

A Quantitative Study on the Impact of Servant Leadership on Employee Engagement in the Fire Service Industry

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Abstract

This quantitative correlational study examines the relationship between servant leadership and employee engagement within the fire service industry in the United States. Declining employee engagement among firefighters adversely affects individual and organizational performance, compromising the department's ability to provide high-quality community services. While previous research has demonstrated a positive correlation between servant leadership and employee engagement in various public service sectors, a gap remains in extending this research to the fire service industry. Using purposive sampling, 609 career firefighters from a metropolitan fire department in Colorado were surveyed with a 16-question instrument combining the Servant Leadership Survey (SLS-7) and the shortened Utrecht Work Engagement Scale (UWES-9). With a response rate of 30%, 183 participants provided data. Reliability analysis revealed high reliability for the servant leadership variable ($\alpha = .90$) and the employee engagement variable ($\alpha = .986$). Normality tests indicated non-normal distributions for both variables. Spearman's rank correlation rho revealed a moderate positive correlation, suggesting a significant positive relationship between servant leadership and employee engagement. These findings support the beneficial impact of servant leadership on firefighter motivation, well-being, and commitment. The study highlights the importance of implementing servant leadership to cultivate a positive work environment that enhances employee engagement. Practice recommendations include developing formal servant leadership programs and integrating education and training with accountability and corporate social responsibility.

Keywords: Servant Leadership, Employee Engagement, Fire Service Industry, Public Service, Quantitative Correlational Study

Introduction

Employees constitute the foundational component that sustains an organization's operational continuity (Abasilim et al., 2022). Regardless of the size, location, and industry, an organization should ensure its employees have all the necessary resources to accomplish their mission efficiently and effectively. Leaders set workplace norms, provide guidance to meet operational demands, and provide direction, vision, motivation, and inspiration; they create a work environment conducive to successful outcomes and facilitate communication for team collaboration (Kumari & Yelkar, 2022). Babel'ová et al. (2021) posit that leadership styles, personalities, and behaviors significantly impact employee motivation and engagement. This understanding underscores the importance of exploring the connection between leadership and employee engagement. As highlighted by Dillard and Osam (2021), leaders who demonstrate practical utility foster a sense of psychological safety among their team members, supporting individuality, belonging, and enhancing engagement.

Consequently, leadership emerges as a valuable resource for individual employees and the organization's overall success. Heyler and Martin (2018) stated, "Servant leaders are a valuable, rare, imperfectly imitable, and non-substitutable resource that an organization can use to achieve a competitive advantage" (p. 240). If a correlation between employee engagement and leadership is substantiated, deficiencies in either aspect could significantly affect the organization's sustainability.

Greenleaf (1977) established the concept of servant leadership in his seminal studies in 1970. Greenleaf distinguished ten essential elements of servant leadership: listening, empathy, healing, awareness, persuasion, conceptualization, foresight, stewardship, commitment, and community-building (McBath, 2018). Stewart's 2022 study highlighted the variability of effective leadership styles across different work environments and individual needs. Stewart's statement challenges future researchers to fortify decision-making through inclusionary and exclusionary design processes. To explore this diversity, the initial phase of the current research examined various leadership approaches, focusing on their impact on employee engagement. This examination into servant leadership aims explicitly to uncover knowledge gaps and reinforce existing research findings. Servant leadership aligns with the moral ethics expected of firefighters and fire service organizations' mission of protecting lives and property while building and supporting communities. Canavesi and Minelli (2022) found that servant leadership encourages followers to reach their full potential. Leveraging individuals' full potential using the servant leadership approach has been linked to a collective positive behavioral, attitudinal, and performance outcome. Servant leadership's morale-based leadership style has emerged with a focus on promoting integrity and prioritizing the empowerment of followers. Marques-Quinteiro et al. (2022) suggested that society relies on firefighters to risk their lives to save others' lives and property. Physical, mental, and emotional exhaustion are components of firefighters' well-being, and this study may assist leadership in developing methods to aid firefighters in coping with the rigorous job demands (Marques-Quinteiro et al., 2022). Bentein et al. (2022) stated that a gap in the literature exists and that future research in other public sector organizations, such "as fire service," was needed to examine the generalizability of servant leadership's relationship to public sector engagement. This study exists to fill this critical gap.

Industry Problem and Purpose

The problem examined in this study is the critical issue of declining employee engagement among firefighters, which significantly impacts their cognitive abilities and overall performance. This lack of engagement undermines the department's capacity to effectively respond to emergencies, deliver high-quality service to communities, maintain status as an employer of choice, and retain capable employees (Kundu & Nag, 2021). Engaged employees enhance performance and productivity in organizations by approximately 22% more than organizations with diminished employee engagement (Kundu & Nag, 2021). Increased workplace engagement facilitates employees' belief in the firm and their

desire to improve their work, exceed expectations, and increase efficiencies, positively impacting the organization's success (Mostafa, 2021).

