answer was: ‘Micromanagement.’

Psychologist and clinical professor of organizational behavior at the University of Texas, Robert Hicks, defines micromanagement as “...a toxic management style that negatively affects the workplace morale and productivity.” Hicks identifies that the cause of micromanagement is based on two flawed beliefs:

1. “I can do the work better than others,”
2. “The judgment of others cannot be trusted.”

(Hicks, 2021)

Interviews conducted during this study showed that employees might confuse micromanagement or lack of empowerment with allowing shortcuts in the established process. As with other IT projects, application development follows a process to ensure quality. Team members shared that they wanted to skip some of the steps of the established processes since they consider them unnecessary, and they feel micromanaged when the managers require that the process be followed. Managers must communicate well with their team members, explaining the benefits and the reasons for adhering to such methods.

Top performers usually excel at improvisation based on their experience and talents, and managers should encourage that by following the processes simultaneously; processes also can be improved, and managers must be open to ideas proposed by their team members; it is a continuous improvement cycle. “Empowerment and trust — paired with guidance — cultivate innovation and drive higher employee engagement...” (Martin, 2023)

#### **4.1.2.5 Telework**

The more consistent finding of this study is the value of telework on employee motivation for IT talent in the public sector. Every single employee interviewed expressed the importance of working from home. Employees have ignored applying for positions where remote work was unavailable or even for hybrid openings; others have even moved laterally looking for a telework position.

A supervisor frustrated with his upper management said: “They (upper management) talk about the importance of communication and how much they care about their employees, that we are the most important asset of the organization, but then out of the blue, they told us that we have to start going to the office twice a week, no heads up, no explanations for the reasons of that decision.”

Many studies support the conclusion of the benefits of telework and the adverse effects of not offering such programs. A survey conducted by the Office of Personnel Management with the participation of 376,577 federal employees and supported by other research concluded: “Many studies show that decoupling between telework eligibility and participation negatively affects job satisfaction, perceived fairness, and intention to stay at a job” (Bae, Lee and Sohn, 2019)

The benefits of telework extend beyond job performance as a study by University of Texas researchers concluded: “reduce energy consumption and traffic congestion. They state that the trend is also perceived to improve employee productivity, decrease absenteeism, and increase employee retention.” (Noonan and Glass, 2012)

Critics of telework cite multiple arguments against telecommuting, including safety, confidentiality, company secrets, ergonomics concerns, equipment maintenance, lack of social interactions, causing family issues, lack of work oversight, and adverse economic impact on business around offices. Most of these concerns are worth exploring and can be addressed, but this study focuses on IT talent motivation and performance.

Of these arguments, lack of work oversight or perceived notion of employees easing off are more related to performance. These are valid arguments; the solution falls on the managers and supervisors. Leadership is accountable for their teams' performance; the manager must correct it if one employee is not performing as expected. Telework can be a privilege instead of a right; employees can be forced to return to work from the office if they do not deliver as agreed with their managers.

Lack of social interaction is another argument that can affect performance. Respondents to the survey for this study identified two factors that can improve performance: A sense of belonging (74.6%) and team camaraderie (72.1%). As the lack of job oversight, this is an argument that the manager can address. An employee shared her experience: “My team meets for lunch once a month where we don’t talk about work, just hang around...” Another shared: “During COVID, when we were sent home, my team would meet for lunch at a park, maintaining social distance. I looked forward to these meetings where we just talked and shared a meal; it would compensate for my inexistent social life.”

#### **4.1.2.6 Sense of Belonging and Team Camaraderie**

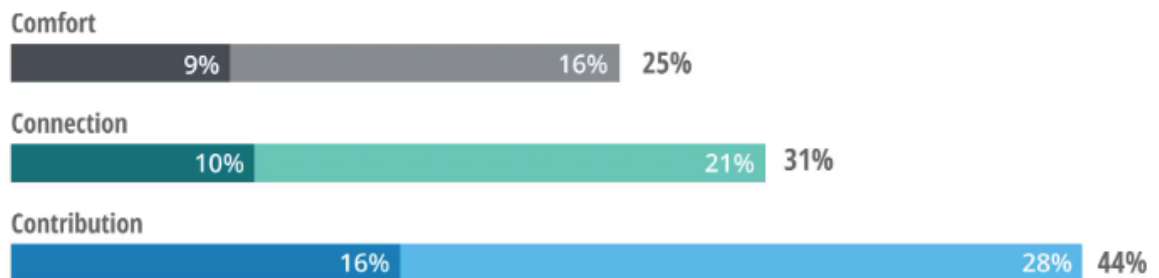
Employees strive in an environment that supports them, where they feel they belong and are accepted. Along with ‘Sense of Belonging’ and ‘Team Camaraderie,’ the employees surveyed said ‘Like my Job’ and ‘Like my supervisor’ are fundamental motivators, 73.8% and 71.3%, respectively.

In a recent study, John Nkeobuna and Nnah Ugoani conclude: “Morale is a feeling of being accepted by and belonging to a group of people or employees through adherence to common goals. Increased job satisfaction is commonly believed to result in improved performance”. This study and others also explore the concept that improved performance produces job satisfaction.

**Contribution and connection drive belonging more than comfort alone**

Which of the following is your organization's most significant driver of creating belonging?

- Workers who can bring their whole, authentic selves to the workplace
- Workers who are treated fairly
- Workers who can identify with a defined team (e.g., function, department, geography, etc.)
- Workers who have a sense of community and feel connected to others in the organization
- Workers who are valued for their contributions
- Workers who feel aligned with the organization’s purpose, mission, and values



Deloitte Global Human Capital Trends survey, 2020.

Deloitte Insights – [deloitte.com/insights](https://deloitte.com/insights)

Table 15: Contribution and Connection - Belonging.

In 2020, human resources consulting firm Deloitte identified belonging as the top human capital issue along with well-being. (Schwartz, Denny and Mallon, 2020). It continues: “Promoting respect and fairness for all is a large part of many organizations’ diversity and inclusion efforts, and those efforts, when effective, pay off. A 2019 study by BetterUp found that workplace belonging can lead to an estimated 56 percent increase in job performance, a 50 percent reduction in turnover risk, and a 75 percent decrease in employee sick days. The study found that a single incidence of “micro-exclusion” can

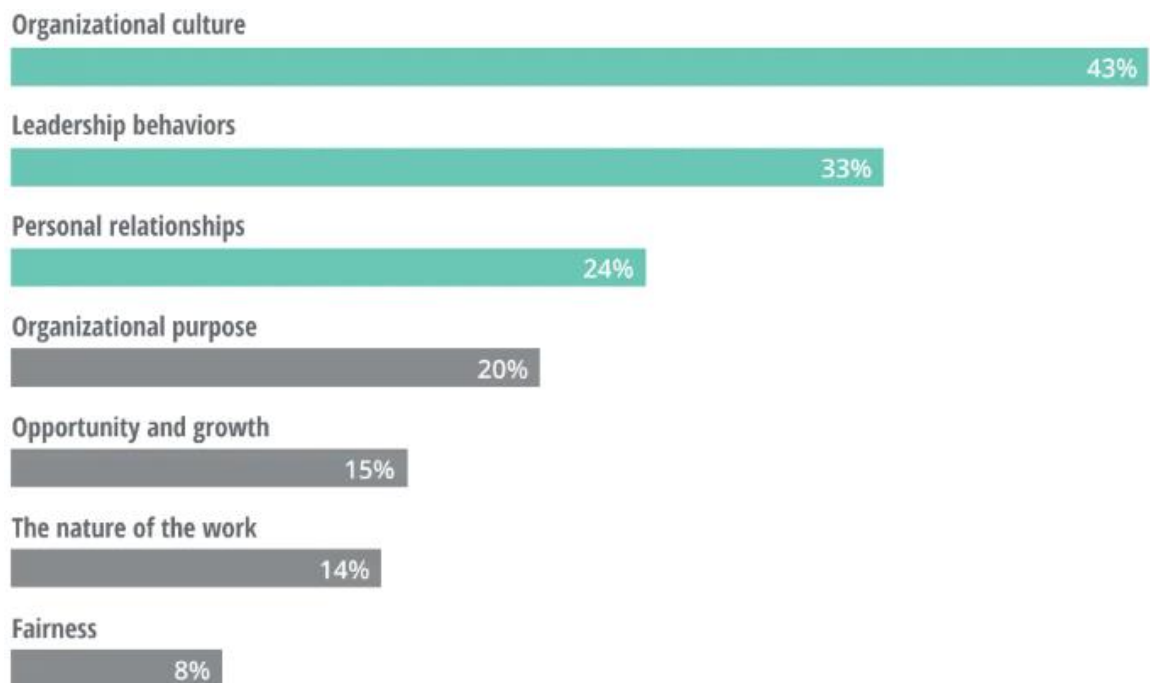


lead to an immediate 25 percent decline in an individual’s performance on a team project.”

The study's follow-up survey finds that a sense of belonging is achieved when they feel they contribute to the goals. Their ideas and inputs are well received, and also when they develop meaningful relationships with their coworkers and their supervisors.

**Culture, leadership, and personal relationships are the most significant factors influencing an organization’s ability to create belonging.**

What factors most influence your organization’s ability to create a sense of belonging?  
Select up to two.



Deloitte Global Human Capital Trends survey, 2020.

Deloitte Insights – [deloitte.com/insights](https://deloitte.com/insights)

Table 16: *Creating Belonging.*

Consulting firm Gartner also finds the value of promoting belonging:

- All employees want to feel that they belong in the workplace.
- Creating a sense of belonging in the workplace results in more significant on-the-job effort and high employee performance.
- To build a sense of belonging, eliminate outsidership, bring everyone on board, and demonstrate care through benefits and initiatives.

It concludes: “Belonging is a key component of inclusion. When employees are truly included, they perceive that the organization cares for them as individuals — their authentic selves...It’s good for employees — and ultimately improves business performance.” (Wiles and Turner, 2022)

This important intrinsic motivator is in the manager’s toolbox by making their team members heard, recognizing their contributions, respecting their ideas, actively listening, treating them fairly, making individual connections and promoting connections among them, and reminding them of their purpose and aligning them with the organization’s mission and vision.

Some companies in the private sector offer signing bonuses for new employees, annual bonuses tied to the employee’s performance and the company’s performance; some also offer stock option plans as signing bonuses or incentives based on performance. Few private companies offer severance packages, especially for C-level and

senior positions; in the U.S., severance pay is an agreement between the employee and their employer but is not required by law in the Fair Labor Standards Act (FLSA).

*(Severance Pay, 2024)*

### Extrinsic Motivators Public vs. Private

	Survey Results Ranking (answers Extremely Important + Very Important)	Public	Private
Benefits	1 (94.2%)	<b>Most public servants receive benefits packages including Medical, Dental, Vision, Paid Leave, Wellness and Mental assistance programs, and Financial and Legal assistance programs.</b>	Some private companies do not offer any benefits, and this depends on the size and employee level of the company.
Retirement	2 (90.1%)	<b>Most government agencies offer excellent defined benefit plans (lifetime annuities) and 401(k) plans.</b>	Only a few private companies offer retirement plans. Most mid-size and large-size companies offer 401(k) plans.
Job Security	3 (89.2%)	<b>Undoubtedly, the public sector offers more job security than private. The public sector is not immune to economic conditions, but no layoffs were announced in the worst recession in over 70 years. Some public agencies furloughed employees.</b>	Over a quarter million IT employees have been laid off since 2024.
Pay	4 (73%)	<b>The public sector offers better compensation, especially for starting positions.</b>	Upper management, IT executives, and sales reps can get better pay than in the public sector.
Signing bonus		Not offered	<b>Common practice, especially in large size companies</b>
Annual or performance bonus		Not offered	<b>Common practice, especially in large size companies</b>
Stock options		Not available	<b>Some publicly traded</b>

			companies might offer it.
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Table 17: Extrinsic Motivators Public vs. Private.

All the extrinsic motivators available for managers in the private sector, except signing and performance bonuses or stock options, are available for managers in the public sector. Public service managers can offer the same or better pay, benefits, vacations, and other leave types. The private sector does not provide the same level of job security as the public sector. Most public agencies offer excellent retirement plans, and only a few private companies offer any other kind of retirement except matching 401(k) plans.

This study's survey results and interviews show that the top most essential extrinsic motivators are Job Security, Pay, Retirement, and Benefits. Overall, public sector organizations can offer better extrinsic motivators than private sector companies.

