Simplifying Vision, Understanding, Clarity, and Agility (VUCA) By Achieving Sustainable Development in Managing Projects in Indonesia

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ABSTRACT

The pivotal role of transformational leadership is a profound grasp of organizational intricacies, transparent communication, and the nurturing of an agile culture. They facilitate the transition from VUCA (volatility, Uncertainty, Complexity, and Ambiguity) to VUCA (Vision, Understanding, Clarity, and Agility). The study adopted a mixed methods approach. It first investigated the role of transformational leadership through a comprehensive review. In the second phase, structured interviews with key project management professionals were conducted to generalize the results. Twenty-six (26) interviews were conducted online, using snowball and purpose sampling techniques. In the second phase, the Observation-Training-Observation (OTO) model was applied to assess the impact of transformational leadership. Embracing VUCA presents growth opportunities, fostering innovation, strategic planning, and resilience. The study recommends cultivating transformational leadership, prioritizing continuous learning, refining communication for clarity, and instilling adaptability. By viewing VUCA as a catalyst for positive transformation, organizations can thrive in uncertain and complex environments, enriching the discourse on organizational resilience for leaders and decision-makers.

KEYWORDS: Vitality to vision; Uncertainty to understanding; Complexity and clarity; Ambiguity to Agility; Transformational Leadership

1. INTRODUCTION

In the ever-evolving landscape of project-based organizations and the management of projects, the transition from VUCA (Vitality, Uncertainty, Complexity, and Ambiguity) to VUCA represents an enduring and formidable challenge (Bennett & Lemoine, 2014; Mahlomotja, 2018). The dynamic nature of project environments, characterized by constant changes in technology, market dynamics, and stakeholder expectations, necessitates continually adapting to the challenges posed by vitality, uncertainty, complexity, and ambiguity (Ahmad et al., 2019; Chen et al., 2019). This journey involves navigating through unpredictable shifts, intricate challenges, and ambiguous situations that demand innovative strategies and resilient leadership

(Halou et al., 2019; Persis et al., 2021; Troise et al., 2022). Scholars emphasize the perpetual nature of this challenge, underlining the need for organizations and project managers to not only cope with VUCA elements but also to transform them into opportunities for growth and success. The literature underscores the urgency of understanding and addressing this ongoing challenge to enhance the effectiveness and adaptability of project-based organizations in an ever-changing global landscape (Madi Odeh et al., 2023). AlNuaimi et al. (2022) postulated that transformational leadership may champion a collaborative and decentralized approach, ensuring that the vision for managing projects emerges from diverse perspectives and expertise.

Transformational leadership is a dynamic force in navigating projects through a transformative journey. Initially, it articulates compelling future directions that transcend external turbulence (Al Marshoudi et al., 2023). Similarly, through trust-building mechanisms such as transparency and integrity, leaders foster a sense of shared purpose, converting uncertainty into a realm of understanding where stakeholders can collectively confront challenges (Yi et al., 2019). As complexities arise, transformational leaders bring clarity by aligning organizational values with strategic goals, encouraging continuous learning, and resolving intricacies through collaboration. Finally, these leaders instil agility and purpose, creating a culture that embraces adaptability and innovation (Da Assunçao Moutinho et al., 2023).

Research in projected benefit obligation (PBO) is motivated by the pressing need to address the challenges posed by our rapidly evolving world (Latha, 2020). In an era characterized by constant change, innovation, and global interconnectivity in PBO, transformational leadership is critical in preparing project management professional workers for success (Ciolacu et al., 2023; Latha, 2020). Moreover, workers and organizations face significant challenges in providing quality projects, adapting to evolving project workers' needs, and maintaining organizational stability (Alfahad et al., 2022; Freeman et al., 2023). The traditional VUCA framework underscores the difficulties faced by PBOs, but there is a pressing need to reframe this paradigm. So, based on the gaps and recommendations, the study focused on "How does transformational leadership transform PBOs' workers? Therefore, the study focused on the transformational leadership role in reshaping the transformative process from one VUCA phase to another within the context of Project-Based Organizations (PBOs). The study has been structured in the following manner to achieve its objective. In the literature section, a good comparison has been made between both VUCAs and how the transition is taking place from one to the second, and the role of transformational leadership has been explicitly provided. In the second section, the manuscript maintains the interview questions, their thematic analysis and the model derived/developed for the study. Also, to support the qualitative phenomenon, quantitative research was added. In the final section, a discussion and conclusion with future recommendations have been presented.