This quantitative correlational study examined the relationship between servant leadership and employee engagement in the public service industry, specifically the fire service industry. The results of this study advance existing theories and models while filling the gap in the literature related to leadership and employee engagement. The findings substantiated a statistically significant positive correlational relationship between servant leadership and employee engagement variables. Historically, employee engagement drives individual commitment to work institutions and organizational success (Kumari & Yelkar, 2022). Low employee engagement in the public service industry may be created by factors such as compassion fatigue and customer incivility (Gomes et al., 2022; Mostafa, 2021). If left unresolved, these problems could result in an organization's inability to meet community needs, retain talent, and remain competitive as an employer of choice (Kundu & Nag, 2021). Significant changes in social norms caused by the pandemic exacerbated the need to leverage employee engagement models and explore methods to foster employee loyalty, retention, and trust (Kundu & Nag, 2021).

Previous research has examined the relationship between employee engagement and servant leadership in the public and private sector industries (Bentein et al., 2022; Jones, 2020; Slack et al., 2020; Storey, 2020; Zeeshan et al., 2021). However, according to Slack et al. (2020), future research in various public-sector industries is needed to support the relationship between servant leadership and public-sector employee engagement. Previous research evaluates the social construct around organizations and acknowledges that leadership styles undergo a natural evolution, similar to a living organism; leadership styles and theory evolve with societal norms and behavior to meet the needs of organizations and their constituents (Khan et al., 2016). Using previous studies as a foundation, this research examines the correlation between servant leadership and employee engagement in the fire service industry.

Babel'ová et al. (2021) found that the functionality of the relationship between subordinates and their respective leader was related to the type of leadership style utilized. The authors also substantiated that subordinates' engagement and intention to retain employment were based on the quality of the relationship with their leader. Slack et al. (2020) assert that a leader's ability to influence actions and behaviors affects public-sector employee engagement by creating an ethical environment and initiating public-sector reform. Furthermore, effective leadership is foundational to an organization's ability to remain competitive and quickly adapt to changing societal conditions. Consequently, Slack et al. found that leadership styles aligned with best practices are the greatest resource for subordinates' success and the organization's mission. The decision to advance previous research in employee engagement and servant leadership was based on the research gap and the need for organizations to attract and retain employees to accomplish their desired mission. If a positive correlation can be discovered, servant leadership may support the fire service industry's mission to safeguard and grow communities (Marques-Quinteiro et al., 2022).

The researcher surveyed literature using multiple platforms, including Columbia Southern University's online library, Connected Papers, and Google Scholar. Keywords included servant leadership, leadership, employee engagement, employee resources, fire service, firefighters, job involvement, business prosperity, business success, and career growth.

Literature Review

Harshitha (2015) stated that the definition of employee engagement is "a workplace approach designed to ensure that employees are committed to their organization's goals and values, motivated to contribute to organizational success, and are able at the same time to enhance their sense of well-being" (p. 97). Furthermore, Harshitha mentions that employee engagement was developed from previous literature (e.g., Kahn, 1990) derived from cognitive, emotional, and behavioral components. If employees are emotionally and mentally invested in their work and the organization's success, a positive emotional

state can be achieved, which produces high levels of activation and pleasure from completing tasks (Harshitha, 2015). However, the absence of employee engagement has polarizing effects (Harshitha, 2015). Multiple factors influence employee engagement. The perceived absence or low levels of employee engagement contribute to the three burnout dimensions: cynicism, exhaustion, and diminished efficiency (Harshitha, 2015)

Various factors impact employee performance, such as motivation and leadership style (Shellow, 2022). Employees who experience decreased performance can significantly impact teams and cost organizations billions of dollars annually (Lee & Rhee, 2019; Ward, 2021). Through the lens of organizational performance, diminished engagement costs U.S. businesses approximately \$550 billion annually (Shellow, 2022). Achieving high employee engagement is a means to achieve increased performance and is critical to avoid high turnover rates, shortage of skilled workforce, burnout, and low team morale. Moletsane et al. (2019) stated that engaged employees are emotionally invested in creating value for their organization. Shellow (2022) gave credence to the emotional connection between leaders, their leadership style, and organizational value through the theoretical framework of Maslow's hierarchy of needs.

Maslow defines an individual's five basic needs as physiological needs, safety, love and belonging, esteem, and self-actualization needs (Ştefan et al., 2020). Maslow's theory offers a practical means for leaders to influence employees through healthy relationships, a conduit to organizational success. There are several causes of disengaged employees. Leaders can affect employees' engagement and connectivity to an organization by leveraging their leadership style to create and maintain healthy relationships (Shellow, 2022).