#### Intrinsic Motivators

	Survey Results Ranking of Motivators	Percentage of answers Extremely Important + Very Important
Felling of accomplishment	1	86.9%
Nice Supervisor	2	78.7%
Career Growth	3=	73.8%
Telework	3=	73.8%
Work/Life Balance	5	70.5%
Sense of belonging	6	74.6
Team Camaraderie	7	72.1
Access to the latest technology	8	59.8
Clear Directions	9	55.8%
Good Communication	10	52.5%
Well established processes	11	48.8%
Social Impact/Public Service	12	40.8%

The most important intrinsic motivators identified by this study's survey and interviews are available for managers of both sectors, public and private. Public service and social impact are intrinsic motivators available only for the public sector and non-profit organizations; still, an essential finding of this study is how low the respondents ranked this motivator. Contrary to the extensive literature on Public Service Motivation (PSM), public servant IT professionals who participated in this study didn't identify PSM as an extremely or very important motivator. Most respondents did acknowledge the importance of their contributions to their organizations' missions.

## **4.2 Research Question II: Is technical talent motivated differently than non-technical team members?**

The bottom three needs identified in Maslow's Hierarchy of Human Needs (Figure 4) apply to all individuals, regardless of their background; the top two needs of the pyramid might differ based on a team member's background. Self-actualization and Esteem have different meanings based on the employee's personality and upbringing.

Muamer Bezdrob and Mirha Car concluded, after a 10-year study of technical and non-technical employees in the IT industry, that the main difference between technical and non-technical employees is related to self-actualization and professional advancement, and there is no difference in general characteristics. (Bezdrob and Bičo Ćar, 2020)

Managers and supervisors must learn their employees' currency (what makes them tick) and what they like to do to motivate technical employees to make their jobs more playful and rewarding. In his work *Motivating Technical Professionals Today*, Ralph Katz concludes that "technical talent find their work truly motivational when they have fun doing it." (Katz, 2005). It cites Hackman and Oldham's framework for work motivation, which aligns with the results of the survey and interviews for this study. Team members like to feel that they belong and that their work makes a difference when they feel empowered and their efforts recognized.

## Framework for Work Motivation

Dimensions of Task Characteristics	Definitions
Skill Variety	The degree the job requires using different skills, abilities, and talents.
Task Identity	The degree to which the person feels they are part of the whole job or project activity from beginning to end.
Task Significance	The degree to which the job is considered essential and has an impact on the lives of others.
Autonomy	The degree of the job provides freedom, independence, and discretion in how the work is carried out.
Feedback	The degree to which the person is provided with clear and direct information about the effectiveness of their performance.

*Table 18: Framework for Work Motivation.*

Human capital consulting firm Blessing/White conducted a study including 946 managers/leaders (MGR) and three hundred and thirty-six individual contributors (IC) in the IT industry, mainly from the USA, Europe, and India, concluding the following as the top needs of technical people: (*Leading Technical People*, 2013)

- Autonomy
- Achievement
- Keeping Current
- Professional Identification
- Participation in Mission and Goals
- Collegial (not directive) Support and Sharing

The study also identifies the characteristics of technical people based on the respondents' answers:

#### Characteristics of Technical Individual Contributors vs. Managers

	Ranking Individual Contributors	Ranking Managers
I like to learn and build my skill sets; I value personal development	1	2=
I prefer clear directions and few check-ins	2	5
I prefer independence when deciding how to get my work done	3	6
I like to brainstorm and share ideas with others	4	2=
I look for variety in my assignments	5	9
I like to solve problems independently	6=	8
I want to be recognized for my professional accomplishments and successes	6=	1
I strive to stay current on the latest technology and industry advances	8	12
I need time to think before reacting	9	10
I like to be the "expert."	10	4
I must understand the "why" — the "big picture" — before I am fully committed to a project.	11	7
I work non-stop to solve problems, even if it means redoubling efforts	12	19
I identify more with my profession than with my organization	13=	15
I need to understand how my work contributes to the organization's success	13=	10
I tend to be skeptical	15	17
I can be competitive with other team members	16	14
I assert strong opinions that can sometimes lead to arguments or debates	17	16
I have needs and concerns that are different from the other non-technical people I work with	18	18
I need to be convinced of the value of new ideas	19	13
I become disengaged when I can't achieve a balance between work and my need for learning	20	20

*Table 19: Characteristics of Technical People.*



Dr. Saraswathi and his team at the Chaitanya Bharathi Institute of Technology conducted a study comparing factors motivating IT and non-IT employees, producing different results. Both types of employees consider work a top motivator; IT employees identified growth and recognition as essential motivators, and non-IT employees their personal life and status. (Saraswathi, 2011)

Job status is more critical for non-technical employees than for technical employees; for instance, in the finance industry, many job positions include the VP (Vice President) on the title.

#### Ranking of Motivators for IT vs. non-IT employees

<b>Factors</b>	<b>Rank by IT Employees</b>	<b>Rank by non-IT Employees</b>
Growth	1	11
Work Itself	2	2
Job Responsibility	3	12
Advancement	4	5
Recognition	5	10
Personal Life	6	1
Status Job	7	3
Job Security	8	4
Working Conditions	9	6
Company Policies	10	7
Interpersonal Relationship	11	8
Achievement	12	9

*Table 20: Motivators for IT vs. non-IT Employees.*

#### **4.2.1 Access to the latest technology**

Almost 60% of the respondents to the survey for this study agreed that access to the latest technology (an example of currency) was an important motivator.

A smaller California state department executive confirmed the survey results, which show that technical employees love to work with the latest technology. This Chief Information Officer (CIO) mentioned that when he was building his network team from scratch, he approached a network specialist who used to work for him at his previous agency, offering him a promotion to join his new team. The network specialist responded that he was flattered, but his current agency was larger with a much bigger IT budget, and they could afford the latest technology. This IT talent prioritized access to work and learning the newest technology over more money and a step in his IT career.

An application development team manager shared the story of when she convinced a candidate to accept her offer over an existing one. The candidate already had another job offer but agreed to be interviewed. After receiving the new offer to join her team, the hiring manager asked the new hire what made him choose a position on her team over the existing offer, and the new developer said that during the interview, she had mentioned that they were working with blockchain, and that was something that he wanted to learn and explore. (Blockchain is the technology behind cryptocurrencies but has other business applications).

Even if the team cannot access that technology, allocating time on their work schedule to research a topic that interests them or attending a class or conference on a new technology or a subject they want to learn is a great motivator.

Artificial Intelligence (AI), Cloud Computing, Amazon Web Services (AWS), Azure, Virtual Reality (VR), voice-recognition, Agile methodology, SIRI, Alexa, Blockchain, Sustainability, DevOps, Continuous Development and Continuous Integration (CD/CI), Quantum Computing, Metaverse, Robotics, Internet of Things (IoT), Natural Languages, Big Data, the list of new trends and new technologies is very long, providing plenty of opportunities for IT talent to learn and research.

#### **4.2.2 Let Smart People Be Smart**

Technical employees are great contributors but require an environment where they can do their best creative work to benefit themselves and the organization. That environment works best when a leader heads it. Much literature has been written about differences between managers and leaders, but still, the former is the most common practice.

Famous leaders contribute to the idea of letting intelligent people be smart and get out of the way and allow them to perform, like Apple Computers' co-founder Steve Jobs: "It doesn't make sense to hire smart people and then tell them what to do; we hire smart people so they can tell us what to do." (Schwantes, 2017) or Chrysler's former president Lee Iacocca: "I hire people brighter than me and get out of their way." (Greathouse, 2019)

Interviews for this study showed that IT talent loves intellectual challenges and problem-solving but doesn't like to be told how to do it. Managers must trust and allow them to develop their ideas; after providing clear directions and setting constraints, they must support them by clearing any obstacles they might face to achieve the expected results.

As part of the interviews for this study, a manager shared his story of when he was an individual contributor working as a consultant for a federal agency: "I was working on the data conversion of a large legacy system and was assigned the task of automating the data validation; the manager, a former developer, told me how to do it. After some analysis, I came back with a different approach, but he kept pushing on his way of doing it; after a few rounds of discussions, he finally let me do it my way. As a result, my deliverable saved the agency \$1.2M in development costs and increased the quality of the data converted."

#### **4.2.3 Clear directions and well-established processes**

"Give me clear directions" was one of the answers with the most importance to the question: "What would you like your manager to do more?" and the answer considered of the most importance to the question: "What would you like your upper management to do more?" was "Promote consistent processes."

During the interviews for this study, several employees shared their frustration with the need for more precise, established processes and their impact on their

engagement and motivation. A lead developer shared his story: “I can’t continue working like this; it’s very frustrating. The lack of business requirements documentation causes confusion between the developers, testers, and business users. We need to guess what business users want based on what they say during meetings or emails; then, the testers interpret the requirements differently. We waste time and resources, and then the business users get frustrated, saying we never deliver anything on time.”

A Systems Architect shared: “I came to this agency thinking the processes would be much better since it’s a much bigger organization, but it might be even worse. They confuse Agile methodology with let’s start developing something, and we’ll change it later. The stand-up meetings turn into 2-hour meetings arguing what we are trying to do, changing priorities, identifying a missing requirement that causes a complete change of the architectural approach but then demanding we deliver in the same amount of time”. (Agile is a Software development approach based on smaller iterations, usually two or three weeks, delivering incremental value instead of the traditional waterfall approach where all the requirements are set at the beginning, and the complete solution is implemented at once. Stand-ups are quick meetings where contributors share what they worked on the day before, what they plan to work on that day, and if they have any blockers.)

There is extensive literature on the benefits of IT Governance maturity (Varghese, 2004; Simonsson, Johnson, and Ekstedt, 2010; de Oliveira Moraes and Laurindo, 2013), but the interviews conducted by this study show the powerful demotivator the lack thereof can be. As IT talent is motivated by challenges and demands autonomy, they also need clear processes to deliver their solutions successfully.

Most studies found no differences when motivating technical and non-technical employees, including research by the Naval Postgraduate School Janice Veneri (Veneri, 1988) and the University of Dayton researchers Thomas Ferrati and Larry Short (Ferrati and Short, 1986) and the University of Maryland researchers Kathryn Bartol and David Martin (Bartol and Martin, 1982). Other studies find some minor differences pointing to career growth and participation in decision-making.

Motivating non-technical team members is not homogenous, as non-technical talent encompasses many disciplines, from accountants and sales representatives to maintenance crews and gardeners. Even though most technical employees like intellectual challenges and providing solutions, different personalities can be recognized among technical talents. Personalities for testers and technical writers can differ from coders, network, and cybersecurity specialists, inferring that motivating all technical talent might not be homogenous.

While the bottom three needs in Maslow's hierarchy apply to most individuals, different personalities might react differently to specific intrinsic motivators. This study's survey and interviews identified the IT talent's currency or what makes them tick that can be used to satisfy the top two needs of the pyramid: Esteem and self-actualization.

### **4.3 Research Question III: What other factors, reasons, or strategies are public managers overlooking when recruiting, motivating, and retaining technical talent?**

The sections above established that the public sector offers competitive salaries and excellent benefits and that an array of intrinsic motivators is available for public servant managers. Public agencies must improve how they advertise public service benefits when recruiting and utilize these intrinsic motivators to motivate and retain their technical talent.

#### **4.3.1 Recruit talent where the talent is**

Most public agencies have their recruiting websites where candidates can search and apply for open positions; the federal government utilizes [usajob.gov](http://usajob.gov), the State of California has [jobs.ca.gov](http://jobs.ca.gov), the State of New York has [statejobs.ny.gov](http://statejobs.ny.gov), and the city of Los Angeles utilizes [lacity.gov/jobs](http://lacity.gov/jobs). Some public agencies advertise their vacancies on career websites like [indeed.com](http://indeed.com), [dice.com](http://dice.com), [linkedin.com](http://linkedin.com), and others.

Government agencies must go where the technical talent is to appeal and recruit the best potential employees. In an interview with consulting firm McKinsey, Twilio's CEO Jeff Lawson, when answering the question about how he built his development team: "We just started getting out into the communities of developers, where they hang out online and offline—going to hackathons and meetups, meeting developers online." Lawson added about recruiting: "Whether you're a leader or a line developer, you're just one of many. And so, if you're recruiting technical talent at a company that's not

primarily a software company, the pitch is that you get to come in and be part of this key transformation into a digital company.” (Roche and Srivastava, 2021)

Public agencies hold job fairs exclusively for their departments and participate in open job fairs, but meeting potential employees where they spend time online would open the opportunity to other potential candidates. A step further in posting job openings on career websites would be advertising on social media platforms such as Instagram and TikTok.

