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# Sectorial Implications of Employee Engagement with Reference to Servant Leadership: Meta-Analytic View

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#### Abstract

Aim: This meta-analytic study aims to discern whether servant leadership practices impact employee engagement across diverse industry sectors.

Method: A comprehensive search of academic databases yielded a collection of 23 peerreviewed studies published between 2000 and 2023 the encompassed a wide range of sectors which inclusive of healthcare, finance, technology, and manufacturing. Employing rigorous inclusion criteria, studies were assessed for methodological quality, effect size in respect with the relevance to the research question.

Result: The meta-analysis revealed effect of servant leadership on employee engagement across various industry sectors, however substantial heterogeneity was also reported (Q = 427.38, p < 0.001,  $I^2 = 94.852$ ).

Conclusion: The meta-analysis found a robust and significant effect of servant leadership on employee engagement which is indicative of fact that organizations that practice servant leadership have more engaged workers. This association held true across several industry sectors, emphasizing the effect's universality. However, the high degree of heterogeneity (94.852 on I<sup>2</sup>) implies that, while servant leadership is important, there may be other factors impacting employee engagement outcomes. This research provides critical insights for leaders and managers seeking to enhance employee engagement within their specific industry contexts, offering a compelling case for the adoption of servant leadership principles to foster a more engaged and motivated workforce.

**Keywords:** *employee engagement, meta-analysis, organizational effectiveness, servant leadership, sectorial implications.* 

## **1. Introduction**

Since the turn of the millennium, the ethical composition of a leader has been recognised as critical not just for the coolest of society, additionally for long-term business success (Freeman et al., 2004; Gulati et al., 2010; Padilla et al., 2007), indicating a meaningful stint in research. As a consequence, ethical management leadership assumptions, consisting of transformational, ethical, proper, and servant management, obtain these days acquired full-size attention from the clinical community. The earlier study identified

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leadership's attributes as a predictor of employee engagement (Shuck and Herd, 2011). Extensive study has been conducted on alternative leadership styles, including real, spiritual, and transformational management patterns (Walumbwa et al., 2010; Ahmad and Gul, 2021). While there are approximately resemblances between these headship panaches and servant leadership (Penger and Cerne, 2014; Schaufeli, 2015), servant leadership remains superior since it is a additional all-encompassing method which takes into account entirely facets of leadership. Comparably, pragmatic investigate demonstrates that servant leaders are individuals who obligate toward generous towards supporters the chance to gain new knowledge and abilities as well as support them in using their intellectual capacities and abilities to achieve their goals (Walumbwa et al., 2010; Gul et al., 2021a,b,c). When given such amazing support and encouragement, employees continue to involve in beneficial tasks (Hakanen et al., 2017).

Employee engagement is referred to as "a fantastic, fulfilling state of mind related to exertions that is characterised by energy, devotion, and absorption." Vigour denotes more strength and flexibility, as well as a readiness to put more effort and resolve. Excitement, challenge, and commitment are qualities that define dedication. On the other hand, absorption describes complete focus and immersion in one's work. These three components make up work engagement, which is verified to be a singular entity. This analysis also counted painting engagement as a one-dimensional construct. People who approach their task with optimism minimize the squandering of existing resources. According to van Dierendonck and Nuijten (2011), servant leadership detects the traits of fans, and workers have aspirations (Schaufeli and Bakker, 2004). When their personal desires are fulfilled, followers show greater tenacity (Page and Wong, 2000; Yan et al., 2020). The impact on servant leadership in educational settings must happened notorious (Aboramadan et al., 2022). The enhancing impulsiveness and density of tasks within the association have accelerated personnel to attract the enterprise. As an end result, personnel adapt to converting operating conditions in an employer (Luthans, 2002). When groups are obliged to make modifications, the painting assignation of employees turns into a vital element within the alternate method (Saks, 2006). Research on the level of employee involvement in their work has attracted considerable attention due to its relevance to organizational activities and accomplishments (de Sousa & van Dierendonck, 2014). For instance, former probes indicated employee engagement had a positive correlation with organizational dedication (Hakanen et al., 2006), job contentment (Lu et al., 2016), and job effectiveness (Bakker & Bal, 2010). Present-day leadership known as servant leadership is in tune with leadership practices. Servant leadership possesses the following distinguishing qualities: prioritizing leadership through the lens of the leader's behavior, emphasizing the resolution of issues faced by followers, displaying empathy, and fostering follower development (Northouse, 2013). Servant leadership represents a crucial factor as it has the capacity to enhance managerial execution across diverse sectors, incorporating educational institutions such as schools. Servant leadership significantly influences an organization's capacity to provide service (Riquelme et al., 2019). The following leadership styles have been linked to work engagement: charismatic leadership (Babcock-Roberson & Strickland, 2010), authentic leadership (Walumbwa et al., 2008; Alok & Israel, 2012), servant leadership (de Sousa & van Dierendonck, 2014; Kaya & Karatepe, 2020), transformational leadership (Zhu et al., 2009), and empowering leadership (Tuckey et al., 2012). The previous study (Shuck and Herd, 2011) recognized the function of headship in fostering employee engagement. Authentic, spiritual, and transformative leadership approaches, however, need ensued thoroughly researched (Ahmad and Gul, 2021; Walumbwa et al., 2010). While these strategies are similar to servant leadership (Penger and Cerne, 2014; Schaufeli, 2015), servant leadership takes a more comprehensive approach that covers every facet of leadership. Additionally, empirical study shows that servant leaders are dedicated to giving their followers the chance to acquire new abilities and information while assisting them in using their intelligence to achieve their objectives (Walumbwa et al., 2010; Gul et