Disengaged employees and low employee engagement can negatively impact organizations in many ways (Kundu & Nag, 2021). This research explores three common causes of low employee engagement: incivility (Mostafa, 2021), dimensions of burnout (Harshitha, 2015; Marques-Quinteiro et al., 2022), and compassion fatigue (Gomes et al., 2022). Workplace incivility may occur internally from coworkers and supervisors or externally from customers (Mostafa, 2021). Mustafa determined that customer incivility is a dynamic problem in the public service industry. Several studies investigated incivility and determined that the mistreatment of employees by customers creates increased emotional exhaustion, psychological stress, and diminished psychological well-being and service performance (Adams & Webster, 2013; Arnold & Walsh, 2015; Shao & Skarlicki, 2014). Mostafa (2021) coined the term service-oriented organizational citizenship behaviors (OCBs), which describes positive employee behaviors that directly affect customer outcomes and organizational effectiveness in a positive manner, such as working late to meet customer needs. Service-oriented OCB is essential in public service industries because employees face situations that necessitate going above and beyond organizational expectations to meet customer needs (Mostafa, 2021).

Diminished Engagement Causes and Outcomes

Harshitha (2015) postulated three burnout dimensions contributing to low employee engagement: exhaustion, cynicism, and a sense of inefficacy. Burnout was characterized as exposure to prolonged psychological responses to workplace stressors (Ângelo & Chambel, 2015). Ângelo and Chambel surveyed 651 firefighters and conducted a panel analysis, determining a causal relationship between organizational demands/supervisory support and burnout/engagement. Research concerning firefighters' psychological occupational health has been determined to have several adverse effects due to their extended exposure to psychological stressors and physical danger (Varvel et al., 2007). The job demand and resource model (JD-R) includes two psychological processes: health impairment and motivation (Ângelo & Chambel, 2015).

Gomes et al. (2022) illustrated the negative impact created when public servants such as firefighters and police officers experience burnout. Several effects, such as performance issues and turnover, occur. Research has established occupational stress and its relationship to serious health

problems (Gomes et al., 2022). Burnout has been associated with increased tendencies for suicide attempts in public service positions (Febrianti & Yulian, 2022). Burnout syndrome is categorized as a work-related mental state that presents exhaustion and feelings of inefficiency and ineffectiveness. Burnout syndrome is more prominent in professions that support emergency services and situations, such as firefighters (Florio, 2010).

According to Gomes et al. (2022), burnout is a unique phenomenon that negatively impacts the quality of service provided by public service industries such as firefighters and police forces. Data collected from 1,682 public service employees shows that burnout negatively impacts performance. Furthermore, Gomes et al. (2022) illustrate the data collected in 2021 from police officers through a survey, which substantiates a correlation between burnout and turnover intentions within public service industries. This research demonstrates the negative impacts on public service workers, which may result from excessive workloads imposed through ineffective leadership strategies and approaches to providing community needs. If public service professionals are operating while experiencing burnout syndrome, the service rendered is diminished, decreasing the quality of service to communities (Gomes et al., 2022). External customers who experience subpar service may subject the public service worker to incivility (Haider et al., 2019). Gomes et al. (2022) articulate that compassion satisfaction moderates the relationship between turnover intention and burnout among public service employees. More specifically, public service employees who experience compassion satisfaction show decreased intentions to resign.

Compassion satisfaction is an individual's intrinsic feeling of reward for rendering care to others, making a positive difference in others' lives, and contributing to the well-being of society (Haider et al., 2019). The opposite of compassion satisfaction is compassion fatigue. This negative composition leads to turnover and contributes to burnout and secondary trauma for public service industry employees. Haider et al. (2019) stated that public service employees are intrinsically motivated in their organizational positions to serve the greater needs of individuals and communities. This concept is known as public service motivation theory, which emerged in the late 1980s (Haider et al., 2019). Haider et al. found that employees with a strong desire and willingness to contribute to greater public welfare may be exposed to debilitating circumstances that diminish their desire to provide exhaustive service to citizens. One debilitating factor that contributes to reduced employee engagement may be compassion fatigue (Gomes et al., 2022).

Haider et al. (2019) discussed compassion fatigue through the lens of police officers who frequently have dual roles, which is also called "compassionate warrior mentality" (Chopko, 2011). Police officers can arrest individuals while supporting victims. Similarly, firefighters are subjected to high workloads, increased task demands, and acute stress levels under extreme circumstances while protecting lives and property (Gomes et al., 2022). Professionals subjected to trauma or significant emergencies while performing their job duties are found to have higher rates of compassion fatigue and diminished rates of compassion satisfaction, which correlates to higher levels of burnout. Compassion fatigue presents itself in the public sector as a primary contributor to professionals' intention to leave the organization.

Theoretical Connection Between Engagement and Leadership in Fire Service

Public service motivation theory (PSM) supports the theoretical framework of the seven pillars of Greenleaf's servant leadership theory. Haider et al. (2019) stated that the PSM concept was derived by Perry and Wise in 1990. The public service motivation theory describes "an individual's predisposition to respond to motives grounded primarily or uniquely in public institutions and organizations" (Perry & Wise, 1990, p. 368). The study's authors assert that the public sector has been recognized as a prominent pillar of society's development and prosperity.

Liu and Zhao (2022) found that PSM was a mediating variable between servant leadership, work performance, and motivation of public servants. Furthermore, public service employees are more willing to aid others, which drives individuals' job satisfaction and motivation. Haider et al. (2019) draw from the PSM theory and total quality management (TQM) principles. PSM and TQM enable researchers, business

executives, and leaders to bolster and synchronize with Greenleaf's seven pillars of servant leadership by pinpointing an efficient organizational structure and optimizing resource allocation.