2. LITERATURE REVIEW

2.1 Volatility to Vision

Transformational leadership is a powerful catalyst in navigating the complexities of managing projects, transforming volatility into vision (Chen, 2022; Haloul et al., 2024). They excel at articulating a compelling vision that transcends the turbulence of external factors. This vision inspires a sense of shared purpose and direction, not merely reacting to challenges but leveraging them as opportunities for growth and improvement (Lisdiono et al., 2022; Madi Odeh et al., 2023). Trust and confidence in leadership are cultivated through transparency,

integrity, and a deep commitment to the organization's well-being. This trust is vital in times of uncertainty, as it forms the foundation for stakeholders to address challenges and embrace change collectively (Yang et al., 2020). Transformational leaders empower and inspire individuals within an organization, creating an environment where project workers feel motivated to innovate, adopt, adapt, and take ownership of change initiatives, thus harnessing the collective potential of the organization (Islam et al., 2020). They align organizational values with strategic goals, ensuring that all policies and actions resonate with the overarching vision, fostering a sense of unity and shared purpose among stakeholders. Continuous learning and adaptation are encouraged, emphasizing a culture that thrives on embracing new ideas and approaches, fostering resilience and agility in the face of policy-level volatility(O'Reilly & Chatman, 2020). These leaders actively engage stakeholders in decision-making processes, inviting input and feedback to create a sense of collective ownership and commitment, which shuns volatility and develops a shared vision. Through their Advocacy and influence, transformational leaders champion the organization's interests in various spheres, shaping policies to align with its vision and priorities (Islam et al., 2021; Velarde et al., 2022).

Additionally, leaders adeptly communicate these needs to external stakeholders. Strategic planning and execution are dynamic, anticipating and adapting to policy changes and external factors, ensuring the organization remains agile and resilient (Attar & Abdul-Kareem, 2020). Effective communication is paramount, keeping all stakeholders well-informed, explaining the rationale behind decisions, and providing regular updates on progress towards the organization's vision. In essence, transformational leadership empowers PBOs to withstand policy-level volatility and channel it into a positive force for change (Begum et al., 2022). By rallying stakeholders around a shared, inspiring vision, promoting adaptability, nurturing trust, and advocating for the organization's interests, transformational leaders pave the way from volatility to a more stable, resilient, and transformational project environment (Attar & Abdul-Kareem, 2020).

2.2 Uncertainty to Understanding

Transformational leadership stands as a guiding light in PBOs. They proficiently lead organizations from a state of uncertainty to one marked by profound understanding.

In times of rapid change and unpredictability, transformational leaders excel at articulating a clear and compelling vision for the organization's future (Begum et al., 2022). This vision provides a sense of purpose and direction that transcends the haze of uncertainty, helping stakeholders see a path forward. Trust is a cornerstone of their leadership, built upon transparency, integrity, and a deep commitment to the organization's welfare (Yi et al., 2019). By instilling confidence and fostering trust among project professional workers and other stakeholders, transformational leaders create a foundation upon which individuals can work together to confront challenges and seek solutions (Zaman et al., 2019).

Transformational leaders encourage, empower, inspire, and enable project knowledge workers to embrace uncertainty as an opportunity for growth and learning and promote innovation and adaptability in response to shifting circumstances (Crede et al., 2019). Aligning organizational values with strategic goals ensures that every action and policy resonates with the overarching vision, fostering unity and shared purpose among stakeholders. Continuous adoption and adaptation are encouraged, creating a culture that thrives on curiosity and resilience (Sheehan et al., 2020). Through active engagement of stakeholders in decision-making processes, transformational leaders generate a sense of collective ownership and commitment, helping

everyone navigate uncertainty together (Bennett & Lemoine, 2014). Advocacy and influence are wielded strategically to champion the organization's interests within and outside spheres (Chen et al., 2019). Their approach to strategic planning and execution is dynamic, anticipating and adapting to changes while managing projects and ensuring the organization remains agile and responsive (Watts et al., 2020).