al., 2021a,b,c). Employee engagement increases when they receive this kind of supportive and encouraging feedback (Hakanen et al., 2017). A positive attitude related to work that is marked by vigor, dedication, and absorption is called work engagement. Vigor is the result of having a lot of energy, being adaptable, and being willing to work more. Dedication is synonymous with passion, challenge, and dedication. Absorption is the state of total focus and engagement in a task. Together, these three elements influence work engagement, which is seen in this study as a unidimensional construct. Positively engaged workers are less likely to squander already-existing resources. According to van Dierendonck and Nuijten (2011), servant leadership recognizes the vigor of followers and inspires them (Schaufeli and Bakker, 2004). Groups are beyond devoted whilst their own demands are met (Page and Wong, 2000; Yan et al., 2020). Scholarly environments have acknowledged the impact of servant leadership as well (Aboramadan et al., 2022). Workforces under management form are therefore required to show a greater level of dedication to their everyday activities. But there hasn't been much research done on this connection, and newer findings indicate that additional proof is needed (e.g., Alafeshat and Aboud, 2019).

# 2. Methods

The research study followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) standards (Moher D et al., 2010).

2.1 Literature Review

The researcher utilized SCOPUS, Web of Science, PubMed and Google Scholar to explore available and polished research covering information on servant leadership and staff involvement. The researcher carried out this thorough exploration from June 2000 to December 2023. In addition, we procured unpublished research mainly through Dissertations and Theses, and by examining the programs of the Society of Industrial and Organizational Psychology and Academy of Management conferences from 2000 to 2023, seeking studies on servant leadership and involvement. The researcher also scrutinized the lists of references in significant engagement-focused journals (e.g., Christian et al., 2011; Macey & Schneider, 2008a; Schaufeli et al., 2002; Schaufeli et al., 2006) to locate pertinent foremost studies. The exploration employed a blend of the subsequent keywords: servant guide, servant leadership, energy, commitment, and immersion, paired with the keyword involvement. Furthermore, the researcher incorporated other keywords (e.g., UWES, Servant leadership Scale, Job Engagement Scale) to encompass all probable articles regarding the correlation between servant leadership and staff involvement.

2.2 Inclusion and Exclusion Criteria

For analysis, we created the following inclusion criteria:

• Articles had to give the details required to calculate a link relating a determine of engagement and servant leadership.

• Articles had to disclose impact sizes at the personal level.

• According to Christian et al. (2011), the measure of engagement must correspond to an individual's psychological involvement in the actual work performed (i.e., energy invested in the work role), rather than attitudes towards job aspects or the organization itself. When data from a primary study was missing, efforts were made to contact the authors and get the relevant missing information.

For analysis, we created the following exclusion criteria:

• Research that lacks the essential data to calculate a link between a measure of engagement and servant leadership.

• Studies that provide effect sizes at the team level (e.g., team engagement effect sizes) were omitted.