Leadership is a critical component of employee engagement (Harshitha, 2015). Khan et al. (2016) stated that the definition of leadership was elusive and asserted that leadership was an art, something to be completed over time, not simply by reading books. Leadership was more tribal than scientific, more weaving of relationships than an amassing of information, and, in that sense, those pursuing a clear definition of leadership have difficulty pinning in every detail. (p. 6). Walker and Aritz (2014) mentioned leadership as one's ability to influence others toward achieving goals.

Consequently, leadership styles are how an individual executes tactics to motivate and guide others while strategizing how to meet stakeholders' needs (Khan et al., 2016). This correlational study explored the relationship between servant leadership and employee engagement in the fire service industry. According to Freeman (2022), servant leadership "is a viable model for U.S fire department leaders and supervisors" (p. 1). Servant leadership focuses on the follower's needs to advance individuals holistically for the betterment of the organization and the communities served (Freeman, 2022; Khan et al., 2016). Leaders are encouraged to relinquish their power to followers, and, in return, leaders are endowed with the authority to render resources and direction to serve others to become their best selves (Freeman, 2022). Mostafa (2021) asserts that servant leadership behaviors are connected with employee engagement, which supports the importance of conducting this study's research to substantiate correlation through a formal research process.

Methods

This quantitative correlational study examined the relationship between servant leadership and employee engagement in the fire service industry. The population includes 1,063,400 active career, volunteer, and paid-per-call firefighters in the United States (U.S. Fire Administration, 2023). Purposive sampling was used to intentionally select the sample from 609 firefighters currently employed in one metropolitan fire department in Colorado.

This study used the Utrecht Work Engagement Scale (UWES-9), developed by Schaufeli and Bakker (2004), and the Servant Leadership Survey (SLS-7), developed by Liden et al. (2015), to gather data to examine the relationship between employee engagement and servant leadership in the fire service industry. G*Power was conducted to determine a minimum number of 84 firefighters to be surveyed to minimize the risk of type II error.

This study supports previous research on the positive relationship between employee engagement and servant leadership. Therefore, the findings could be used to support developing and implementing a servant leadership training program within the fire service industry to enhance employee engagement. With servant leadership as the foundation, the fire industry may be able to create initiatives to increase firefighter well-being and retention and decrease costs (Slack et al., 2020).

Research Question

RQ1: What is the relationship between servant leadership and employee engagement in firefighters in the United States?

H₁₀: There is no statistically significant relationship between servant leadership and employee engagement among firefighters in the United States.

H_{1a}: There is a statistically significant relationship between servant leadership and employee engagement in firefighters in the United States.

The criteria for selecting participants for this study included full-time firefighters employed with a metropolitan fire service organization in Colorado. Second, only full-time employees who were *line employees* could participate. The exclusion criteria for non-participants included any person who was not a full-time employee of the single metropolitan fire department in Colorado or any full-time employee who was not a *line employee*. Inclusion and exclusion for survey participants were determined based on pre-existing fire department email alias groups. All line personnel emails were grouped in the *Line Employees'* email group list. All *staff* or non-line personnel members were grouped in the *Staff Employees* email group list. All survey participants were recruited through email correspondence.

Instrumentation

The independent variable for this study was servant leadership, and the dependent variable was employee engagement. Individual employee engagement was measured by the Utrecht Work Engagement Scale (UWES-9) (Schaufeli & Bakker, 2004). This 9-item, 6-point Likert-scale instrument measures from 0 (never) to 6 (always/every day). Servant leadership was measured by Liden et al.'s (2015) SLS-7, which consists of seven 7-point Likert scale questions ranging from 1 (strongly disagree) to 7 (strongly agree). The UWES was introduced in 1999. According to Schaufeli and Bakker (2004), reliability consists of internal consistency (Cronbach's α) and test-retest reliability, also known as stability. Cronbach alpha scores of .867, .819, and .903 indicate good instrument reliability.

Domínguez-Salas et al. (2022) conducted a cross-sectional study on healthcare workers utilizing the UWES-9 to assess work engagement during the COVID-19 pandemic, using mental health as a variable. The findings supported both the reliability and validity of the UWES-9. Domínguez-Salas et al. stated that work engagement was a fulfilling construct that can be seen as an antidote to workplace impacts such as burnout. Jones (2020) utilized the servant leadership scale to identify if a correlation existed with employee engagement across several organizations and industries in the United States. The findings substantiated the survey's reliability and validity as a tool that may identify the correlation between employee engagement and servant leadership (Jones, 2020).