One of the powerful intrinsic motivators mentioned earlier is job flexibility; having public servants working in academia can be a triple benefit: 1. Public servant managers and technical experts can get motivated by working in an alternative environment doing something they might want to do. 2. Students can get teachers with hands-on experience and expertise, and 3. Public servant managers can promote working in the public sector, advertise job positions directly to potential candidates, and identify students who could fit their organizations well.

#### **4.3.2 Shorten and Simplify the Hiring Process**

During the interviews conducted for this study, frustration over the hiring process was a common theme among hiring managers. “The hiring package that my HR department requested for my last hire included 42 forms, a copy of the job posting, a list with all the candidates who applied, the grading criteria applied, the justification of the candidates invited to interview, the transcripts from each panelist of all the candidates interviewed, a signed Nepotism form from each panelist, the list of the job references, the



answers provided by the references, and several more”. Documenting the hiring to ensure that the best candidate was hired without personal preference is important, as well as making the process easy and efficient for the hiring manager.

Since positions in the public sector are approved and funded by a budget, some agencies try to eliminate them if not fulfilled after a determined period. Upper management then pushes to reduce the vacancy rate many times, forcing hiring managers to fill the position with the first available candidates instead of taking the time to hire the best candidates.

The onboarding process in many public agencies is also slow and bureaucratic causing to miss opportunities of recruiting top talent. A hiring manager shared her story during an interview for this study: “In our agency, the hiring process starts with the reapproval of the position, even if previously approved by budget, then posting the position in the state career website for at least two weeks, after that period ends we have to review every single application ranking each candidate based on a given criteria, schedule the interviews with a hiring panel and each interview is documented and graded, candidates must take an exam to qualify for the classification they are applying, the best candidate is selected and the hiring manager reaches back to the candidate asking for the references, after references are checked, if the candidate comes from another agency the hiring manager must contact them to request the review of the candidate’s personnel file, a package with several forms is sent to HR. HR then confirms that all required forms are correctly filled (they usually aren’t, correcting minimum mistakes like missing the position number that is manually entered in each form); HR then checks if the candidate meets the minimum qualifications for the position, including education and experience, a

tentative job offer is sent to the candidate after the candidate accepts (without knowing the salary yet). Another team in HR determines the starting salary based on different criteria; the hiring manager then sends the final offer, and after the candidate accepts, the hiring manager schedules the fingerprint for the background investigation that is sent to the Department of Justice after it comes back clear the hiring manager can arrange starting date. If the candidate disagrees with the salary offered, the hiring manager can start another process called Hiring Above Minimum, which might produce a higher salary.”

More than one hiring manager interviewed shared that they lost good candidates due to the time it took to return to them with the final offer. Speeding up and simplifying the process would allow hiring managers to recruit top candidates; good talent usually has multiple offers, and less qualified candidates can wait for this long process since they do not have as many opportunities.

### **4.3.3 Interviewing is a two-way conversation**

Top talent usually have more opportunities and get the luxury of finding the job they like in the environment they want. Good candidates want to ask questions about the department, the section, the team, the style of the manager, and the peers with whom they will interact—bringing the top people to the interview and allowing the candidate to ask questions to know if the hiring department is a good fit for them.

Career website indeed.com, in an article about recruitment strategy, recommends “including employees throughout the process, showing off your brand, treating

candidates like customers, considering past candidates, and using social media.” (Indeed, 2024)

Keeping the candidates informed during the process, sending a personal message to those who were not selected, and providing feedback to help them improve their profile or interview techniques are ways to show candidates the quality of the work environment. The candidate not hired for the current job opening might be a great candidate for another opening; they will also share their experience with other job seekers, speaking positively.

#### **4.3.4 Promoting Entrepreneurship**

Technical talents are natural problem solvers who value recognition, a sense of belonging, and participation in the decision process. Promoting an entrepreneurial environment engages team members and adds value to the agency or department's services.

Several studies support the benefits of employee entrepreneurship. (Su, Sun, and Zhao, 2023). More studies focus on entrepreneurship in the private sector, but research is also applied to the public counterpart. The National University of Singapore’s researchers concluded that task-oriented, relations-oriented, and change-oriented leadership positively promotes public sector employees’ entrepreneurship. (Demircioglu and Chowdhury, 2021)

During the interviews for this study, an application development manager shared a success story: “I asked each developer and business analyst from my team to spend time sitting next to the customer service representative who uses the application that we maintain sharing a headset to listen to the conversations; seeing our clients (the users of our application) navigate through our application and interact with the customers motivated the team to come back with process improvements and enhancement to the application to make their day-to-day easier. The employees’ engagement and pride when they delivered the solution and the gratitude and recognition of upper management had an incredible impact on our team’s morale.”

In his presentation “Entrepreneurship for Corporate Leadership,” Swiss School of Business and Management’s professor Dr. Minja Bolesnikov adds: “Encouraging entrepreneurship among employees can lead to higher levels of engagement and satisfaction...” (Bolesnikov, 2024)

As part of the modernization effort utilizing an entrepreneurial approach, a large State department dramatically improved customer service and saved millions of dollars at the same time by introducing the latest technology, the utilization of Artificial intelligence (AI), Voice Recognition, Bar Code scanners, Fingerprint scanners, Robotics, Optical Character Reader (OCR) transformed the user experience switching services online avoiding millions of customers visiting the field office. (Amy-Vogt, 2022; Peterson, 2022).

#### **4.3.5 Invest in Personal Relationship**

“Like my Supervisor,” “Like my Teammates,” and “Sense of Belonging” was the top motivators and reasons for staying at their current jobs identified as part of the survey for this study. Investing in personal relationships with team members and promoting healthy relationships among teammates retains and motivates employees. Several studies support this concept; Emma Seppala and Nicole McNichols write in an article for Harvard Business Review: “In healthy work relationships, everyone benefits, and everyone experiences moments of authentic happiness and enjoyment. Businesses thrive under such leadership...Nobody brings out as much engagement and performance as leaders who can balance between the head and the heart ...it brings positive energy and empathy to the management style. And when your team feels inspired and taken care of, they bring their best selves to work.” (Seppala and McNichols, 2022)

Employees interviewed confirmed that positive approach: “Sometimes it doesn’t even seem like work; it’s more like friends getting together. We support each other, celebrate wins, and help each other succeed. The relationships extend outside the work environment; Comments during the interviews support this concept: “We go out for drinks and even meet over the weekends with our families.” “We play a round of golf every other week, we have a team meeting and even our one-on-one in a relaxed and fun environment; I look forward to it,” “It meant a lot to me when the whole team showed up at the hospital when I was taking care of my mom.”

Employees spend many hours with coworkers and direct supervisors every day at work. “Does Happiness Promote Career Success?” UC Riverside researchers Julia

Boehm and Sonja Lyubomirsky conclude that a wealth of research suggests that happy and satisfied team members are more successful in the workplace. (Boehm and Lyubomirsky, 2008). Supervisors and managers must develop people skills and, while respecting boundaries, establish healthy relationships in their teams.

Establishing personal relationships between managers and team members is an excellent way to build mutual trust. In an article for Forbes, Sharissa Sebastian stresses the importance of caring for employees as people: “Truly care for your employees as people and not just employees. In other words, be genuinely curious about what they enjoy and don’t, their aspirations, what motivates them, what they need from you, and so on. Then, be prepared to advocate for them and have their backs so they feel supported. Those employees will often go the extra mile for you when you go the extra mile for them.” (Sebastian, 2022)

Getting to know employees personally by asking about their personal goals and their lives helps the managers help the employees accomplish their goals. Communication must be both ways, being genuine and responsive. Knowing the team members helps anticipate decreased performance due to employee burnout or personal issues and potential reactions toward organizational changes.

Engaged team members shared their stories during the interviews: “Coming to work is fun; I feel my co-workers are like family or friends, we support each other and even compete at work like when we play golf together,” “I like when my manager complaints about upper management and expresses what the team is thinking, we bond in different ways. The whole team goes out for drinks once a month with the understanding

that what is said at the bar stays at the bar. I look forward to these nights out with coworkers.”

Several studies agree with the relationship between work friends and team performance. (Jehn and Shah, 1997; Okoe, Boateng and Mensah, 2016; Chung *et al.*, 2018).

Human Resources (HR) departments in the public sector and IT managers must adjust their strategies and consider the following factors to attract, retain, and motivate their IT talent:

#### Other strategies and factors to attract and retain IT talent

Strategy, reason, and factor	
Recruit talent where the talent is.	Reach out where potential candidates spend time online and offline.
Shorten and simplify the hiring and onboarding process	Ensuring new employees are hired fairly is essential, but avoiding losing good candidates is critical to recruiting the best talent.
Interviewing is a two-way conversation.	Top IT talent has opportunities and the luxury of picking the best job. Treating prospects like clients, bringing the best future colleagues, and keeping them informed increase the chances of hiring.
Promoting entrepreneurship	Technical talent is natural problem solvers and likes to see their ideas implemented; providing a supporting environment will increase their level of engagement.
Invest in personal relationships.	Knowing team members personally helps understand their currency, anticipate potential issues, and build mutual trust at the same time.

*Table 21: Strategies and factors to attract and retain talent.*

#### 4.4 Research Question IV: What factors is upper management overlooking?

Executives across federal, state, and local governments agree that using technology to deliver the services their department must provide is essential. Billions of dollars are allocated to Information technology every year in the government budget; IT executives consider all the factors to optimize the utilization of these resources; the level of engagement and performance of their IT talent is critical in obtaining the best return on the investment. In 2021, California, the most populated state in the United States, led the IT spending with almost 9 billion dollars. (Govtech, 2022)

Projected State and Local IT spending (2022-2028 in Billions)

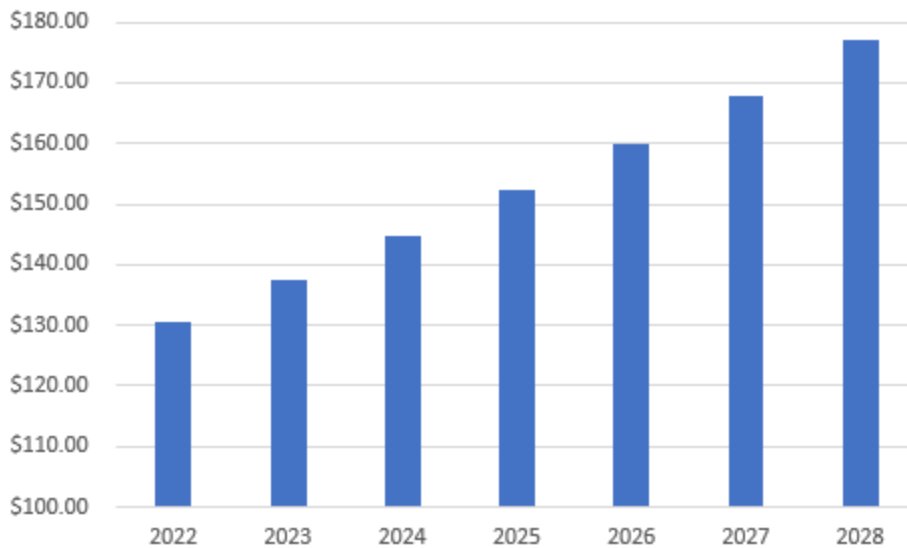
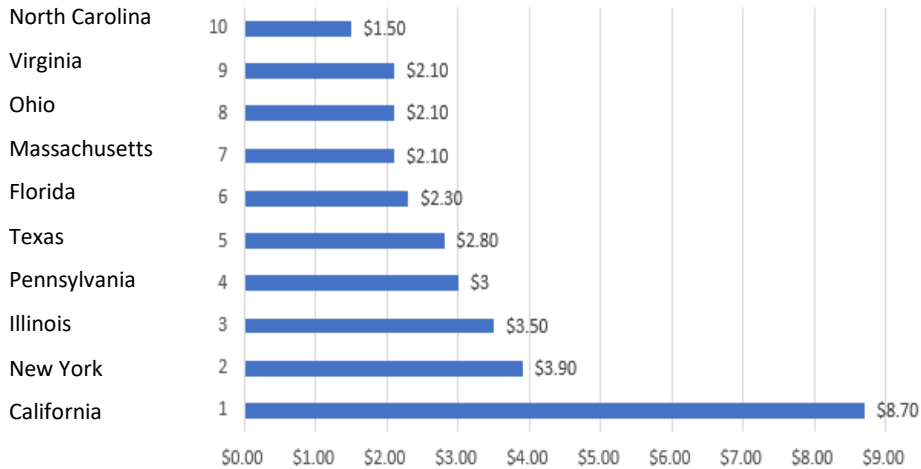


Table 22: Projected State and Local IT Spending (not federal) 2022 - 2028



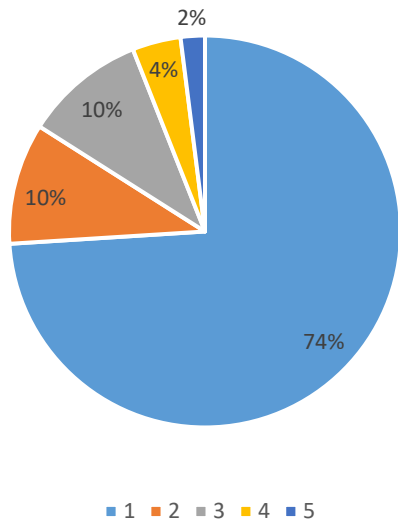
### Top 10 IT Spending by State



*Table 23: Top 10 IT Spending by State.*

The National Association of State Chief Information Officers (NASCIO) is a network of state CIOs from the 50 states and the District of Columbia, and it promotes their vision: “Government in which the public is fully served through business innovation and the optimal use of technology.” (NASCIO, 2024). In their 2022 Annual State CIO survey on the challenges of advancing digital government services, including the CIOs of 49 states, NASCIO reports “Better online experience for citizens” as the top driver to expanding digital services. It also identifies “Empowering frontline employees to collaborate and increase productivity (employee engagement)” as the top five drivers.

