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Exploring the Impact of Leadership Style on Millennial and Gen Z Engineers: A Study of Motivation, Productivity, and Loyalty in the Modern Technical Workforce

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Abstract- ***This study explores how transformational, transactional, and servant leadership styles influence the motivation, productivity, and loyalty of Millennial and Generation Z engineers in the modern technical workforce. Findings show that transactional leadership is the most commonly practiced style, while transformational leadership most strongly enhances motivation and loyalty. Transactional leadership best supports productivity, and servant leadership fosters loyalty through empathy and collaboration. The study concludes that combining transformational inspiration, transactional structure, and servant empathy is essential for effectively leading today's engineering professionals.***

Index Terms- ***Leadership style, Motivation, Productivity, Millennials, Generation Z, Engineers.***

I. INTRODUCTION

Leadership plays a crucial role in influencing how individuals perform, stay motivated, and commit to their organizations. In the engineering profession, where innovation, collaboration, and problem-solving are key, effective leadership is essential for achieving both individual and organizational success. However, the rise of Millennials and Generation Z in the workforce has introduced new expectations and challenges for leaders. These generations bring different perspectives, emphasizing open communication, flexibility, inclusion, and personal growth over the traditional, hierarchical leadership approaches that once dominated workplaces.

As technology evolves and engineering practices become more dynamic, leaders must adapt their methods to meet the needs of this changing workforce. Millennials often seek meaningful work that aligns with their values and allows for creativity and growth, while Generation Z tends to prioritize stability, diversity, and a sense of purpose in their professional lives. These differences require leaders to adopt styles that inspire, empower, and engage their team members beyond traditional management techniques.

Among the most recognized leadership styles in modern organizations are transformational, transactional, and servant leadership. Transformational leaders focus on vision, inspiration, and personal development; transactional leaders emphasize structure, accountability, and performance rewards; and servant leaders prioritize empathy, service, and the well-being of their team members. Each approach offers unique strengths, but their effectiveness may vary depending on the values and expectations of younger professionals.

Despite growing discussions about generational change in the workplace, there remains a lack of research specifically examining how leadership styles affect the motivation, productivity, and loyalty of Millennial and Gen Z engineers. This study seeks to fill that gap by exploring how these leadership styles shape the attitudes and performance of younger engineers in today's technical environment. The findings aim to provide insights that can help engineering leaders and organizations create supportive, engaging, and future-ready workplaces.

1.1 Rationale of the Study

The increasing presence of Millennials and Generation Z in the engineering workforce has reshaped how organizations must approach

leadership and management. These generations bring different motivations, values, and expectations compared to older cohorts. They seek leaders who are transparent, collaborative, and empathetic—leaders who not only provide direction but also offer purpose, support, and opportunities for personal and professional growth. However, many engineering organizations still rely on traditional leadership styles that may not fully resonate with the mindset of these younger professionals.

Leadership is a determining factor in employee engagement, job satisfaction, and long-term organizational success. Transformational leadership can inspire innovation and loyalty by motivating employees to achieve shared goals. Transactional leadership, while more structured, can effectively enhance productivity through clear expectations and reward systems. Servant leadership emphasizes empathy and support, fostering strong relationships and team trust. Understanding how these leadership styles influence motivation, productivity, and loyalty is critical for leaders aiming to create workplaces that align with the needs of today's engineering professionals

This study is important because it bridges the gap between traditional leadership approaches and the evolving expectations of the new generation of engineers. By examining how transformational, transactional, and servant leadership styles impact younger engineers, the research provides valuable insights that can guide organizations in improving their leadership practices. The results aim to help engineering managers and leaders build work environments that inspire creativity, improve performance, and encourage long-term commitment among Millennial and Gen Z employees. Ultimately, the study contributes to developing leadership strategies that can sustain innovation and workforce satisfaction in the modern technical world.

1.2 Review of Related Literature and Studies

It has long been known that a leader's style has a major impact on employee motivation, behavior, and overall performance. The contrast between transformational and transactional leadership is one of the most widely discussed frameworks. Transformational leaders inspire their followers by promoting creativity, setting a clear vision, and providing individualized support, which helps develop intrinsic motivation and innovation. In contrast, transactional leaders focus on structure, goals, and performance-based rewards or corrections. Although both styles can be effective, research shows that transformational leadership is most suitable for fast-paced and innovation-driven environments such as engineering (Bass & Avolio, 1994; Northouse, 2021).