Validity and Reliability

Convergent and criterion validity were established on the SLS based on the results of two qualitative and eight quantitative studies, which included approximately 1600 participants (Van Dierendonck & Nuijten, 2011). Internal consistency for the SLS survey was established by examining three different studies (Henson & Roberts, 2006; House et al., 2004; Konczak et al., 2000), and Cronbach's alpha scores ranged from .72 to .89 (Van Dierendonck & Nuijten, 2011). The validity was assessed on data collected within the Netherlands and the United Kingdom. The eight-factor model was confirmed utilizing a chi-squared test. These studies concluded by confirming the cross-cultural factorial validity of the eight-factor model. The generally accepted values of good fit are close to .95 for the comparative fit index (CFI) and the Tucker-Lewis index (TLI) and less than .08 for the standardized root mean square residual (SRMR) and root mean square error of approximation (RMSEA) (Fan & Sivo, 2007; Hu & Bentler, 1998).

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Data Collection Procedures

Participant recruitment relied on utilizing the fire department's Outlook email platform. The researcher communicated with participants via an internal organizational email address. The fire department's pre-existing email alias, Line Employees, included all 609 of the line firefighters' organizational email addresses. The SurveyPlanet online platform was used to facilitate the data collection procedure for this research, allowing participants to participate in the survey efficiently and effectively. The survey consisted of two combined survey instruments, totaling 16 items. The researcher uploaded the survey instrument into SurveyPlanet, where survey participants were asked to rate each item utilizing the 7-point Likert scale for the UWES-9 (0=Never, 6=Always/Every day) and a 5-point Likert scale for SLS-7 (1=Strongly disagrees, 5= Strongly agrees). On average, the survey duration was approximately 5 minutes.

On the first page of the survey, an informed consent document was provided to participants, detailing the purpose of the study, duration, and procedures. To ensure anonymity, the informed consent advised participants of confidentiality rights and the researchers' de-identification process, which consisted of all participants being represented numerically and not by their names. Participants agreed to the terms of the informed consent document by electronically signing before they were allowed to proceed to the next step of the survey process. If participants were not interested in participating in the study, they could decline participation and exit the survey at any time. If a participant decided to rescind their survey results post-survey, they were allowed to email the researcher to request removal of their survey responses from the study. The participant's data were recorded within the SurveyPlanet platform. The survey data is securely maintained through a data-encrypted password. The survey data was securely stored on the SurveyPlanet platform for three years and then permanently deleted.

Results

The data analysis procedures included descriptive statistics in the completed survey, outliers, normality, and reliability. Each variable in the survey was tested for outliers to identify response(s) that could distort the data analysis results. Outliers are values that exceed the mean results (Bonett & Wright, 2015). The Kolmogorov-Smirnov Test of Normality was used to determine the normality of the data collected because the data for both variables were found not to be normally distributed. The reliability of the data compiled was evaluated utilizing Cronbach's α to determine the result's internal reliability (Bonett & Wright, 2015).

The sample was taken from the 609 firefighters currently employed within a metropolitan fire service organization in Colorado. A total of 183 responses were collected, resulting in a 30% response rate. No responses were removed because each respondent completed each item on the survey. Therefore, a sample size of 183 was used in this analysis. The duration of data collection for each data collection instrument was two weeks. The data were recorded utilizing the online survey platform SurveyPlanet.

After the survey participation period of two weeks, the data were exported to an Excel sheet. The exported data were saved and password protected. There were no variations or deviations from the data collection plan during the data collection process. Approximately 92% of the respondents were male. The respondents aged 35 to 44 and 45 to 54 comprised 64% of the total age groups (Appendix C). Descriptive statistics measured central tendency (mean, median, mode), range, variance, and standard deviation. In addition, an outlier and variable distribution (skewness and kurtosis) analysis was performed (Table 1).

Table 1

Numerical Summaries of Servant Leadership and Employee Engagement Variables

Numerical Summaries

	<i>M</i>	<i>SD</i>	<i>Skew</i>	<i>Kurt</i>	<i>N</i>
Servant Leadership	4.10	0.99	-0.23	-0.76	183
Employee Engagement	5.24	1.24	-0.93	-0.56	183

A post hoc analysis was conducted to ascertain the study's statistical power analysis (Kang, 2021). The G*Power calculation resulted in 0.9861491 power, higher than the predicted .80 power.

Dimensional analysis was used to determine the scale reliability. The reliability of the data collected was calculated using R Commander. The reliability of the servant leadership survey was 0.90, and the reliability of the employee engagement survey was .986., as illustrated in Table 2.