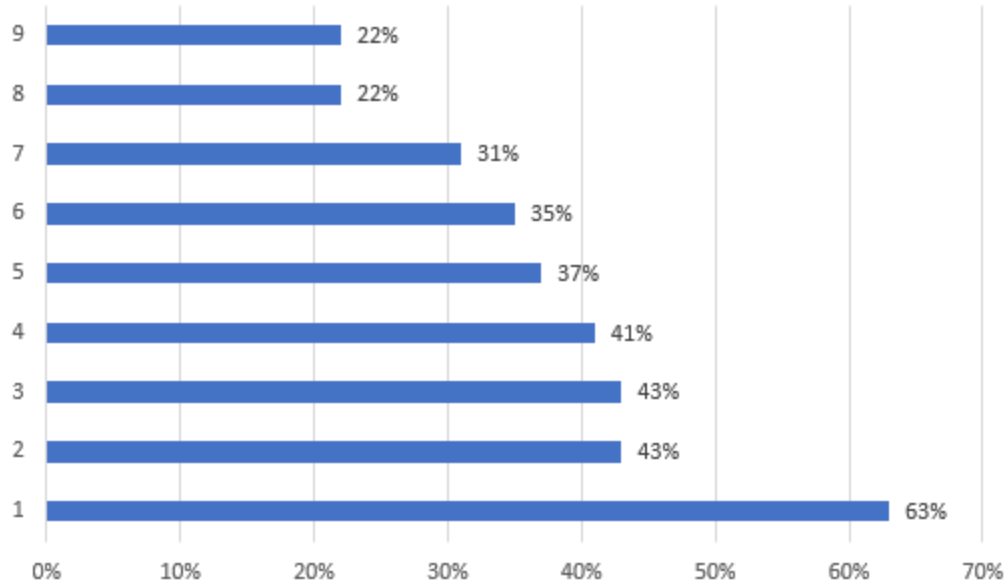
## The Challenges of Advancing Digital Government Services



1. Better online experience for citizens
2. Increased public participation and engagement
3. Optimizing operations and lowering costs
4. Empowering frontline government employees to collaborate and increase productivity (employee engagement)
5. Better Collaboration among state agencies

The same survey identifies the workforce as the major challenge facing to meet the demand for digital services, highlighting the importance of having a strong, engaged, and motivated IT workforce.

### Major challenges to meeting demand for digital services



### Challenges of Advancing Digital Services

Rank	Challenge	Percentage
1	Workforce skills and capability constraints to deliver / implementing digital services	63%
2	Lack of organizational agility / flexibility	43%
3	Lack of adequate funding and budget to balance immediate public needs with future critical investments	43%
4	Data and information quality requirements and digitalization complexity contains	41%
5	Lack of internal willingness to take risks or embrace innovation	37%
6	Inability to envision and operationalize new ways of providing government services	35%
7	Lack of trust in shared digital solution provisioning, coordination, and effective support for digital solution offerings	31%

8	Citizen expectations exceed organizational capabilities	22%
9	Lack of strategy and vision to implement	22%

*Table 24: Challenges of Advancing Digital Services*

To explore what IT executives and upper managers can do and might be overlooking, the survey for this study found that when asked, “What would you like your upper management to do more?” the respondents said:

1. Promote consistent processes,
2. Communicate better,
3. Share long term strategy,
4. Be more available

#### **4.4.1 Better Communication, Share long-term Strategy, Be more available**

The value of promoting good communication is a common subject in leadership training. It has been discussed in a wealth of studies and research, but the lack thereof was also a common topic during the interviews conducted for this study. The importance of communication has been identified for a long time, but it is still an issue. In the 1960s, Edwin Timbers wrote ‘Strengthening Motivation through Communication,’ which is as valid as it was back then. All forms of communication that upper management must consider are communicating to the employees the ‘why,’ recognition, encouraging them to provide feedback, listening, and avoiding overinstructing (empowerment). Dr. Timers concludes: “...Communication is the conveyance of meaning designed to motivate people to take desired action. People act most readily to satisfy their wants. Communication is the principal way the supervisor can help employees satisfy their job-

related wants. Communication, therefore, is the supervisor's most important tool.”

(Timbers, 1966)

Only two of the eleven executives and upper management interviewed for this study said they have regular interactions with two levels or more below them; some said they promote the ‘skip a level’ meetings where they encourage branch managers to sit on meetings held by section managers. Most of them said they would love to do that but do not have time due to their day-to-day responsibilities; the point is that communicating with staff must be part of their everyday tasks. Keeping their whole department engaged and motivated should be their top priority and an essential task of their daily responsibilities. All executives interviewed shared that they spend most of their time managing budgets and attending emergencies.

Sharing the long-term strategy contributes to employee engagement and motivation and can save resources. A supervisor of the application development unit in a mid-size state department shared a story: “I came to a new agency as a supervisor of a development team supporting a mission-critical legacy system. It was an old application running on a mainframe environment that neither the business users nor the maintenance team liked. After asking my direct manager and the business manager about the future of the application, I decided to rearchitect the solution using the same technology, adding the utilization of a code-generation tool; the team was very engaged and motivated. After several months of rearchitecting the application, training some team members on the new tool, and starting the development, we learned that upper management had decided to acquire an off-the-shelf solution and that the team had to assist in the implementation. The worst part wasn't just the waste of time and resources but the impact on the team's

morale; it could all have been avoided if upper management shared the long term strategy with us.”

Sharing the strategy is another example of good communication, trust, and giving team members a sense of belonging; it can also be extended to asking them for input. In an article for Harvard Business Review, Park, Tangirala, and Hussain concluded that: “Everyone benefits when employees feel comfortable speaking up. Whether you’re a team lead seeking product design ideas, a manager sourcing feedback on a new policy, or a top executive looking for input on a major strategic decision, it’s critical to create an environment where people are encouraged to share their ideas and opinions candidly”. (Park, Tangirala, and Hussain, 2022)

#### **4.4.2 The impact of vendor utilization on permanent employees**

The public sector globally spends almost \$10 trillion worth of services and goods per year, or 13% of the global GDP; in the U.S., state governments spend more than \$2 trillion from napkins and pens to complex IT services and equipment. (Pappianou and Spencer, 2019). Federal, state, and local governments purchase IT equipment and services; outsourcing and staff augmentation provided by vendors are standard practices in the public sector. Public agencies hand over entire projects to vendors or can replace or increase the talent by utilizing external consultants.

Staff augmentation and outsourcing provide benefits such as:

1. Increase or decrease costs quickly based on budget adjustments,

2. It can save infrastructure costs,
3. It is easier to replace underperforming consultants than permanent public employees,
4. It provides access to expertise that is needed temporarily,
5. Opens a potential source of hiring talent. (Derbidge, 2020)

Several managers confirmed these benefits during the interviews conducted for this study: “We hired a former employee from Oracle as a senior database administrator (DBA) to support our DBA team; he brought the expertise we couldn’t find trying to fill that vacancy with a permanent position. He not only challenges Oracle itself when they deploy new releases but also trains and mentors junior DBAs.” Another manager shared: “We hired several programmer experts on an old mainframe language to reverse engineer and document a legacy system facing replacement. That effort was temporary, and our current staff could focus on maintaining and operating the mission-critical application.”

These are successful stories, but the interviews discovered another aspect of utilizing vendors in the public sector. A senior business analyst shared his story: “Our application was impacted by state legislation requiring changes. The department received additional funding and hired four consultants at hourly rates between \$160 and \$185. They decided to document the as-is and to-be of the application and other additional documents; since they were new to the organization, we spent countless hours explaining the business and did most of the work for them. At the end of the project, they took the credit and the money for our work. Upper management should have trusted us and at least asked for our input if the consultants were needed.”

A system architect shared his story: “Our department hired these (supposed to be) experts to standardize and improve our continuous development/continuous integration (CD/CI) pipeline; we spent a lot of time explaining our current tools and processes, filling out questionnaires, meeting with their project manager, their lead, and the persons that supposed to do the work. After months of meetings and documents, they finally delivered the proof of concept. Their final product was of such low quality that we decided to do it ourselves from scratch. Upper management does not respect our knowledge and expertise.”

Bringing outside consultants can negatively affect the motivation and engagement of the permanent staff. Team members might feel that upper management considers them not good enough and that their expertise is doubted. If bringing external consultants demands them to learn the business and internal processes instead of helping permanent team members, it only adds more responsibility and work, contributing to their burnout.

#### **4.4.3 The impact of replacing custom-built applications**

Most public departments offer unique services such as issuing passports, identification cards, and driver's licenses, managing voter registrations, collecting taxes, regulating licenses for alcohol and firearms, supporting the judicial system, and many others. To help their mission-critical responsibilities, historically, these public entities developed their custom-built applications in-house, hosting them on-premise.

Following the evolution of the IT industry, many Commercial Off-the-Shelf (COTS) software packages came to market. Starting in the late 70s but becoming more



popular in the mid-90s, German company SAP took the lead in the enterprise resource planning (ERP) market, competing with Oracle NetSuite and Microsoft Dynamics, among others. The Enterprise software market leader is now San Francisco-based Salesforce, competing with many other companies offering COTS packages catered for different industries.

As the utilization of external consultants, these solutions offer many benefits:

1. Lower Initial Cost,
2. Faster Implementation,
3. Well documented,
4. Excellent customer support,
5. Continuous upgrades,
6. Scalability.

There is a wealth of studies identifying the pros and cons of Custom Solutions vs. COTS (Castner and Ferguson, 2000; Agrawal, Agrawal and Taylor, 2016; Robertson, 2017), but most of these and also upper management decided to replace their custom-built solutions with COTS, do not factor the impact on the employees's engagement and motivation.

IT talent takes pride in their work, solving problems, and providing solutions. For the employees who worked developing and maintaining a custom-built application for years, realizing that their work is being replaced by a solution supplied by an external company is a big adjustment. They must also provide expertise to support the package implementation, which will replace the effort they have put in over the years.

New York Times best-seller author and MIT and Duke professor Dan Ariely, in his book “The Upside of Irrationality,” explores the concepts of ‘The Meaning of Labor’ and ‘The IKEA effect.’ (Ariely, 2011)

In the ‘Meaning of Labor’ chapter, Ariely explains an experiment he conducted with students where they were paid to build Legos. The students were separated into two groups; one group would be given the instructions to create a Lego, and after its completion, a new set was assigned (meaningful group); they would pay less for each of the following sets they built for the other group, the Lego set would be taken apart in front of the student after its completion (meaningless group), with the same economic incentive as the other group. The meaningful group performed 68% better than the meaningless group, and 80% of the meaningful group kept building sets even after it was not worth the pay.