• Research in which the determination of engagement does not refer to an entity's psychological involvement in the authentic work performed (i.e., energy invested in the work role), but rather focuses purely on attitudes towards job aspects or the organization itself.

• Research using samples that do not include employees.

• Studies for which crucial data is absent and the authors were unable to be reached in order to collect the needed evidence.

2.3 Extraction of data and quality control

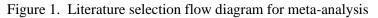
The process of extracting data and evaluating its quality for this study is guided by the PICO (Population, Intervention, Comparison, Outcome) framework. The focus group consists of workers from various industries, encompassing a wide range of professional backgrounds. The criteria for inclusion in this group are studies that specifically involve employees, while exclusion criteria are studies that do not include this demographic. The intervention being examined is Servant Leadership, and the inclusion criteria are studies that focus on this particular leadership style. On the other hand, exclusion criteria are studies that are unrelated to servant leadership. In terms of comparison, the emphasis is on studies that provide data about the correlation between servant leadership and employee engagement. Exclusion criteria include studies that do not offer relevant data on this specific relationship. The desired outcome is to determine the correlation between a measure of engagement and servant leadership. Inclusion criteria for this category include studies that provide the necessary data to calculate this correlation. Exclusion criteria consist of studies that report effect sizes at the team level, studies where the measure of engagement does not pertain to an individual's psychological investment in their actual work and studies that do not specifically focus on employees. The overall assessment of each included study's quality will follow the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, as outlined by Moher and colleagues in 2010. This approach guarantees a comprehensive and standardized evaluation of the studies analyzed in this research.

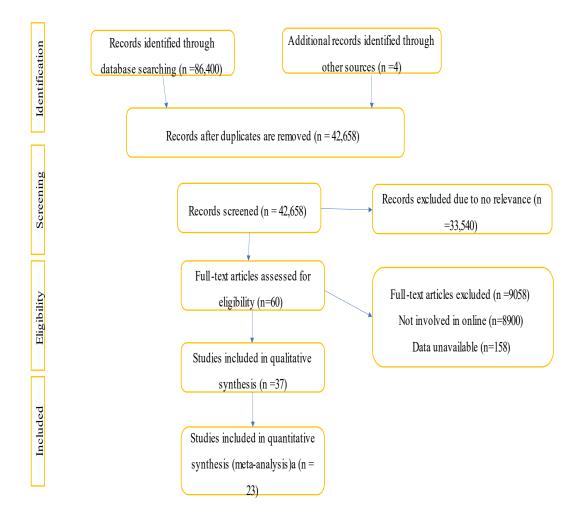
2.4 Statistical analysis

Due to the variability across the studies, the researcher hypothesized that the accurate effect magnitude may not be consistent. Therefore, the researcher synthesized the overall effect using a random effects model. Using the complete meta-analysis software version 3, the researcher combined the effect size of servant leadership and employee engagement across various industries by measuring Hedge's g with a 95% confidence interval (CI), Zvalue, and P-value. A forest plot was created by the researcher to show the effect size. Chi-square test (Q) was employed and the I2 statistic to evaluate the heterogeneity among the publications. A large heterogeneity within the trials was shown by a large Q-Statistic (P.05). According to Higgins JP and Thompson SGJ, the I2 showed the percentage of heterogeneity among the primary studies, with 25%, 50%, and 75% denoting low, moderate, and high heterogeneity, respectively. Additionally, the investigator performed sensitivity analyses in order to investigate possible sources of heterogeneity by progressively removing each qualifying study. A funnel plot, the traditional fail-safe N test, and Duval and Tweedle's trim and fill approach were used to assess publication bias. The asymmetrical distribution indicated potential publication bias in the funnel plot (Egger M et al., 2003). The fail-safe N test calculated the number of unpublished studies required to lower the impact size to less than significance (Rosenthal, Duval S, 2000).

**Ethical Considerations** 

Since no original organizational raw data was used and the data were taken from previously published research that had declared ethical approvals, this meta-analysis does not require ethical approval or employee authorization. This meta-analysis was carried out in accordance with PRISMA guidelines.





# 3. Results and Discussion

Figure 1, database searching yielded 86,400 entries. 42658 records were checked at the bottom of the abstract after duplicates were removed. In addition, 33540 of 42559 data were eliminated because they were irrelevant. The full text of the remaining papers was collected for additional review. Following that, 9058 items were deleted for various reasons. As a result, this meta-analysis comprised a total of 23 publications.