Table 2

Reliability of Survey Instruments

	Reliability
Servant Leadership	.90
Employee Engagement	.986

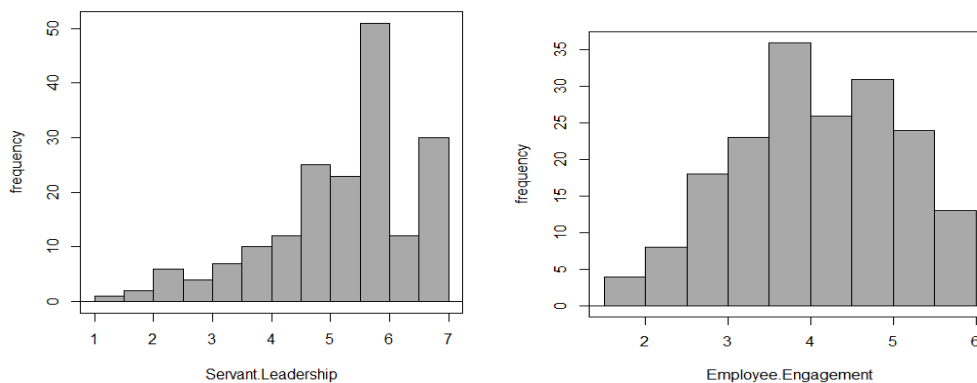
The two variables utilized in this study were formed by coupling two separate, reliable, and valid surveys: the shortened version of the UWES-9 and the shortened version of the servant leadership survey (See Appendix A).

Exploratory Data Analysis

As shown in Figure 1, the histogram illustrates the distribution of respondents' selection to questions across the servant leadership and employee engagement variables. According to Harsh et al. (2018), histograms are used to visually illustrate outliers, skewness, and other data distribution features around the data.

Figure 1

Histogram of Frequency Scores of Servant Leadership and Employee Engagement Variables

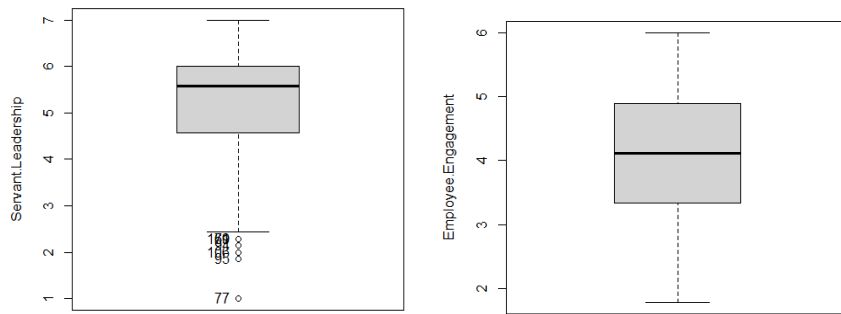


Outlier Analysis

Outliers are identified errors that may have occurred based on erroneous data entries or questionnaire issues during sampling (Mowbray et al., 2018). Each variable was examined for outliers utilizing the normality test, and the distribution was assessed. As shown in Figure 2, the box plot for servant leadership indicated seven outliers from respondents numbers 61, 70, 77, 94, 95, 106, and 159. The seven potential outliers for servant leadership were not removed from the data set. The box plot for employee engagement found zero outliers.

Figure 2

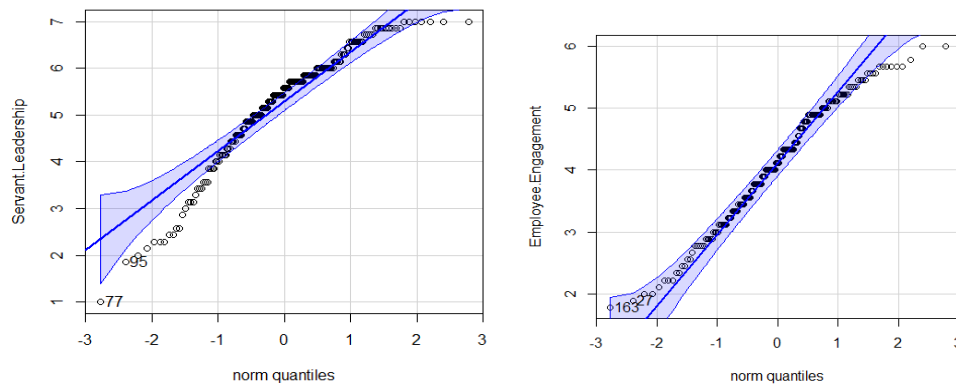
Boxplot for Servant Leadership and Employee Engagement



The quantile-quantile plot (Q.Q. plot) is a graphical illustration that was used to determine if the data set has a standard distribution (Dansana et al., 2020). According to Zuzani et al. (2019), quantiles come from the same distribution if the points form a straight line. The sample data is considered skewed if a straight line does not occur. The Q.Q. Plots in Figure 3 illustrate data clusters around the straight line. The data around servant leadership and employee engagement are not normally distributed.

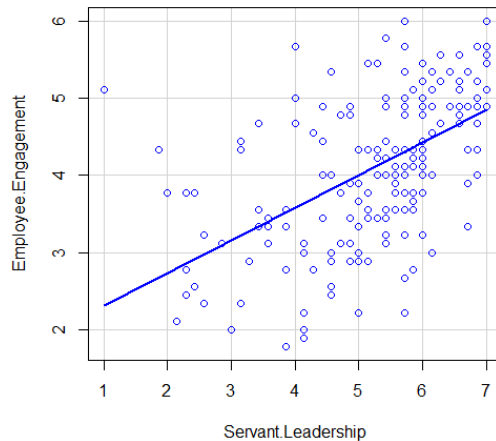
Figure 3

Q.Q. Plot for Servant Leadership and Employee Engagement



As illustrated in Figure 4, the scatter plot depicts a moderate positive linear relationship between variables. Li et al. (2022) mention that scatter plots are the most widely used data visualization tools.