Similarly, employees shared their frustration when their work of years was being replaced by an off-the-shelf package or a solution developed by a vendor. “I was part of the initial group that designed and developed my application, which I have maintained for years; last year, upper management decided to replace it with a solution developed by a vendor. They don’t just decide to replace my application without asking for my input, but they expect me to keep maintaining it and, at the same time, assist the vendor with the implementation. I immediately started looking for a new job.”

In the chapter ‘The IKEA effect’, Ariely explores the concept of the overvaluation resulting from labor and sentimental attachment. The name came from

IKEA, the furniture store that commercializes furniture that comes in a box with instructions for the customer to build it. Customers add value to the furniture they ‘created.’ Ariely references the ‘egg theory’; in the 1940s, the cake mixes that required adding water were introduced to the market, but the adoption by housewives was very low. When fresh eggs, milk, and oil were added to the recipe, the cake mixes became more popular; the ‘egg theory’ tries to demonstrate the added value that the housewife identified by making an effort when baking the cake.

Using that existing concept, Ariely and collaborators set an experiment with Harvard students, creating origami that they couldn’t keep but allowed them to bid on them to take them home. The study concluded that creators assigned an additional monetary value for the work done by themselves, extending it to a job completed and customized.

Similarly, a developer shared his story: “Salesforce is replacing my application. I am a software developer; I like designing and coding software. I like to create a product that my clients can use; I am not staying here to change the setting of another company’s solution, pass my business knowledge, and assist with the data conversion. I have an interview scheduled for next week with another state agency.”

## CHAPTER V: DISCUSSION AND CONCLUSION

### **5.1 Discussion of Results**

The Public Sector offers attractive and competitive extrinsic motivators that IT talent considers essential, such as Job Security, Benefits, and Pay. IT Managers in the public sector also have available intrinsic motivators that technical employees consider most important, such as Feelings of Accomplishment, Telework, Career Growth, and Work/Life Balance.

### **5.2 Discussion of Research Question One.**

**What are the extrinsic and intrinsic motivators available for managers in the public sector?**

The Public Sector has very attractive extrinsic motivators, and its managers and supervisors have many powerful intrinsic motivators they can offer. The survey and interviews conducted by this study identified the following as the most important motivators:

**Job Security:** Most job positions for federal, state, and local government are approved by budget; in the private sector, positions are tied to the company's performance. In 2023, Tech companies laid off over a quarter million staff, but the jobs were safe in the public sector.

**Benefits:** The Public Sector not only offers high-quality Health, Dental, and Vision but a full range of other benefits, such as 401(k) plans, life insurance, legal services, long-term care, disability insurance, student forgiveness programs, pre-tax reimbursement accounts and parking, and several leave programs.

**Pay:** Contrary to common belief, the Public Sector offers higher salaries than its Private counterpart, especially in entry-level positions. In the Private Sector, wages increase with larger companies, and some companies provide signing and performance bonuses and stock options.

**Retirement:** Lifetime benefits are available for most public employees; lifetime benefits with the option to be carried out by beneficiaries are expected. Social Security is also available on top of the retirement plans. 401(k) plans are also available.

**Feeling of Accomplishment:** Managers and supervisors can support this powerful intrinsic motivator using a mission-driven approach that communicates the agency's purpose and the value of their contribution. Using the servant-lead management style, they can promote the concepts of Connection, Clarity, Coaching, and Commitment.

**Career Growth:** Proving a clear career path and promoting from within the organization are essential intrinsic motivators. This motivation tool must be used carefully as it may be a demotivator once the promotion is awarded or when promoting the wrong person, which can create resentment among other employees.

Work / Life Balance: Offering flexible schedules and focusing on the quality of work rather than the hours the employees spend in front of their computer support a healthy work/life balance.

Empowerment: Managers must overcome their instinct to take control and trust their employees. Top performers excel at improvisation based on their life experiences and skills. A leader-leader approach produces better results than a leader-follower approach. Implementing quality control processes and negotiating delivery times does not mean micromanagement; they are tools management must use to ensure the work is satisfied.

Telework: The value of telework and its importance as a motivator was a constant in all employees interviewed for this study across age, gender, and career points. Unless the position requires being on site (e.g., Server maintenance), most IT tasks can be accomplished remotely utilizing messaging, screen sharing, and audio and video applications.

Sense of Belonging: Employees achieve top performance and remain at their jobs when treated fairly, can be their authentic selves, identify with their team and organization's mission, and feel they add value.

The public sector offers competitive extrinsic motivators, including higher job security, attractive benefits, and retirement plans. All intrinsic motivators available in the private sector are available in the public sector in addition to public service motivation.

### **5.3 Discussion of Research Question Two.**

#### **Is technical talent motivated differently than non-technical team members?**

Even though several studies find little or no differences when motivating technical and non-technical talent, some studies and articles do find them. Existing literature agrees that Maslow's Hierarchy of Human Needs is the basic understanding of an individual's motivator; this study finds the difference between technical and non-technical talents in the top two pyramid levels.

While Physiological, Safety, and Love / Belonging needs similarly apply to all individuals, the differences between technical and non-technical talent are in the top two needs: Esteem and Self-actualization. Extrinsic motivators and job status are significant for non-technical employees; these motivators are also crucial for technical talent, but autonomy, achievement, problem-solving, and clear direction play a more critical role.

Access to the latest technology: Technical talent loves innovation, work, and learning new trends and stays current with the most advanced technology. They prefer hands-on experience but like to research and increase their skills and knowledge when it is not available.

Let smart people be smart: Engineers like being challenged and utilizing their skills to solve problems, but they demand autonomy to choose the best way to complete the assignment. Managers must focus on leading team members instead of working on the deliverables themselves; understanding the tasks and the final product is essential to

support them, but they must trust their technical pool and give them the freedom they need.

Clear directions and well-established processes: IT talent likes challenges and solves problems but needs an appropriate environment to perform. Mature IT governance increases performance and acts as a motivator, but the impact of the lack of clear directions and well-established processes is a great demotivator.

#### **5.4 Discussion of Research Question Three.**

**What other factors, reasons, or strategies are public managers overlooking when recruiting, motivating, and retaining technical talent?**

The public sector offers very competitive salaries and benefits, and it has access to all the intrinsic motivators the private sector can offer and more. To recruit top talent, public servant managers can use the following strategies:

Recruit talent where the talent is: Besides posting the vacant positions on their own hiring websites, the public sector must advertise on open career websites such as indeed.com, dice.com, glassdoor.com, and linkedin.com. Utilize social media like Instagram and TikTok and participate in hackathons and events where young technical talent hangs out.

Provide job flexibility and accommodate public servants to join academia: Managers in the public sector and technical leads possess years of experience and hands-on knowledge they can share by becoming professors; not just they can teach, but they



can talk about working for the state, advertising on career development in the public sector, and identify a top student who can become part of their teams. IT talent likes to perform their work independently; it's more important that they deliver their work on time with the expected quality than when and how they do it. IT talent performs better when given flexibility.

**Shorten and Simplify the Hiring Process:** The hiring process in the public sector can be slow and bureaucratic, frustrating hiring managers and candidates alike; shortening and simplifying the recruiting process will give it a competitive advantage.

**Interviewing is a two-way conversation:** Hiring managers interview candidates to select the best talent, but candidates also want to know if the hiring agency is the correct environment for them. Bringing the best team members to the process is a way to show the candidates the advantages of working for the hiring team. Technical people want to work in an environment that will support their career growth and help them learn from peers and managers. Treating candidates like customers, respecting and appreciating their time, and keeping them informed of the process will make them want to apply again if they are not hired. Also, put a good word with other job seekers.

**Promoting entrepreneurship:** Technical talents are problem solvers who like recognition and participate in decision-making. Fostering an entrepreneurial environment engages team members and adds value to the agency or department's services.

Invest in Personal Relationships: Happy employees are more engaged and perform better. Supervisors and managers must develop people skills and, while respecting boundaries, establish healthy relationships in their teams.

## **5.5 Discussion of Research Question Four**

### **What factors is upper management overlooking?**

Promoting consistent processes, communicating better, sharing long-term strategies, and being more available were the topics most suggested by the survey conducted for this study.

Better communication, sharing long-term strategy: Good communication and being more available are common subjects taught in regular leadership classes and literature. However, they are still an issue in today's workplaces. Budgeting, planning, staffing, meeting legislative mandates, and all the other responsibilities of upper management are essential; regular and open interaction with staff is critical to keeping IT talent motivated and engaged.

Vendor Utilization: Utilizing vendors and external consultants can provide many benefits to IT departments. Still, it is equally important to consider the impact on permanent employees' motivation and engagement. Bringing experts and augmenting staff for specific efforts can support permanent staff to perform their day-to-day work. Still, if public servants need to spend time teaching the vendors about the business or even if they end up doing the work themselves, it creates resentment and demotivation.

The Meaning of Labor and the IKEA effect: When deciding to replace the work that IT talent has been doing and for which they feel proud and accomplished with off-the-shelf packages or solutions developed by the vendor, it is essential to consider the impact of the permanent employees who created it and maintained it for years. IT professionals like solving problems and providing solutions; for them, it is essential to have a sense of belonging and recognition; bringing an off-the-shelf solution or an application developed by a third-party vendor may deprive them of those feelings, affecting their motivation.

Communication is a common subject taught in most management classes. Still, it was also one of the topics that most of the survey participants for this study and during the interviews wished was done better in their organizations. Interacting with individual contributors, sharing the long-term strategy, and being more involved and available for their entire IT department, not just their immediate team, are essential factors overlooked by upper management.

## **5.6 Conclusion**

This study aimed to research the best tools available for IT managers in the public sector to recruit, retain, and motivate their IT talent to achieve high-performance teams.

Surveying and interviewing hundreds of IT professionals in the public sector, this study identified the top factors and reasons for job seekers interested in becoming public servants and how to motivate them to perform at their maximum level throughout their careers. This study also concluded that technical and non-technical talent are motivated

similarly and identified the importance of recognizing their personal needs and understanding what makes them tick; it also discussed strategies and factors overlooked by managers and upper management to keep their IT talent engaged and performing efficiently.

Candidates primarily want to cover their basic job security needs, appropriate pay, and benefits. These extrinsic motivators are not just available in the public sector but are usually better than in the private sector. While the IT industry in the private sector underwent massive layoffs, losing more than two hundred and fifty thousand (250,000) positions after the pandemic, the public sector did not announce any layoffs, proving that the public sector offers job security that the private sector cannot match.

Even though there is a common belief that the private sector offers better salaries than the public counterpart, this study found that wages in the public sector are higher, especially in the California government. The public sector does not offer signing bonuses and bonuses based on the company's performance like some companies in the private sector, but overall, the public sector offers better pay. The public sector also offers attractive benefits, including retirement plans, medical, dental, vision, vacations, etc.

Recognition, the feeling of accomplishment, career growth, appropriate work / life balance, flexibility, empowerment, sense of belonging, camaraderie, and working with the latest technology are critical motivators supporting high-performance technical teams; all these motivators are also available in the public sector.

A critical motivator and factor in retaining IT talent is Telework. This study consistently found the importance of this job perk. IT professionals are problem solvers who like to work independently; they enjoy challenges but do not like being told how to solve them. They need an appropriate environment, clear directions, and well-established processes; telework supports this required positive environment.

Recruiting talent where the talent spends time online and offline, such as social media, hackathons, and college campuses, is a positive way to attract suitable candidates. Shortening and simplifying the hiring and onboarding processes, treating candidates like clients, and considering interviews as two-way communication would make the public sector more competitive when attracting new talent.

Promoting entrepreneurship, investing in personal relationships, getting to know employees personally, having good communication, being available, sharing long-term strategies, and engaging and motivating employees are essential to retaining and motivating IT talent to achieve high performance. The Servant Leader management style supports these intrinsic motivators; the lack of these motivators and having bad direct managers promotes the opposite.

IT professionals are motivated when they work to support the organization's mission, and they consider extra value to the products they develop and maintain. This motivation is impacted when external consultants are hired, and at the same time, they are expected to assist them and often complete their work. Similarly, replacing their responsibilities with off-the-shelf solutions and packages developed by external companies is a great demotivator.

In conclusion:

What are the extrinsic and intrinsic motivators available for managers in the public sector?