With the increasing number of Millennial and Generation Z professionals in the engineering field, leadership approaches are being re-examined. These generations have different values compared to their predecessors—Millennials value meaningful work, collaboration, and flexibility, while Gen Z emphasizes digital fluency, inclusion, and job security. Scholars such as Dimock (2019) and Stillman & Stillman (2017) note that leaders must now be more adaptive, empathetic, and responsive to individual needs to effectively guide younger employees.

Both intrinsic and extrinsic factors influence motivation in engineering work. Engineers are often driven by challenging tasks, opportunities for creativity, and problem-solving, while external rewards such as recognition and career growth also play key roles. Amabile (1998) and Herzberg (1966) found that leadership and workplace conditions are vital to maintaining motivation and satisfaction, particularly in technical and innovation-based professions.

1.3 Statement of the Problem / Research Problem

This study aims to explore how different leadership styles influence the motivation, productivity, and loyalty of Millennial and Generation Z engineers in the modern technical workforce. Specifically, it investigates the perceived impact of transformational, transactional, and servant leadership styles on young engineering professionals, considering their generational values, workplace expectations, and the demands of engineering roles. To address this overarching problem, the study seeks to answer the following specific questions:

1. What is the demographic profile of the respondents in terms of:

1.1 Age
1.2 Gender
1.3 Industry/Field of Engineering

1.4 Years of Work experience

2. What is the level of exposure of Millennial and Gen Z engineers to different leadership styles (transformational, transactional, and servant leadership)?
3. How do Millennial and Gen Z engineers perceive the characteristics and effectiveness of each leadership style in their workplace?
4. How do these leadership styles influence the respondents' levels of:
   4.1 Motivation
   4.2 Productivity
   4.3 Organizational Loyalty
5. What are the perceived strengths and weaknesses of each leadership style in terms of supporting the career growth and job satisfaction of Millennial and Gen Z engineers?
6. Which leadership style do the respondents consider most effective in enhancing their engagement, innovation, and long-term commitment to their organization?

1.4 Significance of the Study

This study holds significant value in the context of an evolving workforce, where Millennials and Generation Z professionals are becoming the dominant demographic in engineering and other technical fields. As their values, motivations, and expectations differ from those of previous generations, understanding how leadership styles affect their performance and retention is crucial for organizations aiming to remain competitive and innovative.

The findings of this study can provide actionable insights to help leaders tailor their leadership approaches—particularly transformational, transactional, and servant leadership styles—to better engage younger engineers. This may lead to improved motivation, productivity, and organizational loyalty, ultimately benefiting overall team performance and long-term workforce stability Additionally, this study can assist HR departments in designing leadership development programs and organizational policies that align with the preferences and needs of Millennial and Gen Z employees. It may also inform strategies for talent retention and employee satisfaction within highly technical environments.

For engineering managers and leaders, the results offer practical guidance to adjust leadership strategies to better resonate with younger professionals. By fostering increased motivation and loyalty, organizations can achieve stronger team cohesion and sustainable workforce growth.

From an academic and industry research perspective, this study adds to the growing body of literature on generational dynamics and leadership, particularly within the engineering and technology sectors. It provides a contemporary understanding of how leadership can evolve to support the unique characteristics and expectations of the next generation of professionals.

By emphasizing how various leadership philosophies impact Millennial and Gen Z engineers' work experiences, the study may enable young professionals to better understand their own needs and preferences in the workplace and to push for environments and leadership that promote their development and well-being.

1.5 Scope and Limitation of the Study

This study focuses on exploring the impact of three specific leadership styles—transformational, transactional, and servant leadership—on the motivation, productivity, and organizational loyalty of Millennial and Generation Z engineers.

The scope of the research is limited to engineers currently employed in various engineering and technical sectors in the Philippines, including civil, mechanical, electrical, software, and other engineering professions. The target population consists of Millennials (ages 29–44) and Generation Z (ages 18–28) professionals, as defined by widely accepted generational classifications. Respondents may be working in office-based, hybrid, or fully remote environments, reflecting the evolving nature of modern work settings.

The study will utilize a quantitative descriptive-correlational research design, employing self-administered online surveys to collect data. Approximately 50 to 100 participants will be recruited through purposive and convenience sampling. The data collection will rely on self-reported responses regarding participants' exposure to leadership styles and their perceived levels of motivation, productivity, and organizational loyalty.

1.6 Definition of Terms

To better understand the context of this study, the following terms and concepts are defined:

Engineering Workforce. Professionals engaged in engineering roles across various industries who apply scientific and technical knowledge to solve problems and create innovations.

