Impact of Authentic-Servant Leadership on Trust and Employee Burnout in STEM Start-ups During Exogenous Shocks

Dr. Divya S
Assistant Professor, VIT Business School, Vellore Institute of Technology
Chennai, India
Divya.s@vit.ac.in

Abstract

Servant and authentic leadership styles have been known to elicit positive outcomes in all organizational levels, but are they adequate for the challenges presented by the VUCA world? In today’s business dynamics, it is exigent for Start-ups to adopt complex leadership traits to face the stiff competition. In this descriptive study, 586 employees working in STEM start-ups ranging from manufacturing, engineering and technology are chosen to understand the impact of authentic-servant leadership style on the employees’ burnout while the trust in supervisor is studied in a mediating role. The cohesiveness of authentic and servant leadership constructs is tested using Canonical Correlation. The empirical evidence shows that authentic servant leaders in a start-up would help reduce employees’ burnout experienced in their workplace. In times of uncertainty, when the leader is authentic while giving importance to the employees’ psychological well-being, in his or her transactions with the employees, it would go a long way in boosting their morale. This study is one of the first to identify the effectiveness of combining these two leadership styles and it contributes to the annals of leadership research in studying the triage of factors namely employee burnout, trust in supervisor and authentic-servant leadership in a start-up climate. The author concludes by charting out a detailed future agenda for attuning authentic-servant leadership practices towards sustainability of start-ups.

Keywords
Authentic leadership, Servant Leadership, STEM Start-up, Trust, Burnout, canonical correlation

1. Introduction

In times of exogenous shocks, challenges encountered by start-ups are more dynamic than established corporations (Manwaring et al. 2021). From the onset of the pandemic, the number of start-ups either succeeding or failing in these competitive times have been unprecedented, with many becoming unicorns, while many others have shut down. In this volatile atmosphere not just success, but even survival of start-ups rests solely on the leader. Leading them through the global turmoil is wrought with intangible parameters. The right leadership style is essential to spearhead the start-up in any eventuality (Sundermeier et al. 2020). Apart from the leaders of start-ups considered in the study, it has been found that even employees have been adversely affected by the pandemic. From the stress of handling work in these trying times, the employees are also experiencing an uncertain future, dependent on the economic health of the start-up (Joshi and Achuthan 2018). It is imperative to understand what can be done to improve the mental health of employees working in STEM start-ups. Authentic leadership and servant leadership styles have been extensively studied in various contexts and in interdisciplinary setting also. Even though there is a proliferation of leadership research, there is significant gap in leadership research in start-ups in volatile climate. Culture and organizational setting of a start-up is very unique and distinct from a typical corporation (Yue et al. 2019). A unique contribution of this article is acknowledging there is a difference in leading corporates and start-ups and to propose a leadership framework for spearheading start-ups. The impact of the managers adopting a combination of these two highly effective leadership styles, in a start-up setting is observed in this paper. Identifying
new nuances in existing leadership research is especially critical so it could be practically adopted by managers in
the present VUCA world.

1.1 Objectives
This empirical study aims to understand how servant and authentic leadership -the two predominant leadership
styles, work together in competitive and volatile start-up economies such as the STEM. The quantitative
methodology carried out for the study is designed to address key issues in start-up culture – leadership development
and psychological well-being of employees, in this case, their burnout. The results are statistically analyzed and
provide proof for bringing out a robust model in strengthening start-ups in STEM fields.

2 Literature Review
In the present study, the manager’s leadership style has been observed from the perspective of the reporting
employees. In the present global turmoil, it is crucial for leaders to act with integrity and to lead with strong ethical
values. Authentic leadership has been defined as the leadership style in which the leader acts true to his/her self, is
transparent about his/her actions, has strong ethical and moral values and is balanced when taking decisions or
processing information (Walumbwa et al. 2008). Several studies have stressed on the importance of being authentic
when leading an organization. Leaders who possess self-consistency and self-knowledge in their behavioral
attributes, are most likely to be authentic leaders (Bennis 2003, Walumbwa et al. 2008). Authentic leaders have been
attributed to influence several positive outcomes on all levels of an organization. In the individual level, authentic
leaders influence several positive outcomes such as innovative work behavior of employees, self-esteem, motivation
authentic leadership has been studied and found to be highly effective in inducing positive organizational outcomes
in various sectors such as healthcare, hospitality and education (Shrivastava et al. 2020, Wang and Xie, 2020,
Alilyyani et al. 2018).