All the extrinsic motivators available for managers in the private sector, except signing and performance bonuses or stock options, are available for managers in the public sector. Public service managers can offer the same or better pay, benefits, vacations, and other leave types. The private sector does not provide the same level of job security as the public sector. Most public agencies offer excellent retirement plans, and only a few private companies offer any other kind of retirement except matching 401(k) plans.

This study's survey results and interviews show that the top most essential motivators are Job Security, Pay, Retirement, and Benefits. Public sector managers don't just have the same extrinsic motivators available as their private counterparts but can offer the most competitive options. The public sector can offer all the intrinsic motivators available for the private sector in addition to public service motivation.

Is technical talent motivated differently than non-technical talent?

This study concludes that despite no significant differences when motivating technical and non-technical talent, technical employees value career growth and contributing to the organization's mission and participation in the decision-making process.

IT talent are problem solvers and like working independently; after receiving clear directions and using well-established processes, they like taking ownership of the assignment and deciding the best approach; public sector managers must offer the appropriate environment for their talent to thrive.

What other factors, reasons, or strategies are public managers overlooking when recruiting, motivating, and retaining technical talent?

The public sector offers excellent job opportunities, career growth, and competitive compensation and benefits. To attract talent, the public sector must recruit the talent where they spend time online and offline, such as on social media, college campuses, hackathons, and meetups, besides posting their job openings on their own career websites.

Interviewing a candidate is a two-way conversation; the recruiter wants to hire the best candidate, and the candidate wants to know if the organization, the team, and its manager are a good fit for them. Shortening the hiring process and speeding up onboarding to avoid missing great candidates.

Promoting entrepreneurship, mature IT governance, excellent communication among technical teams, appropriate access to training, and a clear path for career growth are all factors that promote an environment for technical teams to thrive.

The importance of the direct supervisor is sometimes overlooked; the organization might provide an excellent environment, processes, and strategies, but a lousy supervisor

has a much higher impact on the overall engagement and satisfaction of the team. Investing in personal relationships, sincere recognition, actively listening, and supporting the team in all their needs are traits of servant leaders, a managing style that technical talent values.

What factors is upper management overlooking?

Billions of dollars are allocated annually to IT budgets; executives develop strategies to obtain the best return on their investment in providing digital services. Having a top-performance IT workforce is critical to achieve this goal.

Staff augmentation utilizing external consultants and replacing custom-built applications with off-the-shelf solutions or solutions developed by third parties are common strategies. Still, the negative impact on the permanent staff is usually not considered when making these decisions. IT employees are problem solvers who take pride in their work, having their efforts, sometimes for years, not just replaced but also expected to support the implementation, negatively affecting their morale and desire to engage and collaborate.

IT talent likes being part of the decision process and providing input. Still, executives and upper management often overlook the importance of being available and establishing relationships beyond their direct reports. Sharing the long-term strategy contributes to employee engagement and motivation and can save resources.



This study aimed to answer these questions and help IT managers in the public sector recruit, retain, and motivate IT talent to achieve high-performance teams.

## CHAPTER VI:

### SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

#### **6.1 Summary**

Public entities rely heavily on technology to carry out their missions. Highly skilled employees are needed to maintain the IT infrastructure, develop applications, and maintain and secure their network and the flow of information. As the cost of hardware decreases, the cost of IT talent increases dramatically. The public sector competes with the private sector for these resources. This study explores the tools available for IT managers in the public sector to attract, retain, and motivate employees to achieve high-performance teams.

Utilizing a survey and interviews with IT employees of several California State departments, this study explores the most important reasons for public servants to join the public sector and the factors that motivate or demotivate them to stay at their jobs and perform at their top.

The public sector offers very competitive extrinsic motivators such as job security, pay, retirement, and benefits, and public servant IT managers can utilize the intrinsic motivators appealing to their team members such as recognition for their contributions, career growth, participation in the decision process, telework, and mature IT governance.

This study recognizes the critical role of the direct supervisor on the level of engagement and motivation of their team. The servant leader style supports the

appropriate environment for IT talent to thrive; technical professionals like solving problems and prefer the independence to do it their way. They like clear directions and well-established processes promoting a sense of belonging with good communication and personal relationships and supporting their career development.

This study's survey and interviews identified the impact, often overlooked by upper management, of hiring vendors, implementing off-the-shelf solutions, and not sharing the long term strategy.

## **6.2 Implications and Explicit Value**

Information technology is essential for the public sector to carry out its missions. The low unemployment rate and the current market conditions even harden the challenge that the public service faces in recruiting and retaining the workforce needed to support this technology. Research on the best strategies and tools available for IT managers and Human Resources in the public sector carries a significant explicit value. This study does not just add to the existing extensive literature on the subject, but the practicality of its findings provides incredible value.

Most of the executives and managers who participated in the interviews for the study provided high praise after reading the draft of the findings, and the author received several invitations to present to IT upper managers of three state departments and the HR unit of another agency.

Executives and upper management found value in the findings of this study, such as the impact of vendor utilization and the implementation of off-the-shelf solutions on the level of engagement of permanent employees, the need for improvement in the communication and sharing the long-term strategy, the benefits of establishing personal relationships, the importance of the direct supervisor, the criticality of telework and reminded them of some of the topics they already knew but need attention such as shortening the hiring and onboarding process and to improve the maturity of their IT governance.

Local and state governments (not including the federal government) will allocate over 140 billion dollars of their budget to information technology in 2024, increasing to nearly \$200 billion by the decade's end. Implementing this study's findings can improve their IT teams' performance and consequently provide enormous economic benefits in savings. High-performance teams can shorten the delivery of solutions while increasing quality, reducing IT costs, and allowing the public sector to offer more and better digital services, providing savings to their departments and the citizens they serve.

### **6.3 Limitations and Recommendations for Future Research**

This study was focused on the United States and specifically on California. With over 38 million residents, California is the nation's most populated state, and its \$3.9 trillion gross state product makes it the fifth largest economy in the world, with the most significant number of jobs in the public sector. Regardless of the size and importance of California, the homogeneity of the respondents in this study's survey and interviews presents a significant limitation.

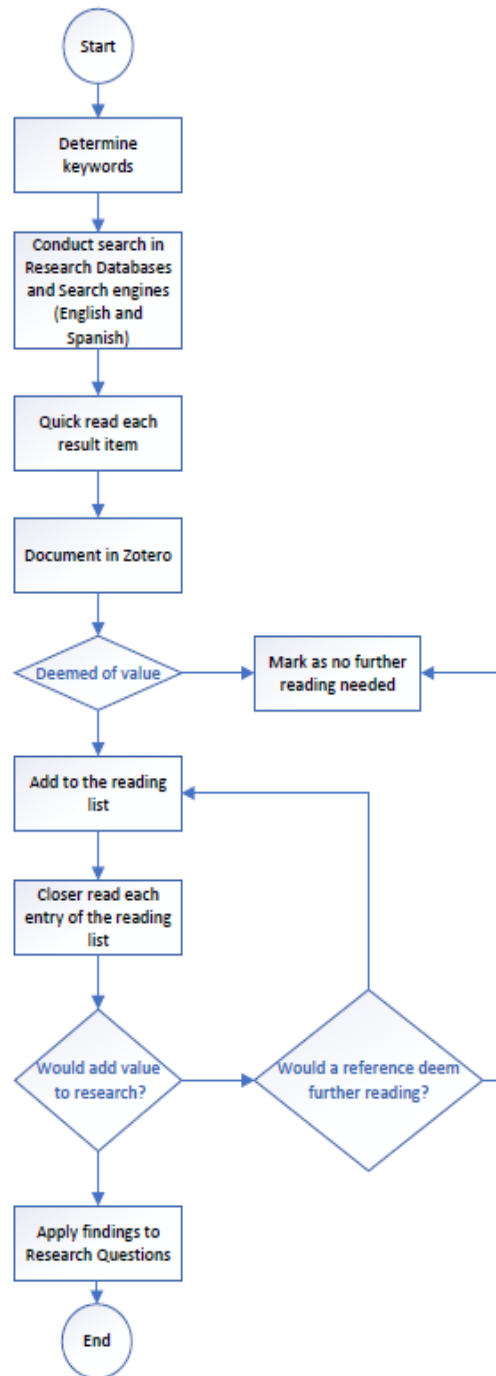
Some of the findings are transferable worldwide, but considering that some intrinsic and extrinsic motivators might vary depending on the culture and background of the employees and the local market conditions highlights the limitations of this study.

This study provides several findings that can be turned into practice, but further research is needed for some of the conclusions that are not new but still occurring in the workplace. The following questions can be explored for opportunities to turn research into practice and provide additional explicit value:

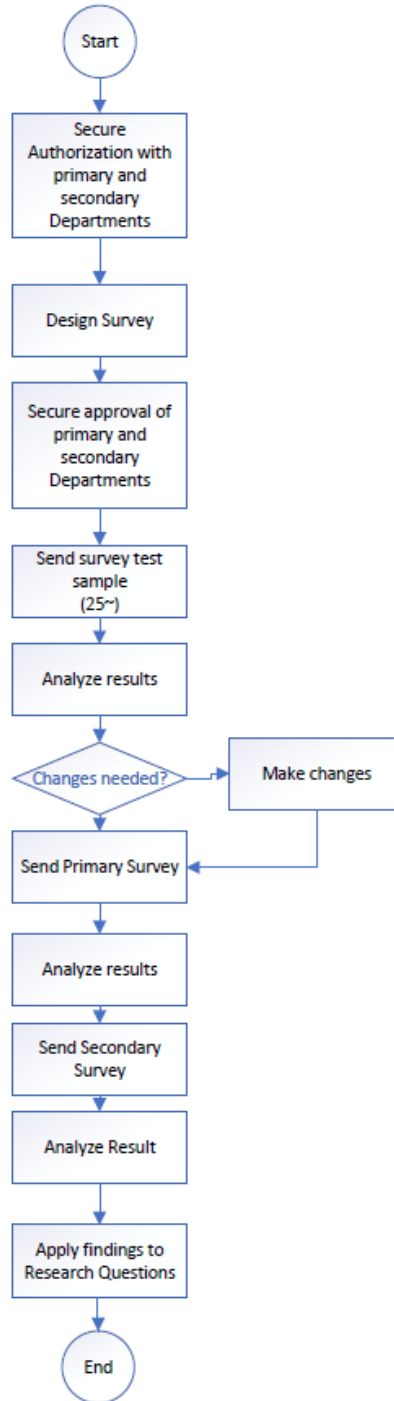
1. Since working in the public sector provides excellent benefits and opportunities, what can the sector do to improve its promotion?
2. A public agency can be a great place to work, with excellent benefits, career growth opportunities, and all the factors that employees find essential, but a lousy direct supervisor can have a more significant impact on their employee's engagement and motivation; what are the reasons that immediate many direct supervisors are not qualified?
3. The servant leader style promotes a positive work environment; this style requires a certain level of empathy that many managers lack; how can this skill be included in the manager's training curriculum?

## APPENDIX A

### LITERARY REVIEW STRATEGY



APPENDIX B  
SURVEY STRATEGY



APPENDIX C  
SURVEY COVER LETTER

Recruiting, Retaining, and Motivating IT Talent in the Private Sector

Dear IT colleague,

My name is Rafael Debia. I am an IT manager for the State of California and have been in the IT industry for over 25 years. I am a public servant but have been a consultant in different private, state, and federal government industries for many years.

I am a doctoral candidate, and my thesis is titled “Hiring, Motivating, And Retaining Technical Talent in The Public Sector”. The goal of my dissertation is to identify differences between IT talent in the public and private sectors.

I appreciate your time and help in completing this survey. Please don’t hesitate to contact me with questions. If you would like to give me a few more minutes of your time to discuss this topic, please get in touch with me to arrange it.

I promise complete anonymity. The only reason for the demographic questions is to analyze if age, gender, race, or stage in our career affects our forms of motivation.

Big thank you again,

Rafael Debia  
Rafael@Debia.com  
916.799.0302



APPENDIX D  
SURVEY CONSENT

Consent:

You consent to use your answers in the study by completing or partially completing this survey. Your voluntary participation is completely anonymous; no information you share can be traced back to you. You can participate if you are 18 or older and are a current or retired public servant.