Generation Z. Individuals born between 1997 and 2004, currently aged approximately 18 to 28, representing the younger segment of the workforce in this study.

Leadership Style. Refers to the manner and approach a leader uses to guide, motivate, and manage their team. This study focuses on three specific styles: transformational, transactional, and servant leadership.

Millennials. Individuals born between 1981 and 1996, currently aged approximately 29 to 44, who are part of the workforce being studied.

Motivation. The internal drive or external factors that stimulate employees to perform their work tasks with enthusiasm and commitment.

Organizational Loyalty. The degree of commitment and attachment an employee feels toward their employer, influencing their intention to stay with the company.

Productivity. The efficiency and effectiveness with which engineers complete their assigned tasks and contribute to organizational goals.

Servant Leadership. A leadership style where the leader prioritizes serving the needs of employees, fostering a supportive environment, and promoting personal growth.

Transactional Leadership. A leadership approach based on structured tasks, rewards, and corrective actions focused on performance and goal achievement.

Transformational Leadership. A leadership style characterized by inspiring and motivating employees to exceed expectations through vision, intellectual stimulation, and individualized consideration.

II. RESEARCH METHODOLOGY

2.1 Research Design

This study employs a quantitative descriptive-correlational research design to investigate the relationship between leadership styles and the motivation, productivity, and organizational loyalty of Millennial and Generation Z engineers. The descriptive aspect of the study aims to outline the demographic characteristics of the respondents and their exposure to various leadership styles, while the correlational component seeks to determine the strength and nature of the relationship between these leadership styles and the respondents' motivation, productivity, and loyalty.

This design is suitable for understanding naturally occurring variables in real-world settings, without manipulation. It provides the foundation for statistically analyzing patterns and determining whether associations exist between leadership approaches and workplace outcomes among young professionals in the engineering sector.

2.2 Locale of the Study

The study was conducted among professionals from various engineering fields, including civil, mechanical, electrical, industrial, etc. The respondents came from both public and private organizations, representing different types of technical and engineering workplaces.

Participants were selected from a mix of office-based, hybrid, and remote environments to capture a comprehensive view of modern work settings. This diversity allowed the study to better understand how leadership styles influence motivation, productivity, and loyalty in different engineering contexts.

By focusing on respondents from multiple engineering disciplines, the study aimed to provide a well-rounded perspective on how transformational, transactional, and servant leadership styles affect younger professionals in the technical workforce.

2.3 Population and Sampling Procedure

The target population of the study consists of engineers belonging to the Millennial (ages 29–44) and Generation Z (ages 18–28) cohorts who are currently employed in various engineering fields such as civil, mechanical, electrical, industrial, etc.

These individuals represent the modern technical workforce actively engaged in engineering-related roles across different organizations.

A purposive-convenience sampling technique was utilized to identify and select qualified respondents. This method ensured that only participants who met the inclusion criteria—specifically, currently employed engineers within the defined age groups—were included in the study. It also allowed for efficient data collection by reaching participants who were accessible and willing to take part in the research.

2.4 Research Instrument

The research instrument is a short questionnaire consisting of four parts of data collection. The first part is identifying the respondent's demographic profile such as age, gender, their field of work, and years of working experience. The second part of the instrument is a single of question which leadership styles has the respondents experienced beforehand or currently. Part three of the instrument is the respondents' perception of the leadership styles, as to whether they had seen or experienced the leadership style from their leaders. The fourth part of the instrument is identifying which if the leadership styles have impacted the respondents' motivation, productivity, and their organizational loyalty. The final part of the instrument is the respondents' evaluation and preferences among leadership styles.

2.5 Data Gathering Procedure

The researchers prepared a structured questionnaire composed of four main sections: demographic information, exposure to different leadership styles, perceptions of leadership practices, and the perceived effects of these leadership styles on motivation, productivity, and organizational loyalty. Before distribution, the questionnaire was carefully reviewed to ensure clarity, accuracy, and alignment with the study's objectives.

The survey was distributed electronically through professional networks and online engineering communities. Participation was strictly voluntary, and respondents were informed that all information provided would remain confidential and be used solely for academic purposes. Responses were automatically recorded and stored in a secured database for organization, tabulation, and analysis.

To maintain the integrity of the data collection process, only respondents who met the inclusion criteria—Millennial and Generation Z engineers currently employed in various engineering fields—were included in the study. Once sufficient responses were gathered, the collected data were encoded and subjected to appropriate statistical treatment for interpretation and analysis.