Though servant leadership has been purported to be active in social service sectors such as NGOs and religious
organizations (Ortiz-Gómez et al. 2020), servant leadership is one leadership style whose goal is not organizational
success or increased productivity, but the psychological well-being and needs of the followers (Van Dierendock,
2014). In recent years, a surge of research studies could be seen focusing on servant leadership and its impact on
employees and in turn the organization. This inter-disciplinary leadership style has been found to positively
influence employees’ behaviors such as work engagement, performance, etc (Ye et al. 2019, Bavik 2020), and has
also been observed in many industrial settings such as education, healthcare, manufacturing, etc (Opoku et al. 2019,

Trust has been a crucial factor for a conducive work atmosphere. Trust between coworkers, trust in supervisor is one
amongst a few trust-based factors that influence the work environment in an organization (Park et al. 2020 Afsar and
Shahjehan 2018). Trust in leader has especially been studied in congruence with other leadership styles to study
employee behavioral outcomes such as creativity, turnover intention and job involvement (Afsar and Shahjehan,

It is imperative for research scholars to study not only the positive outcomes in an organization but also the negative
consequences that might occur and ways to diminish the incidents of these. Deviant workplace behaviors, workplace
bullying, absenteeism, burnout and turnover intention are some of the counterproductive outcomes affecting
employees a workplace and therefore an organization at large (Khattak et al. 2019). Burnout has been defined as the
emotional and physical exhaustion experienced by an employee at his/her workplace (Gabriel and Aguinis 2021).
Employees experiencing burnout is common to employees across sectors, and several years of research have
identified factors to reduce burnout such as the right leadership, workplace friendship and institutional support
amongst many (Doolittle 2021, Khan et al. 2020). When understanding these key constructs, there could be found a
significant gap in research. The constructs have not been studied in conjunction in any research study. With the
dynamic nature of start-up economy and organizational setting, it is imperative to fix this gap and identify how
servant-authentic leadership styles could play a crucial role in improving the work environment. To bridge this, the
present research study is aimed to understand how the key constructs namely authentic leadership, servant
leadership and trust in supervisor work with each other to reduce employee burnout in STEM Start-ups.

2.1 Model and Hypothesis formulation
Servant leadership style with its elements of compassion and authenticity, has been known to be congruent to authentic leadership behaviors in many instances. In a study on women entrepreneurs’ motivational behaviors, it has been observed that authenticity is the ‘cornerstone’ of their exhibited servant leadership traits and these women entrepreneurs were found adopt these two leadership styles (Sims and Morris, 2018). In an interesting review, Onyalla (2020) argues that components of authentic leadership are central to other leadership thoughts and instead of studying authentic leadership as a separate construct, it would be a value add to study this style in conjunction with other leadership styles. Several studies corroborate with these research outcomes that servant and authentic leadership styles are not direct contrasts, but could be applied as a single leadership construct in many instances (Secatero et al. 2022, Buck 2019). In line with these research studies, it could be hypothesized that authentic and servant leadership styles correlate with each other. This leads to proposing the first hypothesis (Figure 1):

H1: Authentic leadership and Servant leadership are significantly correlated

![Figure 1. Canonical Correlation of Servant and Authentic Leadership Styles](image)

Authentic and servant leadership styles have been found to individually instill in the reporting employees a feeling of trust in their supervisors. Leaders practicing authentic leadership styles were found to create a climate of trust within their team and also make their team to trust them in almost all work environments such as sports, education, health and STEM (Qiu et al. 2019, Maximo et al. 2019, Zhang et al. 2021). Similar to authentic leadership, the influence of servant leadership in generating trust in supervisor has been researched extensively and it has been found that servant leadership has a positive impact on the trust that employees have on their managers (Khan et al. 2020, Qiu and Dooley 2022). Owing to these research studies, it could be hypothesized that our leadership construct – Authentic servant leadership when practiced, would lead to employees having a sense of trust on their manager. This would be the hypothesis H2.