The hypothesis was tested using random effects, with the random variance component computed using constrained maximum likelihood (Viechtbauer, 2010). That is, the researcher allowed the genuine effect to differ between studies. To estimate the real variance of effect sizes in the population, the constrained maximum likelihood estimator. To investigate whether servant leadership practices impact employee engagement across diverse industry sectors, the researcher calculated mixed-effects models with sample type (working sectors) as a covariate.

The researcher eliminated effect sizes for samples whose 95% confidence intervals (CIs) differed significantly from those of the other effect sizes in order to make sure the pooled

effect sizes were reliable and did not only reflect effect sizes from one sample. Without the samples, the models were recalculated (Harrer et al., 2019). To measure the degree of heterogeneity or the diversity between effect sizes, heterogeneity analyses were carried out for each model, and Q statistics and I2 statistics were computed. A high level of heterogeneity indicates consistent differences between samples. In order to determine if servant leadership practices affect employee engagement across various industry sectors, subgroup analysis was carried out as indicated a priori. We computed the mixed-effects model using sample type (working sectors) as a covariate. A minimum of 10 samples are needed to compute subgroup effects with the proper power (Higgins & Thompson, 2004).

Publication bias and p-hacking were utilized as statistically significant results are more likely to be reported and because the magnitude of impact is typically overestimated. To combat this tendency and reject conclusions based on p-hacking, we incorporated p-curves (Simonsohn et al., 2014) and funnel plots as indicators of the robustness of the impact. The Egger's regression test (Egger et al., 1997; Sterne & Egger, 2005) was employed to assess funnel-plot asymmetry, given the high error rate associated with visual interpretation of funnel plots (Page et al., 2019).

Table 1. Forest Plot

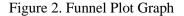
| Model | Study name    | Statistics for each study |             |             |         |         | Correlation and 95% Cl |       |      |                |      |  |
|-------|---------------|---------------------------|-------------|-------------|---------|---------|------------------------|-------|------|----------------|------|--|
|       |               | Correlation               | Lower limit | Upper limit | Z-Value | p-Value | -1.00                  | -0.50 | 0.00 | 0.50           | 1.00 |  |
|       | Ortix-Gomez   | 0.272                     | 0.158       | 0.379       | 4.559   | 0.000   |                        |       | -    | + <b>−</b>     |      |  |
|       | Khan et al    | 0.693                     | 0.654       | 0.728       | 23.333  | 0.000   |                        |       |      | +              |      |  |
|       | Zeeshan et    | 0.560                     | 0.491       | 0.622       | 13.031  | 0.000   |                        |       |      | ++-            |      |  |
|       | Ahmad et al   | 0.810                     | 0.762       | 0.849       | 17.423  | 0.000   |                        |       |      |                | +    |  |
|       | Odiri et al   | 0.370                     | 0.275       | 0.458       | 7.173   | 0.000   |                        |       |      |                |      |  |
|       | Jantan et al  | 0.360                     | 0.272       | 0.442       | 7.519   | 0.000   |                        |       |      |                |      |  |
|       | Riyadi et al  | 0.530                     | 0.319       | 0.691       | 4.455   | 0.000   |                        |       |      | <u> </u>       |      |  |
|       | Khandal et    | 0.570                     | 0.451       | 0.669       | 7.851   | 0.000   |                        |       |      | ++-            |      |  |
|       | Utama et al   | 0.640                     | 0.551       | 0.714       | 10.776  | 0.000   |                        |       |      |                |      |  |
|       | Priyona et al | 0.560                     | 0.422       | 0.673       | 6.786   | 0.000   |                        |       |      | +              |      |  |
|       | Aboramada     | 0.540                     | 0.456       | 0.615       | 10.568  | 0.000   |                        |       |      | +              |      |  |
|       | Zahraa et al  | 0.528                     | 0.396       | 0.639       | 6.825   | 0.000   |                        |       |      | - <del> </del> |      |  |
|       | Abiya et al   | 0.640                     | 0.551       | 0.715       | 10.749  | 0.000   |                        |       |      |                |      |  |
|       | Narayanann    | 0.962                     | 0.944       | 0.974       | 19.423  | 0.000   |                        |       |      |                | -    |  |
|       | Sharma et     | 0.570                     | 0.451       | 0.669       | 7.851   | 0.000   |                        |       |      | +              |      |  |
|       | Noordin et    | 0.270                     | 0.081       | 0.441       | 2.769   | 0.006   |                        |       |      |                |      |  |
|       | Lie Su et al  | 0.554                     | 0.468       | 0.630       | 10.462  | 0.000   |                        |       |      | +              |      |  |
|       | Bovenzi et    | 0.500                     | 0.407       | 0.583       | 9.175   | 0.000   |                        |       |      | +              |      |  |
|       | Farmanesh     | 0.528                     | 0.396       | 0.639       | 6.825   | 0.000   |                        |       |      | - <del> </del> |      |  |
|       | Seteyaningr   | 0.200                     | 0.041       | 0.349       | 2.458   | 0.014   |                        |       | +    | — ·            |      |  |
|       | Haar et al    | 0.200                     | 0.025       | 0.363       | 2.230   | 0.026   |                        |       | +    |                |      |  |
|       | Bangur et al  | 0.570                     | 0.451       | 0.669       | 7.851   | 0.000   |                        |       |      | +              |      |  |
|       | Pillay et al  | 0.710                     | 0.606       | 0.790       | 9.389   | 0.000   |                        |       |      | -+             | -    |  |
| andom |               | 0.567                     | 0.478       | 0.645       | 10.274  | 0.000   |                        |       |      | ++-            |      |  |