Figure 4
Scatterplot for Servant Leadership and Employee Engagement



The Anderson-Darling normality test was used to assess deviations from normality. The test results on the servant leadership variable were significant: $A = 3.5932$, $p\text{-value} = 0.000000005261$ (Table 3). Thus, the servant leadership variable was not normally distributed. The test results on the employee engagement variable were also significant: $A = 1.1084$, $p\text{-value} = 0.006489$. Thus, the employee engagement variable was considered to be not normally distributed.

Table 3
Anderson Darling Normality Test

Study Variables	Anderson Darling	
	A	P-Value
Servant Leadership	3.5932	0.000000005261
Employee Engagement	1.1084	0.000000005261

A test of the relationship between servant leadership and employee engagement was performed. Both variables were found not to be normally distributed. Therefore, the Pearson correlation test could not be used (Mukaka, 2012). The Spearman's rank correlation rho was selected as the test statistic. The result of the test was significant, $S = 425349$, $p\text{-value} < .001$. The Spearman's rank correlation rho of 0.5835564 indicates a moderate positive relationship.

The research question concerned the possibility of a correlation between servant leadership and employee engagement. Utilizing the data collection instruments SLS-7 and UWES-9 and non-parametric testing, this study revealed a significant relationship between servant leadership and employee engagement in the fire service industry. The post hoc calculation revealed that the study included enough participants to minimize a type II error.

Given these results, the null hypothesis of no relationship between servant leadership and employee engagement (H_{10}) can be rejected. Subsequently, this study identified a statistically significant moderate relationship between servant leadership and employee engagement among firefighters in the United States. The next section presents the study's findings, conclusions, theoretical and practical implications, recommendations for future research, and closing remarks.

Recommendations and Conclusions

The results of this study provide insights substantiating the relationship between servant leadership and employee engagement in the fire service industry. The findings can guide fire service industry leaders to understand the significant role of leadership in promoting employee engagement and the potential impacts on organizational success if servant leadership principles are not integrated into daily practice. This research fills a gap in the literature by providing quantitative data on the connection between servant leadership and employee engagement in the fire service field.

The findings support developing and implementing a servant leadership training program within the fire service industry and other public sectors by emphasizing leadership as a key facet of employee motivation and retention. This addition to existing research could broaden the understanding of various leadership types in enhancing employee well-being across different industries. The fire service industry invests heavily in its human capital to deliver top-tier services to communities, and recognizing servant leadership as a vital resource can significantly enhance organizational efficiency and effectiveness.

The problem identified is that firefighters face numerous motivation-depleting challenges, such as illnesses from daily exposures, exhaustion, and burnout. This research contributes to the body of knowledge regarding the responsibility of organizations to build a leadership pipeline based on servant leadership principles. By developing and implementing such programs, fire service organizations can cultivate a culture that enhances relationships and drives employee engagement. Leaders trained in servant leadership can create systems and processes focusing on positive employee outcomes, potentially reducing firefighter exposure to harmful conditions. A servant leadership-based culture can enhance firefighter well-being and retention while decreasing costs associated with high employee turnover.

This study can be utilized by fire service executives and human resource professionals to improve employee engagement and workplace satisfaction. By leveraging servant leadership, organizations can link employee success with organizational success, achieving a competitive advantage through positive relationships. This study produced new knowledge specific to the fire service industry, addressing previous research gaps. According to Bentein et al. (2022), future research should examine the generalizability of servant leadership's relationship to public sector engagement. Effective leadership practices can prevent burnout, on-the-job injuries, poor customer service, and undesirable emergency response outcomes, which are critical for maintaining high organizational performance.

The study's limitation is that it only included career firefighters, which may affect the generalizability of the findings across the entire fire service industry. Future research should include volunteer or paid-per-call fire departments and explore other public service sectors to add depth to the subject. Additionally, a qualitative or mixed-methods approach could broaden the understanding of employee engagement.

Future research should address the gaps identified by focusing on additional sectors in both public and private industries. Using the UWES-9 and SLS-7 research instruments across multiple industries can strengthen the reliability of these tools and expand the application of research findings. This study substantiates a significant relationship between servant leadership and employee engagement in the fire service industry. The practice recommendations are based on these findings and several theoretical foundations centered on employee engagement and leadership pillars. This approach can create a synergy of business sustainability, efficiency, and effectiveness while supporting employee well-being through healthy relationships.

Fire service organizations should implement formal leadership programs that include servant leadership training and benchmarks within promotion packets, aligning with the organization's mission, vision, and values. Establishing a leadership education and training pipeline will foster employee engagement. Emphasizing servant leadership within organizational culture can significantly improve employee engagement, performance, and retention, thus enhancing organizational commitment and loyalty. This synergetic approach focuses on creating a productive and safe workplace, allowing individual members' intrinsic motivation to thrive and supporting the organization's social fabric.