H2: Authentic servant leadership has a significant positive relationship with supervisor trust
Along with the promotion of positive workplace parameters, some leadership styles contribute in minimizing factors disrupting a conducive workplace. These factors could range from turnover intention to absenteeism, burnout or even workplace bullying. Authentic leadership style has been found to play a crucial role in minimizing employee burnout in the workplace (Adil and Kamal 2018; Lee et al. 2019). Several studies report that managers with servant leadership traits have been found to execute a primary role in diminishing the feeling of burnout experienced by their employees (Ma et al. 2021; Divya and Suganithi 2018; Lamprinou et al. 2021). Based on these studies’ findings, it could be hypothesized that authentic servant leadership trait would reduce employee burnout.

H3: Authentic servant leadership has a significant negative relationship with employee burnout.

Trust by employees on the organization, on the supervisors and even coworkers has been found to act as a buffer in reducing employee burnout (Park et al., 2020). Trust in supervisor has been especially found to act as an effective instrument in mitigating many depreciating effects on employees like stress and burnout (Bunjak et al., 2021; Moerdler et al., 2022). The hypothesis H4 could be founded on these theories that trust in supervisor could reduce the feeling of burnout experienced by employees in their workplaces.

H4: Supervisor trust has a significant negative relationship with employee burnout.

Trust has been used in a mediational role by many studies to understand various organizational behavior paradigms. Studies have found that supervisor trust acts as a mediator between various organizational behavior constructs such as justice, organizational settings, and several multi-level outcomes like organizational citizenship behaviors, employee satisfaction (Akram et al., 2018; Sumayya and Raziq, 2019; Bak, 2020). The final hypothesis could hence be framed from the above studies that trust in supervisor could play a mediating role.

H5: Supervisor trust mediates the relationship between authentic servant leadership and burnout (Figure 2).

3. Research Methodology

3.1 Data Collection

Employees working in start-ups in STEM sector have been chosen for the present study. A total of 42 start-ups in science, technology, engineering fields were identified in India and the Human Resource Managers of these firms were contacted and appraised of the research study. All the start-ups were less than 3 years old and each had 15-20 employees on its payrolls. A total of around 670 Questionnaires were sent to employees working in these companies. The employees of these start-ups had by then starting working in hybrid working mode when the study
started, hence they were approached through social networking platforms like LinkedIn, and requested to participate in the study. Snowballing and convenience sample selection has been used for collecting data. Around 640 questionnaires were received duly filled, out of which 586 (91.5%) were deemed to be fit to be considered for data analysis.

3.2 Instruments
Servant leadership is one of the key constructs used in the study. Though several instruments have been designed to observe servant leadership traits, for the purpose of this study, the author has chosen the questionnaire designed by Van Dierendonck and Nuijten (2011). This 30-item instrument (Cronbach’s $\alpha = .941$) measures Servant leadership in 8 dimensions namely – stewardship, courage, standing back, authenticity, humility, empowerment, accountability and forgiveness. In this study, Authentic leadership has been measured using the 16-item instrument designed by Walumbwa et al (2008) with Cronbach’s $\alpha = .944$. This 4-dimensional instrument measures transparency, moral/ethical, balanced processing and self-awareness of the manager. The mediational variable of the study, employees’ trust in their supervisor was measured using the 4-item questionnaire designed by Treadway et al (2004) with Cronbach’s $\alpha = .864$. Broome et al (2009) designed a 6-item instrument (Cronbach’s $\alpha = .800$) for measuring burnout in employees. This self-assessment unidimensional instrument focuses on the employees’ disillusionment, physical exhaustion, depression and feeling of personal accomplishment. All instruments used for the study are on a 5-point Likert scale.

4. Results and Discussion
4.1 Numerical Results
The statistical tool IBM SPSS version 25.0 is used for data analysis in this study. Of the 586 employees, 437 (74.6 %) were of the ages 21 and 30, which only 126 (21.5%) were belonging to the age group 31 to 40. Only 23 of the total 586 were over 41 years (3.9%). This is an interesting observation, as almost 75% of the employees working in start-ups constitute a younger population. The gender constitution of the sample was almost equal, with 273 female employees (46.6%) while 313 (53.4%) were male employees. With respect to employees’ work experience, the total years of experience of the sample ranged from 26 years to employees starting their careers fresh out of college. One more variable which the researcher thought was interesting to be studied is the number of years the employees worked under their present supervisors. Interestingly, the average number of years that the employees worked under their present supervisors was 4 years. These discussions are depicted in the table - Table 1 below:

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>21-30</td>
<td>437</td>
<td>74.6</td>
<td>74.6</td>
<td>74.6</td>
</tr>
<tr>
<td>31-40</td>
<td>126</td>
<td>21.5</td>
<td>21.5</td>
<td>96.1</td>
</tr>
<tr>
<td>41-50</td>
<td>23</td>
<td>3.9</td>
<td>3.9</td>
<td>100.0</td>
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</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>273</td>
<td>46.6</td>
<td>46.6</td>
<td>46.6</td>
</tr>
<tr>
<td>Male</td>
<td>313</td>
<td>53.4</td>
<td>53.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>586</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 2 below depicts the inter correlations between the key constructs – servant leadership, authentic leadership, employee burnout and supervisor trust. From this table it could be observed that burnout is negatively correlated to other variables.
Table 2. Inter-correlations between key constructs

<table>
<thead>
<tr>
<th></th>
<th>Supervisor Trust</th>
<th>Burnout</th>
<th>Authentic Leadership</th>
<th>Servant Leadership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervisor Trust</td>
<td>1</td>
<td>-0.435*</td>
<td>0.641**</td>
<td>0.483**</td>
</tr>
<tr>
<td>Burnout</td>
<td>-0.435*</td>
<td>1</td>
<td>-0.406**</td>
<td>-0.341**</td>
</tr>
<tr>
<td>Authentic Leadership</td>
<td>0.641**</td>
<td>-0.406**</td>
<td>1</td>
<td>0.844**</td>
</tr>
<tr>
<td>Servant Leadership</td>
<td>0.483**</td>
<td>-0.341**</td>
<td>0.844**</td>
<td>1</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.01 level (2-tailed).

In order to understand if there is significant correlation between authentic and servant leadership styles, for them to be used together in analysis, a canonical correlation is performed on these multivariate dimensions. Servant leadership is an eight-dimensional construct with its dimensions being – Standing back, Accountability, Empowerment, Humility, Courage, Forgiveness, Authentic and Stewardship. Authentic leadership is a four-dimensional construct with its dimensions being – Moral ethical values, Balanced Processing, Transparency and Self-Awareness. In SPSS, canonical correlation is performed using the MANOVA syntax. The general fit of the model reporting the four multivariate tests – Pillais, Hotellings, Wilks and Roys is checked and all these tests found to be significant with p<.05. To check the strength of association between the servant and authentic leadership constructs, the eigen values and the canonical correlation co-efficient are observed and found that the first canonical correlation co-efficient is .86118 with an explained variance of 95.9% and the eigen value at 3.086. This indicates that the first hypothesis H1 that servant and authentic leadership styles are significantly correlated to each other has been proved. The below Table 3 depicts the results of MANOVA canonical correlation, with the eigen values of the canonical roots.

Table 3. Canonical Correlation Table

<table>
<thead>
<tr>
<th>Test Name</th>
<th>Value</th>
<th>Approx. F</th>
<th>Hypoth. DF</th>
<th>Error DF</th>
<th>Sig. of F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pillais</td>
<td>0.87779</td>
<td>20.27740</td>
<td>32.00</td>
<td>2308.00</td>
<td>.000</td>
</tr>
<tr>
<td>Hotellings</td>
<td>3.21874</td>
<td>57.58528</td>
<td>32.00</td>
<td>2290.00</td>
<td>.000</td>
</tr>
<tr>
<td>Wilks</td>
<td>0.21565</td>
<td>34.15019</td>
<td>32.00</td>
<td>2118.40</td>
<td>.000</td>
</tr>
<tr>
<td>Roys</td>
<td>0.75548</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Eigenvalues and Canonical Correlations

<table>
<thead>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3.08968</td>
<td>95.99048</td>
<td>95.99048</td>
<td>0.86918</td>
<td>0.75548</td>
</tr>
<tr>
<td>2</td>
<td>0.07497</td>
<td>2.32909</td>
<td>98.31957</td>
<td>0.26408</td>
<td>0.06974</td>
</tr>
<tr>
<td>3</td>
<td>0.03348</td>
<td>1.06810</td>
<td>99.38767</td>
<td>0.18231</td>
<td>0.03324</td>
</tr>
<tr>
<td>4</td>
<td>0.01971</td>
<td>0.61233</td>
<td>100.00000</td>
<td>0.13903</td>
<td>0.01933</td>
</tr>
</tbody>
</table>