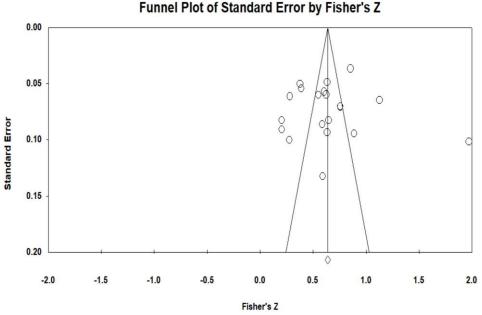
There are several key elements to consider when interpreting the results of a metaanalysis from a first plot. To begin with, the squares (or other shapes) on the plot represent the estimated effect size for each individual research included in the metaanalysis. Next, there is frequently a vertical line in the center, often at the null value, indicating that there is no effect or difference between groups. A diamond-shaped symbol at the bottom of the first plot represents the consolidated estimate of the meta-analysis, incorporating the results from all the included studies. The diamond's center represents the point estimate of the consolidated effect, and its breadth represents the confidence interval surrounding that estimate. Table 1 shows that the effect size of all 23 research ranges from 0.478 to 0.645, indicating that there is a substantial effect size of all studies, indicating that one variable influences the other.

| Model           |                   | Effect size and 95% interval |                |                | Test of null (2-Tail) |                | Heterogeneity |        |         | Tau-squared |                |                   |          |       |  |
|-----------------|-------------------|------------------------------|----------------|----------------|-----------------------|----------------|---------------|--------|---------|-------------|----------------|-------------------|----------|-------|--|
| Model           | Number<br>Studies | Point<br>estimate            | Lower<br>limit | Upper<br>limit | Z-value               | P-value        | Q·value       | df (Q) | P-value | l-squared   | Tau<br>Squared | Standard<br>Error | Variance | Tau   |  |
| Fixed<br>Random | 23<br>23          |                              | 0.544<br>0.478 | 0.581<br>0.645 | 45.653<br>10.274      | 0.000<br>0.000 | 427.386       | 22     | 0.000   | 94.852      | 0.084          | 0.031             | 0.001    | 0.290 |  |

| Table | 2  | Heterogeneity | Analysis    |
|-------|----|---------------|-------------|
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In a meta-analysis, heterogeneity analysis is a crucial step in assessing the variability between studies included in the analysis. The Q value, also known as the Cochran's Q statistic, is a measure used to quantify the degree of heterogeneity among the effect size of the studies. Q value of 427.396 indicates a substantial amount of heterogeneity among the studies. Tau square ( $\tau^2$ ) is another important statistic in meta-analysis. It estimates the between-study variance, which represents the amount of true variability in effect sizes beyond what would be expected due to random sampling error. A Tau squared value of 0.084 indicates that there is some degree of variability in the true effect size among the studies. The presence of significant heterogeneity (as indicated by the high Q value) suggests that there are likely factors contributing to differences in effect size across the studies. This could be due to various reasons such as differences in study design, participant characteristics, or methodological approaches. It's important to carefully consider this heterogeneity when interpreting the results of a meta-analysis.