## APPENDIX E

# SURVEY

Link to the survey: <https://forms.office.com/r/QZBGyVpXWY>

1. Your age
  - < 25
  - 25 to < 35
  - 35 to < 45
  - 45 to < 55
  - 55+
2. Your gender
  - Woman
  - Man
  - Non-binary
  - Prefer not to say
3. Your Race. Select all that apply
  - Black or African American
  - American Indian or Alaska Native
  - Hispanic or Latino
  - White
  - Indian
  - Chinese
  - Other Asian
  - Pacific Islander
  - Other
4. Your years of experience in the IT industry
  - < 2
  - to < 5
  - 5 to < 15
  - 15 to < 25
  - 25+
5. Your years to retirement
  - < 2
  - to < 5
  - 5 to < 15
  - 15 to < 25
  - 25+
6. Do you have direct reports?
  - I don't have direct reports.
  - Yes, I have one level of direct reports.
  - Yes, I have direct reports who have direct reports.

7. Why did you decide to pursue a career in the public sector?  
 For each reason, please select the importance. \*

	Extremely Important	Very Important	Important	Irrelevant, N/A
Job Security				
Competitive Pay				
Benefits				
Retirement				
Telework				
Close to home				
Public Service				
Career growth				
Social Impact				
I couldn't get a job In the private sector				
First job available				
Friends and Family recommendation				

8. What were the reasons you left your last job and/or took your current one, or the reason you are looking for a new career?  
 For each reason, please select the importance. \*

	Extremely Important	Very Important	Important	Irrelevant, N/A
Job Security				
Compensation				
Benefits				
Retirement				
No Telework				
Distance from home				
No Public Service				
No Career growth				
No Social Impact				
Promotion				
No sense of belonging				
I didn't like my teammates				
I didn't want my supervisor/manager				
I didn't like my job				
Work/Life Balance				
No recognition				
Laid off				

9. Why do you stay at your current job?  
 For each reason, please select the importance. \*

	Extremely Important	Very Important	Important	Irrelevant, N/A
Job Security				
Compensation				
Benefits				
Retirement				
Telework				
Close to home				
Career growth				
Social Impact				
Can't get a job in the private sector				
Can't get a job in other Public agency				
Sense of belonging				
Like my teammates				
Like my supervisor/manager				
Like my job				

Work/Life Balance  
Change can be challenging  
Option to go to the office

10. How do these factors motivate you to perform better?  
For each reason, please select the importance. \*

Extremely A lot Some Irrelevant, N/A

Compensation  
Compensated overtime  
Feeling of accomplishment  
Management recognition  
Peer recognition  
Sense of belonging  
Telework  
Team camaraderie  
Public service  
Career growth  
Social Impact  
Access to training  
Peer pressure  
Supervisor pressure  
Fear of losing my job  
Additional time-off  
Appropriate work/life balance  
Work on alternative projects  
Work with the latest technology  
A nice supervisor

11. How do these factors demotivate you when doing your job?

For each reason, please select the importance. \*

	Extremely A lot	Some	Irrelevant, N/A
Low Compensation			
No recognition			
Public recognition (public attention)			
Going to the office			
Sense of belonging			
Telework			
No empowerment			
No Career growth			
No Social Impact			
No Access to training			
Peer pressure			
Supervisor pressure			
Fear of losing my job			
Mandatory time-off			
Inappropriate work/life balance			
Work on alternative projects			
Work with the latest technology			
A bad supervisor			
No overtime			

12. What would you like your manager to do more?

For each reason, please select the importance. \*

	Extremely Important	Very Important	Important	Irrelevant, N/A
Recognize my contributions				
Allow me more compensated overtime				
Listen more/better				
Allow me to Telework				
Communicate more/better				
Please give me more growth opportunities				
Promote more social interaction				
Allow me to work on side projects				
Empower me				
Put more pressure				
Give me clear directions				
Show me more personal interest				
Allow me to work with the latest technology				
Provide more structured processes				
Allow me to access to upper management				

13. What does your manager do that you dislike?

For each reason, please select the importance. \*

	Extremely Important	Very Important	Important	Irrelevant, N/A
Recognize me in public				
They asked me to work overtime				
Promote social interaction				
Ask me to work on side projects				
Micromanage me				
Put pressure				
Show personal interest				
Show favorites with other team members				

14. What would you like your upper manager to do more?  
For each reason, please select the importance. \*

	Extremely Important	Very Important	Important	Irrelevant, N/A
Recognize me/my team.				
Communicate better				
Be more available				
Share long-term strategy				
Promote Consistent processes				
Ask for my input				
Show favoritism with other teams				

15. I really appreciate your time and participation. Please use the box below to add anything you want (please keep it anonymous). Thank you again,

Rafael Debia  
Rafael@debia.com  
916.799.0302

APPENDIX F  
INTERVIEW GUIDE

The interviews were conducted in an informal setting, starting with the questions below and adapting as the conversation progressed. The goal of the discussion was to clarify the questions asked in the survey and to identify facts missed by the study.

1. Why did you decide to pursue a career in the public sector?
2. How motivated do you feel at work?
3. What would you like your organization to do differently?
4. What would you like your organization to offer?
5. What would you like your manager/supervisor to do differently?
6. What would you like your executive team to do differently?
7. Who was the best manager in your career, and why?
8. Do you think the private sector offers better pay than the public sector?

The following questions were for supervisors/managers:

1. What do you think is the best job motivator?
2. Have you established a personal relationship with your direct reports?

The following questions were for executives:

1. How do you interact with employees more than one level below you?
2. How often?

## REFERENCES

Agrawal, Vijay K, Agrawal, Vipin K and Taylor, A.R. (2016) 'Trends in commercial-off-the-shelf vs. proprietary applications', *Journal of International Technology and Information Management*, 25(4), p. 2.

Aitken, K. (2018) 'Governance in the digital age,' in. Public Policy Forum.

Alderfer, C.P. (1972) *Existence, relatedness, and growth: human needs in organizational settings*. New York: Free Pr. [u.a.].

Amy-Vogt, B. (2022) *Digital transformation makes DMV interaction streamlined for California residents - SiliconANGLE*. Available at: <https://siliconangle.com/2022/10/03/digital-transformation-makes-dmv-interaction-streamlined-california-residents-uipathforward/> (Accessed: 14 February 2024).

Ariely, D. (2011) *The upside of irrationality: the unexpected benefits of defying logic at work and at home*. First Harper Perennial edition. New York London Toronto Sydney New Delhi Auckland: Harper Perennial.

Azmar, N.A., Romle, A.R. and Ismail, S. (2015) 'Framing a new movement for training program and work motivation in the public service context', *International Journal of Administration and Governance*, 1(4), pp. 20–25.

Bae, K.B., Lee, D. and Sohn, H. (2019) 'How to Increase Participation in Telework Programs in U.S. Federal Agencies: Examining the Effects of Being a Female Supervisor, Supportive Leadership, and Diversity Management.', *Public Personnel Management*, 48(4), pp. 565–583. Available at: <https://doi.org/10.1177/0091026019832920>.

Baldwin, J.N. (1987) 'Public versus Private: Not That Different, Not That Consequential', *Public Personnel Management*, 16(2), pp. 181–193. Available at: <https://doi.org/10.1177/009102608701600209>.

Bartol, K.M. and Martin, D.C. (1982) 'Managing Information Systems Personnel: A Review of the Literature and Managerial Implications.', *MIS Quarterly*, 6(4), pp. 49–70. Available at: <https://doi.org/10.2307/248991>.

Boehm, J.K. and Lyubomirsky, S. (2008) 'Does Happiness Promote Career Success?', *Journal of Career Assessment*, 16(1), pp. 101–116. Available at: <https://doi.org/10.1177/1069072707308140>.

Bolesnikov, M. (2024) 'Entrepreneurship for Corporate Leadership'. Zoom, 14 February.



- Buelens, M. and Van den Broeck, H. (2007) 'An Analysis of Differences in Work Motivation between Public and Private Sector Organizations.', *Public Administration Review*, 67(1), pp. 65–74.
- Cappelli, P. (2008) 'Talent management for the twenty-first century,' *Harvard Business Review*, 86(3), p. 74.
- Castells, M. (2010) *The rise of the network society*. 2nd ed., with a new pref. Chichester, West Sussex ; Malden, MA: Wiley-Blackwell (The information age : economy, society, and culture, v. 1).
- Castner, G. and Ferguson, C. (2000) 'The effect of transaction costs on the decision to replace 'off-the-shelf' software: the role of software diffusion and infusion', *Information Systems Journal*, 10(1), pp. 65–83.
- Cukier, W. (2019) 'Developing Canada's digital-ready public service', in. Public Policy Forum.
- Davies, B. and Davies, B.J. (2010) 'Talent management in academies,' *International Journal of Educational Management*, 24(5), pp. 418–426.
- Degirmen, G.C., Vural, Z. beril A. and Ozbukerci, İ. (2016) 'Information society and digital challenges', *İnönü Üniversitesi İletişim Fakültesi Elektronik Dergisi (İNİF E-Dergi)*, 1(2), pp. 102–118.
- Demircioglu, M.A. and Chowdhury, F. (2021) 'Entrepreneurship in public organizations: the role of leadership behavior.', *Small Business Economics*, 57(3), pp. 1107–1123. Available at: <https://doi.org/10.1007/s11187-020-00328-w>.
- Derbidge, A. (2020) *Staff Augmentation For Government: Part One*. Available at: <https://www.forbes.com/sites/forbesbusinessdevelopmentcouncil/2020/10/15/staff-augmentation-for-government-part-one/?sh=d5183745a286> (Accessed: 20 February 2024).
- Dhanabhakym, M. and Kokilambal, K. (2014) 'A study on existing talent management practice and its benefits across industries,' *International Journal of Research in Business Management*, 2(7), pp. 23–36.
- El Ammar, C. (2021) 'Talent management philosophy in the public sector: A key for managing conflicts and contradictions', *Икономически изследвания*, (8), pp. 69–92.
- Ferratt, T.W. and Short, L.E. (1986) 'Are Information Systems People Different: An Investigation of Motivational Differences.', *MIS Quarterly*, 10(4), pp. 377–387. Available at: <https://doi.org/10.2307/249193>.

George, B. and Sims, P. (2007) *True north: discover your authentic leadership*. 1st. ed. San Francisco, CA: Jossey-Bass (The Warren Bennis signature series).

Glen, C. (2006) 'Key skills retention and motivation: the war for talent still rages and retention is the high ground,' *Industrial and commercial training*, 38(1), pp. 37–45.

Govtech (2022) *2021 State and Local Annual IT Spending*. Available at: <https://www.govtech.com/navigator/data/2019-state-and-local-annual-it-spending.html> (Accessed: 5 March 2024).

Greathouse, J. (2019) *Business Wisdom From The Master CEO: Lee Iacocca*. Available at: <https://www.forbes.com/sites/johngreathouse/2019/07/06/business-wisdom-from-the-master-ceo-lee-iacocca/?sh=30272cd78b9f> (Accessed: 7 February 2024).

Groscurth, C. (2014) *Why Your Company Must Be Mission-Driven*. Available at: <https://www.gallup.com/workplace/236537/why-company-mission-driven.aspx> (Accessed: 15 January 2024).

Hanna, N. (2018) 'A role for the state in the digital age', *Journal of Innovation and Entrepreneurship*, 7(1), pp. 1–16.

Hans, K. (2023) 'Driving Business Success Through Servant Leadership: Create a positive and collaborative work environment through servant leadership.', *Leadership Excellence*, 40(6), pp. 20–22.

Harter, J. (2022) *U.S. Employee Engagement Drops for First Year in a Decade*, *Gallup.com*. Available at: <https://www.gallup.com/workplace/388481/employee-engagement-drops-first-year-decade.aspx>.

Herzberg, F., Mausner, B. and Snyderman, B.B. (1959) *The motivation to work*. 2. ed. New York: Wiley.

Hicks, R. (2021) 'THE DISEASE OF MICROMANAGEMENT.', *Physician Leadership Journal*, 8(3), pp. 79–81.

Hur, H. (2022) 'Job security matters: A systematic review and meta-analysis of the relationship between job security and work attitudes', *Journal of Management & Organization*, 28(5), pp. 925–955. Available at: <https://doi.org/10.1017/jmo.2019.3>.

Indeed (2024) *10 Recruitment Strategies for Hiring Great Employees*. Available at: [https://www.indeed.com/hire/c/info/10-recruiting-strategies-for-hiring-great-employees?gad\\_source=1&gclid=Cj0KCQiAoKeuBhCoARIsAB4WxtcdO29BK44-09kGpF6q2iS1\\_oDnjPr9vDxl79CHyOWTfRxE5vHAHGAAu0TEALw\\_wcB&aceid=&gclsrc=aw.ds](https://www.indeed.com/hire/c/info/10-recruiting-strategies-for-hiring-great-employees?gad_source=1&gclid=Cj0KCQiAoKeuBhCoARIsAB4WxtcdO29BK44-09kGpF6q2iS1_oDnjPr9vDxl79CHyOWTfRxE5vHAHGAAu0TEALw_wcB&aceid=&gclsrc=aw.ds) (Accessed: 13 February 2024).