As the two constructs are proved to be highly correlational, they are merged as a single construct – Authentic Servant Leadership for the study. This is considered as the independent variable and it is checked whether supervisor trust would effectively mediate the relationship between Authentic servant leadership and employee burnout. Hayes Macro in SPSS is used to check the mediation effect.
The initial results indicate that Authentic servant leadership positively predict supervisor trust with R (.5704) with a significant positive coefficient value of 2.2340 and the confidence intervals are also significant [CI (1.2530, 3.2149), 95%, p < .05]. This proves hypothesis H2. Authentic servant leadership was found to be negatively correlated to employee burnout with correlation co-efficient of -.0624 [CI (-.0747, -.0501), 95%, p < .05], thus proving hypothesis H3. When the results are analyzed to check supervisor trust and burnout relationship, it was observed that supervisor trust significantly decreases the burnout in reporting employees, with correlation co-efficient being -.5545 with confidence intervals [CI (-.7072, -.4019), 95%, p < .05], thus proving hypothesis 4. While analyzing the indirect effects, the results reveal that supervisor trust partially mediates the relationship between authentic servant leadership and employee burnout, with $B = -.0327$ [CI (-.7072, -.4019), 95%, p < .05]. This clearly proves that supervisor trust partially mediates authentic servant leadership and employee burnout, thus proving hypothesis 5 to be true.

The results of the study prove that the proposed leadership style – authentic servant leadership, when adopted by managers, reduce the workplace burnout experienced by employees. The trust employees have in their supervisors, also plays a key role in partially mediating the employee burnout and authentic servant leadership of managers.

4.2 Discussion

The volatile entrepreneurial climate demands a leader with not one specific leadership traits to spearhead the start-ups, but a leader with versatile and multiple leadership traits, adaptable to the situations. The first hypothesis provides evidence that a manager could be trained in two leadership traits, increasing the leadership effectiveness. The development of authentic servant leadership style, and to empirically prove its effectiveness is a significant development of the study. This proves that management development programs could be designed to embrace more than one leadership style. This empirical study has proven that having the right leadership is crucial in paving the way for a healthy workspace. In the second hypothesis, it is evident that employees trust their supervisors, when the latter exhibits authentic servant leadership traits. Authentic servant leaders gain the trust of their reporting employees is apparent from the second hypothesis. The results also convey that workplace burnout is reduced in employees having trust in supervisors, as well as employees who report to authentic servant leaders. A mediation model of these constructs is tested and the results reiterate that supervisor trust would partially mediate the role of authentic servant leaders in mitigating employees’ burnout.

5. Conclusion and future research

The results of this empirical study shed light on start-up environments and leadership research. Amidst the proliferation of leadership research, this paper has made a humble contribution with the study of authentic servant leadership in a start-up environment. The objectives of this paper have been realized by understanding the effectiveness of combining the two leadership styles and appreciating their impact in reducing employee burnout. The results of the present study could be applied in an organizational setting while designing management development programs and leadership workshops for managers. Leadership behaviors comprising of the elements of authentic and servant leadership traits could be taught in these leadership development programs to groom managers to be effective leaders, trained to lead the start-ups to face increasingly competitive the VUCA world. The scope of this paper could be expanded further to other industrial settings and diversified work environments to comprehend the various outcomes of authentic servant leadership such as employee innovative behavior, which are relevant for a start-up culture.

References


**Biography**

**Dr. Divya S** is currently the Assistant Professor, VIT Business School, Vellore Institute of Technology, Chennai, India. She obtained a bachelor’s degree in Electronics/Electrical Engineering at Anna University. After working in Information Technology sector as a programmer for three years, she pursued her academic journey. She later specialized in Human Resource and Systems Management, and obtained both Masters and PhD in the field during 2011 and 2017 respectively. Dr. Divya has been a project engineer in reputed ITES companies in India. She ventured into academia and has over five years of teaching and research experience. Her recent book – “Leadership principles for managers for leading the Indian Information Technology sector” has been well received. She has
published many book chapters and research articles in peer reviewed international Journals and conference proceedings. Dr. Divya is a member of many international societies such as MOBTS (Management and Organizational Behaviour Teaching Society, Australia) and also SOIOP (Society Of Industrial Organizational Psychologists, India). Furthermore, she has supervised several graduate and undergraduate students to successful study completion, and is also supervising research scholars in their doctoral journey. Her research interests include Leadership Psychology, women’s studies, entrepreneurship and organizational sustainability.