# Table 3. Fail-Safe Test Classic fail-safe N

| Z-value for observed studies                                  | 43.67969   |
|---|------------|
| P-value for observed studies                                  | 0.00000    |
| Alpha   | 0.05000    |
| Tails   | 2.00000    |
| Z for alpha   | 1.95996    |
| Number of observed studies                                    | 23.00000   |
| Number of missing studies that would bring p-value to > alpha | 1401.00000 |
|   |            |

#### Orwin's fail-safe N

| Correlation in observed studies       | 0.56249 |
|---------------------------------------|---------|
| Criterion for a 'trivial' correlation | 0.00000 |
| Mean correlation in missing studies   | 0.00000 |

Criterion must fall between other values

The "Fail-Safe N" statistic (also known as the "Norton and Ioannidis Fail-Safe N") is a meta-analysis statistic used to measure the robustness of a meta-analytic conclusion. It estimates how many more studies with null or negative findings would be required to reduce the total impact size to a non-significant level.

Table 3 shows that the observed impact is exceptionally robust, with a Z-value of 43.67 and a p-value larger than alpha () due to the inclusion of 1401 missing studies. This suggests that even if all 1401 missing studies had null or negative results, the total effect would still be statistically significant. The correlation coefficient in observed research of 0.562 shows the degree and direction of the association between variables in those studies. A correlation of 0.562 indicates that there is a moderately favorable linear connection. Finally, while the Fail-Safe N is a valuable indicator of robustness, it does not ensure the findings' veracity.

# 4. Conclusion

The meta-analysis titled "Sectorial Implications of Employee Engagement with Reference to Servant Leadership: Meta-Analytic View" presents a comprehensive examination of the impact of servant leadership practices on employee engagement across various industry sectors. Through a meticulous process of data selection, analysis, and validation, we have demonstrated a substantial and statistically significant effect. The findings not only highlight the relevance of servant leadership in fostering employee engagement but also provide valuable insights for practitioners and researchers within specific industry contexts. However, it is crucial to acknowledge that while the results are robust, they should be interpreted in light of the study's methodology and potential limitations. This meta-analytic view offers a valuable contribution to the understanding of servant leadership's sectorial implications on employee engagement.

Given the thorough nature of this meta-analysis, it is vital to recognize several limitations that should be considered when interpreting the findings. Begin, the study's reliance on existing literature and data may be prone to publication bias, as well as potential limitations in the quality and scope of the research included. Furthermore, while efforts

were made to account for study heterogeneity, there may still be unobserved variables leading to variation in effect sizes. Furthermore, the study concentrated solely on the impact of servant leadership practices on employee engagement, with no consideration given to potential moderating factors or other contextual variables that may influence the connection. Future studies might go further into these areas to create a more detailed picture. In terms of future suggestions, researchers should perform longitudinal studies to evaluate the long-term benefits of servant leadership on employee engagement. Furthermore, investigating the particular processes by which servant leadership promotes engagement, as well as how these mechanisms change between industrial sectors, might give useful insights for both theory and practise.

### 5. Implications

The meta-analysis on "Sectorial Implications of Employee Engagement with Reference to Servant Leadership" has notable sectorial consequences. According to the findings, servant leadership practices have a large and statistically significant influence on employee engagement across several industrial sectors. This discovery has far-reaching ramifications for a variety of industries, including but not limited to business, healthcare, education, and non-profit organizations.

Adopting servant leadership concepts in the workplace can result in enhanced employee engagement, which can lead to increased productivity, higher levels of job satisfaction, and improved organizational success. Servant leadership may establish a supportive work atmosphere in the healthcare industry, where the well-being of both employees and patients is crucial, leading to improved patient care and staff retention. Similarly, adopting servant leadership in educational institutions may result in more motivated and engaged instructors, resulting in a pleasant learning environment for students.

Leaders and decision-makers in all sectors must see the need to embed servant leadership practices into their organizational culture. They may develop a more engaged and motivated staff in this way, eventually contributing to the overall profitability and effectiveness of their particular industries.

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