This research underscores the importance of creating a healthy work environment for firefighters by fostering strong leader-employee relationships, which increases motivation, supports retention, and creates a resilient organization capable of serving communities effectively. As Dr. Martin Luther King Jr. stated, "He who is greatest among you shall be a servant" (King, 1968). This philosophy highlights that true greatness and organizational success stem from servant leadership. By embodying servant leadership, fire service organizations can achieve their vision and mission, ensuring the well-being and engagement of their most valuable resource: their employees.

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APPENDIX A

Survey Instrument

Demographic Questions

1. Are you currently working in the Fire Service Industry?

Yes ___

No ___

2. Are you a firefighter?

Yes ___

No ___

3. How long have you worked as a firefighter?

0-2 year(s)

2-5 years

5-10 years

10-20 years

20+ years

4. What is your age group?

18-24

25-34

35-44

45-54

Over 55

5. What is your gender?

Male

Female

Prefer not to say

6. What is your ethnicity?

White/Caucasian

Hispanic/Latino

Black/African American

Native American/American Indian

Asian/Pacific Islander

Other

7. What is the highest degree or level of school you have completed?

Less than a high school diploma

High school degree or equivalent

Bachelor's Degree

Master's Degree

Doctorate

Other

Survey Instrument-Leadership and Wellness

PLEASE SELECT ONE FOR EACH QUESTION THAT COMES CLOSEST TO REFLECTING YOUR OPINION		strongly disagree	disagree	slightly disagree	neutral	slightly agree	agree	strongly agree
1	My leader can tell if something work-related is going wrong.							
2	My leader makes my career development a priority.							
3	I would seek help from my leader if I had a personal problem.							
4	My leader emphasizes the importance of giving back to the community.							
5	My leader puts my best interest ahead of his/her own.							
6	My leader gives me the freedom to handle difficult situations in the way that I feel is best.							
7	My leader would not compromise ethical principles in order to achieve success.							
PLEASE SELECT ONE FOR EACH QUESTION THAT COMES CLOSEST TO REFLECTING YOUR OPINION ABOUT IT.		Never	Almost Never (A few times a year or less)	Rarely (Once a month or less)	Sometimes (A few times a month)	Often (Once a week)	Very often (A few times a week)	Always (Everyday)
8	At my work, I feel bursting with energy.							

9	At my job, I feel strong and vigorous.							
10	My job inspires me.							
11	I am enthusiastic about my job.							
12	When I get up in the morning, I feel like going to work.							
13	I feel happy when I am working intensely.							
14	I am proud of the work that I do.							
15	I am immersed in my work.							
16	I get carried away when I'm working.							

Appendix B

Reliability of UWES Scales

	UWES-9 (N=9,679)			UWES-15 (N=9,679)			UWES-17 (N=9,679)		
	Total	Md	Range	Total	Md	Range	Total	Md	Range
Vigor	.84	.84	.75-.91	.86	.86	.81-.90	.83	.86	.81-.90
Dedication*	.89	.89	.83-.93	.29	.91	.88-.95	.92	.92	.88-.95
Absorption	.79	.79	.70-.84	.82	.81	.75-.87	.82	.80	.70-.88

Note. The dedication scale of the UWES-15 and 17 are identical.

Test-retest Reliability of the UWES Scales.

Scale	Salvation Army (Australia) (N=293)	Paramedics (Norwegian) (N=563)
vigor 6	.64	.71
vigor 5	.64	.70
vigor 3	.61	.71
dedication 5	.58	.69
dedication 3	.56	.66
absorption 6	.58	.69

Scale	Salvation Army (Australia) (N=293)	Paramedics (Norwegian) (N=563)
absorption 5	.58	.68
absorption 3	.57	.63
UWES-17	.63	.72
UWES-15	.62	.72
UWES-9	.64	.73

Appendix C

Descriptive Statistics of Completed Surveys

Demographic Statistics	Full Sample	
	n	%
Years of Service		
0-2 year(s)	10	5.46
2-5 years	12	6.55
5-10 years	24	13.11
10-20 years	52	28.41
20+ years	84	49.01
Prefer not to say	1	.54
Age		
18-24	2	1.09
25-34	34	18.57
35-44	63	34.42
45-54	54	29.50
Over 55	28	15.30
Prefer not to say	2	1.09
Gender		
Female	11	13.25
Male	168	91.80
Prefer not to say	4	1.63
Ethnicity		
White/Caucasian	153	83.60
Hispanic/Latino	7	3.82
Black/African American	4	2.18
Native American/American Indian	7	3.82
Asian/Pacific Islander	3	1.63
Other	2	1.09
Prefer not to say	13	7.10
Education		
Less than a high school diploma	0	0
High school degree or equivalent	30	16.39
Bachelor's Degree	100	54.64
Master's Degree	24	13.11
Doctor Degree	0	0
Other	27	14.75
Prefer not to say	2	1.09

Note. Reflects the number and percentage of participants who completed the survey.