2.6 Data Analysis Technique

The data gathered from the survey questionnaires were tabulated, organized, and subjected to statistical treatment to address the research objectives. For the Likert-scale items measuring Transformational, Transactional, and Servant Leadership, the responses were computed for their mean scores per question. These mean values were then averaged to determine the overall perception score for each leadership style.

For the items on motivation, productivity, and loyalty, which asked respondents to identify the leadership style that most positively influenced each factor, the data were analyzed using frequency counts and percentage distribution. This approach allowed the researchers to determine which leadership style was most frequently associated with each outcome variable.

Descriptive statistics such as the mean, frequency, and percentage were used as the primary analytical tools, as these provided a straightforward means of summarizing the data and aligning it with the study's objective of exploring the impact of leadership styles on Millennial and Gen Z engineers.

2.7 Ethical Consideration

This study adhered to ethical research standards in ensuring the safety, rights, and confidentiality of all respondents. Participation was voluntary, and respondents were informed about the purpose of the research before completing the survey. Informed consent was obtained, and participants were assured that their responses would be used solely for academic purposes

Confidentiality and anonymity were maintained by not collecting identifying personal information. All data gathered were stored securely and reported in aggregated form to prevent any disclosure of individual responses. Respondents were also given

the freedom to decline participation or withdraw at any point during the study without any consequence.

The study avoided any form of deception, coercion, or harm to participants. Overall, ethical integrity was upheld to ensure that the research was conducted responsibly and respectfully.

III. RESULT AND DISCUSSION

A total of 77 respondents participated in the study, representing Millennial and Generation Z engineers from various fields such as civil, mechanical, electrical, industrial, and other related disciplines.

The findings reveal distinct patterns regarding how these engineers perceive different leadership styles. Among the three styles examined, Transactional Leadership obtained the highest overall mean score (4.13), indicating that it is the most prominently observed leadership style in the respondents' workplaces. This suggests that many leaders emphasize clear structures, defined expectations, and performance-based rewards to guide their teams. Transformational Leadership followed with a mean score of 3.92, reflecting the value respondents place on inspiration, vision, and motivation. Meanwhile, Servant Leadership had the lowest mean score (3.67), implying that leaders may be less focused on prioritizing employee well-being and empowerment compared to the other two styles.

When examining the impact of these leadership styles on work outcomes, a nuanced pattern emerged. In terms of motivation, most respondents identified Transformational Leadership (46.7%) as the most influential, supporting existing studies that highlight the ability of transformational leaders to inspire and energize their teams through encouragement and vision. For productivity, Transactional Leadership (38.7%) was rated highest, suggesting that a structured, goal-oriented approach enhances task performance and efficiency. In terms of loyalty, Transformational Leadership (50.7%) was once again the most frequently selected, indicating that leaders who inspire trust and establish meaningful relationships are more likely to foster long-term commitment among employees.

Overall, the results suggest that while Transactional Leadership is the most commonly observed in engineering workplaces, Transformational Leadership has a stronger positive influence on motivation and loyalty. This indicates that although transactional approaches may drive short-term productivity, transformational qualities are more effective in sustaining motivation and long-term engagement. Servant Leadership, though rated lowest, still demonstrated relevance, particularly in fostering supportive relationships and a sense of belonging—areas that may warrant further exploration in future studies.

IV. FINDINGS AND CONCLUSION

4.1 Findings

The study examined the impact of Transformational, Transactional, and Servant Leadership on Millennial and Gen Z engineers with respect to their motivation, productivity, and loyalty. The major findings are:

a. Perceived Leadership Style

- Transactional Leadership received the highest overall mean score (4.13), indicating it is the most prominently perceived leadership style.
- Transformational Leadership followed with a mean score of 3.92.
- Servant Leadership had the lowest mean score of 3.67.

b. Motivation The majority of respondents (46.7%) identified Transformational Leadership as the style that most positively affects their motivation. This was followed by Transactional Leadership (28%) and Servant Leadership (25.3%).

c. Productivity

With respect to productivity, Transactional Leadership was identified as the most influential (38.7%). Transformational Leadership was selected by 33.3% of respondents, while Servant Leadership accounted for 28%.

d. Loyalty

In terms of loyalty, Transformational Leadership was chosen by the highest proportion of respondents (50.7%). This was followed by Servant Leadership (37.3%), with Transactional Leadership receiving the lowest proportion (12%).