Institute, C.D.T. (2017) 'The digital talent gap: are companies doing enough?' Capgemini and LinkedIn, Paris, France.

Katz, R. (2005) 'MOTIVATING TECHNICAL PROFESSIONALS TODAY.', *Research Technology Management*, 48(6), pp. 19–27. Available at: <https://doi.org/10.1080/08956308.2005.11657344>.

King, M., Marshall, A. and Zaharchuk, D. (2016) 'Facing the storm: Navigating the global skills crisis,' *IBM Institute for Business Value. December* [Preprint].

Lausev, J. (2014) 'WHAT HAS 20 YEARS OF PUBLIC-PRIVATE PAY GAP LITERATURE TOLD US?', *Journal of Economic Surveys*, 28(3), pp. 516–550. Available at: <https://doi.org/10.1111/joes.12039>.

Lewis, G.B., Pathak, R. and Galloway, C.S. (2018) 'Trends in Public–Private Pay Parity in State and Local Governments.', *Review of Public Personnel Administration*, 38(3), pp. 303–331. Available at: <https://doi.org/10.1177/0734371X16671370>.

Liss-Levinson, R. and Young, G. (2023) *State and Local Government Employees: Morale, Public Service Motivation, Financial Concerns and Retention | MissionSquare Research Institute*. Available at: <https://research.missionsq.org/posts/workforce/state-and-local-government-employees-morale-public-service-motivation-financial-concerns-and-retention-2> (Accessed: 6 March 2024).

Lyon, J. (2010) *Talent Management in 2010: Foundations for Growth*. Association of Chartered Certified Accountants.

Marquet, L.D. (2012) *Turn the ship around! a true story of turning followers into leaders*. New York: Portfolio.

Martin, D. (2023) 'Micromanagement or empowerment? Why not try both?', *American Banker*, p. N.PAG-N.PAG.

Maslow, A.H. (2013) *A theory of human motivation*. Mansfield Center, CT: Martino Publishing.

McLeod, S. (2023) *Herzberg's Two-Factor Theory Of Motivation-Hygiene*. Available at: <https://www.simplypsychology.org/herzbergs-two-factor-theory.html> (Accessed: 9 February 2024).

Mergel, I., Gong, Y. and Bertot, J. (2018) 'Agile government: Systematic literature review and future research.' *Government Information Quarterly*, 35(2), pp. 291–298. Available at: <https://doi.org/10.1016/j.giq.2018.04.003>.

Miller, M.A. (1996) 'The public-private pay debate: What do the data show?', *Monthly Labor Review*, 119(5), p. 18.

Mura, A. (2018) 'HR and Talent Management in the Digital Era: Strategy and Challenges.'

NASCIO (2024) *Mission & Strategic Direction - NASCIO*. Available at: <https://www.nascio.org/about/mission-strategic-direction/> (Accessed: 5 March 2024).

Noonan, M.C. and Glass, J.L. (2012) 'The hard truth about telecommuting.', *Monthly Labor Review*, 135(6), pp. 38–45.

Onday, O. (2016) 'Creating employee engagement through talent management: 4 links between talent management and employee engagement', *International Journal of Academic Values Studies*, (4), pp. 90–103.

Ostrowsi, S. (2023) *CompTIA Tech Jobs Report / Monthly Jobs Report Analysis, CompTIA Tech Jobs Report*. Available at: <https://www.comptia.org/content/tech-jobs-report> (Accessed: 13 November 2023).

Pappianou, G. and Spencer, A. (2019) *A path to successful state procurement transformation / McKinsey*. Available at: <https://www.mckinsey.com/industries/public-sector/our-insights/a-path-to-successful-state-procurement-transformation> (Accessed: 19 February 2024).

Park, H., Tangirala, S. and Hussain, I. (2022) *The Unintended Consequences of Asking for Employee Input*. Available at: <https://hbr.org/2022/02/the-unintended-consequences-of-asking-for-employee-input> (Accessed: 19 February 2024).

Perry, J.L. and Wise, L.R. (1990) 'The Motivational Bases of Public Service', *Public Administration Review*, 50(3), p. 367. Available at: <https://doi.org/10.2307/976618>.

Peterson, T. (2022) *Motor Vehicle Departments Transform Tech for Document Management / StateTech Magazine*. Available at: <https://statetechmagazine.com/article/2022/08/motor-vehicle-departments-transform-tech-document-management> (Accessed: 14 February 2024).

Petroni, A. and Colacino, P. (2008) 'MOTIVATION STRATEGIES FOR KNOWLEDGE WORKERS: EVIDENCES AND CHALLENGES.', *Journal of Technology Management & Innovation*, 3(3), pp. 21–32. Available at: <https://doi.org/10.4067/S0718-27242008000100003>.

Pink, D.H. (2012) *Drive: the surprising truth about what motivates us*. Reprint, paperback ed. New York, N.Y: Riverhead Books.

Rana, G., Goel, A.K. and Rastogi, R. (2013) 'Talent management: a paradigm shift in Indian public sector,' *Strategic HR Review*, 12(4), pp. 197–202.

Ratten, V. (2014) 'Indian and US consumer purchase intentions of cloud computing services,' *Journal of Indian Business Research*, 6(2), pp. 170–188.

Reder, W. (2006) 'The technical talent challenge,' in *2006 IEEE Power Engineering Society General Meeting*. IEEE, pp. 1-pp.

Robertson, H. (2017) 'Contemplating New Software: A Research Study on Custom Solutions versus Commercial off the Shelf Software'.

Roche, P. and Srivastava, S. (2021) *Unleashing developers' full talents: An interview with Twilio's CEO | McKinsey*. Available at: <https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/unleashing-developers-full-talents-an-interview-with-twilios-ceo> (Accessed: 11 February 2024).

Royal, M. and Agnew, T. (2018) *The Enemy of Engagement Put an End to Workplace Frustration--and Get the Most from Your Employees*. Nashville: AMACOM.

Sadri, G. and Bowen, R.C. (2011) 'Meeting EMPLOYEE requirements: Maslow's hierarchy of needs is still a reliable guide to motivating staff.', *Industrial Engineer*, October, pp. 44–48.

Saraswathi, S. (2011) 'A study on factors that motivate IT and non-IT sector employees: A comparison', *Chief Patron Chief Patron* [Preprint].

Saunders, M.N.K., Lewis, P. and Thornhill, A. (2012) *Research methods for business students*. 6th ed. Harlow, England ; New York: Pearson.

Schwantes, M. (2017) *Steve Jobs Once Gave Some Brilliant Management Advice on Hiring Top People. Here It Is in 2 Sentences | Inc.com*. Available at: <https://www.inc.com/marcel-schwantes/this-classic-quote-from-steve-jobs-about-hiring-employees-describes-what-great-leadership-looks-like.html> (Accessed: 6 February 2024).

Schwartz, J., Denny, B. and Mallon, D. (2020) *Belonging*. Available at: <https://www2.deloitte.com/us/en/insights/focus/human-capital-trends/2020/creating-a-culture-of-belonging.html/#endnote-sup-2> (Accessed: 24 January 2024).

Sebastian, S. (2022) *14 Ways To Build Manager-Employee Relationships Based On Mutual Trust*. Available at: <https://www.forbes.com/sites/forbescoachescouncil/2022/04/20/14-ways-to-build-manager-employee-relationships-based-on-mutual-trust/?sh=4d70babb7a6f> (Accessed: 17 February 2024).

- Seppala, E. and McNichols, N. (2022) *The Power of Healthy Relationships at Work*. Available at: <https://hbr.org/2022/06/the-power-of-healthy-relationships-at-work> (Accessed: 15 February 2024).
- Sharon, S.D. (2004) 'Training the IT-Savvy Public Manager: Priorities and Strategies for Public Management Education,' *Journal of Public Affairs Education*, 10(1), pp. 5–17. Available at: <https://doi.org/10.1080/15236803.2004.12001342>.
- Smith, M. (2023) *Over 100,000 workers were laid off from tech jobs this year—here's where they went*, *CNBC*. Available at: <https://www.cnbc.com/2023/12/21/over-100000-workers-were-laid-off-from-tech-jobs-this-year-where-they-went.html> (Accessed: 22 December 2023).
- Son, S. and Kim, D.-Y. (2021) 'Organizational career growth and career commitment: Moderated mediation model of work engagement and role modeling,' *International Journal of Human Resource Management*, 32(20), pp. 4287–4310. Available at: <https://doi.org/10.1080/09585192.2019.1657165>.
- Stafford, M. (2011) 'Engaged Staff Yields Engaged Clients.', *Journal of Financial Planning*, pp. 28–29.
- Su, Z., Sun, X. and Zhao, D. (2023) 'The impact of employee entrepreneurship on sustainable innovation capability: the effect of value cocreation and role stress.', *Chinese Management Studies*, 17(4), pp. 808–828. Available at: <https://doi.org/10.1108/CMS-12-2021-0535>.
- TAYLOR, J. (2010) 'PUBLIC SERVICE MOTIVATION, CIVIC ATTITUDES AND ACTIONS OF PUBLIC, NONPROFIT AND PRIVATE SECTOR EMPLOYEES.', *Public Administration*, 88(4), pp. 1083–1098.
- Taylor, M. (2018) *The Great Recession and California's Recovery*. California Legislative Analyst Office. Available at: <https://lao.ca.gov/reports/2018/3910/recession-recovery-121318.pdf> (Accessed: 26 December 2023).
- Thibodeau, P. (2023) *Federal government plans big IT pay hikes* | *Computerworld*. Available at: <https://www.computerworld.com/article/2588673/federal-government-plans-big-it-pay-hikes.html> (Accessed: 7 January 2024).
- Thomas, K.W. (2009) *Intrinsic motivation at work: what really drives employee engagement*. 2nd ed. San Francisco: Berrett-Koehler Publishers (A BK business book).
- Thunnissen, M., Boselie, P. and Fruytier, B. (2013) 'Talent management and the relevance of context: Towards a pluralistic approach,' *Human resource management review*, 23(4), pp. 326–336.

Timbers, E. (1966) 'Strengthening Motivation through Communication', *Advanced Management Journal*, 31(2), p. 64.

Tretiakov, A., Jurado, T. and Bensemman, J. (2023) 'Employee Empowerment and HR Flexibility in Information Technology SMEs.', *Journal of Computer Information Systems*, 63(6), pp. 1394–1407. Available at: <https://doi.org/10.1080/08874417.2022.2158962>.

Trueman, C. (2023) *Tech layoffs in 2023: A timeline*. Available at: <https://www.computerworld.com/article/3685936/tech-layoffs-in-2023-a-timeline.html> (Accessed: 28 December 2023).

Van Deursen, A. and Van Dijk, J. (2011) 'Internet skills and the digital divide', *New media & society*, 13(6), pp. 893–911.

Veneri, J.M. (1988) 'An Investigation of Differences in Motivators of Information Systems and Non-Information Systems Personnel and the Motivating Potential of Jobs in the Information Systems and Non-Information Systems Fields',. Available at: <https://api.semanticscholar.org/CorpusID:145338291>.

Wellins, R.S., Bernthal, P. and Phelps, M. (2005) 'Employee engagement: The key to realizing competitive advantage,' *Development Dimensions International*, 5(1), pp. 1–31.

Wiles, J. and Turner, J. (2022) *Build a Sense of Belonging in the Workplace*. Available at: <https://www.gartner.com/smarterwithgartner/build-a-sense-of-belonging-in-the-workplace> (Accessed: 24 January 2024).

William, F. (2019) *Recruiting Talent & Bill Gates Prediction*. Available at: <https://www.linkedin.com/pulse/recruiting-talent-bill-gates-prediction-fouad-william-awad/> (Accessed: 7 February 2024).

Wright, B.E. (2001) 'Public-Sector Work Motivation: A Review of the Current Literature and a Revised Conceptual Model', *Journal of Public Administration Research and Theory*, 11(4), pp. 559–586. Available at: <https://doi.org/10.1093/oxfordjournals.jpart.a003515>.