4.2 Conclusion

The findings of this study demonstrate that leadership style plays a significant role in shaping the workplace experiences of Millennial and Gen Z engineers, particularly in terms of their motivation, productivity, and loyalty. Among the three leadership styles examined—Transformational, Transactional, and Servant Leadership—Transactional Leadership emerged as the most dominant overall, as reflected in its highest mean score across the survey items. This suggests that respondents perceive transactional leaders, who emphasize structure, clear expectations, and rewards, as more prevalent in their work environment.

However, when examined in relation to specific outcomes, the results reveal more nuanced patterns. Transformational Leadership was most frequently identified by respondents as the leadership style that positively influences both motivation and loyalty. This indicates that qualities such as inspiration, vision, and personal consideration, which are characteristic of transformational leaders, are particularly effective in fostering commitment and enthusiasm among young engineers. Meanwhile, Transactional Leadership was found to have the greatest impact on productivity, suggesting that structured guidance, performance monitoring, and reward systems directly support efficiency and task completion. Lastly, Servant Leadership, though consistently ranking lower than the other two styles, was still recognized for its positive role, especially in influencing loyalty, highlighting the value of leaders who prioritize service and the well-being of their team members.

Overall, the study concludes that while Transactional Leadership may be the most prominent in practice, Transformational Leadership demonstrates stronger influence on long-term factors such as motivation and loyalty, while Transactional Leadership provides immediate gains in productivity. Servant Leadership, although less dominant, contributes meaningfully to fostering loyalty and supportive work environments. These findings highlight the importance of leadership adaptability: leaders who can integrate elements of transformational, transactional, and servant leadership are more likely to address the diverse needs of Millennial and Gen Z engineers in the modern technical workforce.

V. RECOMMENDATIONS

Based on the findings of this study, the following recommendations are proposed to enhance leadership effectiveness among engineering professionals, particularly when managing Millennial and Generation Z engineers:

1. Future research should include a larger number of respondents to achieve better accuracy and more reliable results. A broader and more diverse group of participants from different engineering fields and work environments would provide deeper insights and enhance the validity of the findings.
2. Leaders should emphasize transformational qualities such as vision, encouragement, and personal development. By inspiring engineers to see the broader purpose of their work, leaders can enhance motivation, foster creativity, and strengthen loyalty. Mentorship programs, recognition systems, and open communication can help achieve this goal.
3. While transformational leadership builds motivation and loyalty, transactional leadership remains essential for maintaining order and achieving short-term goals. Leaders should continue to set clear expectations, establish measurable objectives, and use constructive feedback and rewards to sustain productivity and accountability.
4. Leaders are encouraged to integrate servant leadership qualities, such as empathy, listening, and prioritizing team well-being. Creating a supportive environment where employees feel valued and heard can strengthen relationships, promote collaboration, and enhance retention among younger engineers.
5. Organizations should provide continuous leadership training focused on blending transformational, transactional, and servant leadership practices. These programs can help current and future leaders adapt to the evolving expectations of Millennial and Gen Z engineers.
6. Engineering organizations should strive for leadership flexibility—combining the motivational aspects of transformational leadership, the structure of transactional

leadership, and the compassion of servant leadership. This balance can improve employee engagement, performance, and long-term commitment.

REFERENCES

[1] Bass, B. M., & Avolio, B. J. (1994). *Improving organizational effectiveness through transformational leadership.* Thousand Oaks, CA: Sage Publications.
[2] Northouse, P. G. (2021). *Leadership: Theory and practice* (9th ed.). Thousand Oaks, CA: Sage Publications
[3] Dimock, M. (2019). *Defining generations: Where Millennials end and Generation Z begins.* Pew Research Center. Retrieved from https://www.pewresearch.org
[4] Stillman, D., & Stillman, J. (2017). *Gen Z @ Work: How the next generation is transforming the workplace.* New York: Harper Business.
[5] Amabile, T. M. (1998). *How to kill creativity.* Harvard Business Review, 76(5), 76–87.
[6] Herzberg, F. (1966). *Work and the nature of man.* Cleveland: World Publishing Company.
[7] Yukl, G. A. (2013). *Leadership in organizations* (8th ed.). Boston: Pearson Education
[8] Greenleaf, R. K. (1977). *Servant leadership: A journey into the nature of legitimate power and greatness.* New York: Paulist Press.
[9] Robbins, S. P., & Judge, T. A. (2022). *Organizational behavior* (19th ed.). Pearson Education.
[10] Bass, B. M., & Riggio, R. E. (2006). *Transformational leadership* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.