They keep all stakeholders informed, explain the rationale behind decisions, and provide regular updates on progress toward the organization's vision (Bennett & Lemoine, 2014). Transformational leadership enables PBOs to survive and thrive in uncertainty, converting ambiguity into clarity, agility, and a greater understanding. By rallying stakeholders around an inspiring vision, promoting adaptability, nurturing trust, and advocating for the organization's interests, transformational leaders guide the organization toward a future marked by a deeper, more comprehensive understanding of its mission and purpose in an ever-evolving projects landscape (Xie, 2020)

2.3 Complexity to Clarity

Transformational leadership is pivotal in leading organizations through the labyrinth of complexity toward a state of clarity and purpose. Amidst the intricate challenges posed by rapidly evolving projects, transformational leaders are adept at articulating a clear and inspiring vision for the organization (Schiuma et al., 2022). This vision serves as a beacon of clarity, providing a sense of purpose and direction that transcends the complexities. Trust is a linchpin of their leadership, cultivated through unwavering transparency, integrity, and commitment to the organization's mission (Faupel & Süß, 2019). By instilling confidence and fostering trust among project workers and other stakeholders, transformational leaders lay the foundation for collective action in the face of intricate issues (Lin et al., 2020). They empower and inspire individuals within the organization, creating an environment where creativity and innovation are encouraged to unravel complexities (Grošelj et al., 2020).

Aligning organizational values with strategic goals ensures that policies and actions resonate with the overarching vision, fostering unity and shared purpose among stakeholders. The culture they nurture places a premium on continuous learning and adaptation, helping the organization navigate complex challenges with agility (Alblooshi et al., 2021). Complexities are resolved through collaboration, coordination, and cooperation. Advocacy and influence are strategically deployed to champion the organization's interests internally and externally, ensuring policies align with the organization's vision and priorities (Khan & Khan, 2019).

Similarly, their active approach to strategic planning and execution anticipates and simplifies complexities, ensuring the organization remains responsive, prepared, proactive, and focused. Again, effective communication remains an effective tool for transformational leaders to resolve complexities and share the latest updates and the organization's vision (Murphy & Anderson, 2020). Transformational leadership empowers organizations to navigate complexity and transform it into clarity and purpose. By rallying stakeholders around an inspiring vision, promoting adaptability, nurturing trust, and advocating for the organization's interests, transformational leaders illuminate the path toward a future marked by a profound, unshakable clarity of mission and direction amidst the intricacies of the project's landscape (Ardi et al., 2020).

2.4 Ambiguity to Agility

Lastly, transformational leadership emerges as an anchor in the journey of PBO from a state of ambiguity to agility and purpose. In a landscape marked by ever-shifting uncertainties and

ambiguities, transformational leaders stand out for their ability to articulate a clear and inspiring vision for the organization (Gouda & Tiwari, 2024). This vision serves as a beacon of clarity, providing a sense of purpose and direction that transcends the ambiguities. Trust forms the bedrock of their leadership, cultivated through unwavering transparency, integrity, and a deep commitment to the organization's mission (Klimenko, 2022). By inculcating confidence and nurturing trust among project workers and other stakeholders, transformational leaders create a foundation for collective action amid ambiguity (Saputra et al., 2022). They foster a culture where adaptability and innovation are celebrated as tools to navigate ambiguity and uncertainty. Aligning organizational values with strategic goals ensures that policies and actions resonate with the overarching vision, promoting unity and shared purpose among stakeholders (Busse & Weidner, 2020). The culture they develop thrives on equipping the organization to respond to ambiguities with resilience and agility. Active engagement of stakeholders in decision-making processes generates a sense of collective ownership and commitment, fostering an environment where agility becomes a collective effort. Advocacy and influence are strategically harnessed to champion the organization's interests, both within and beyond its walls, ensuring policies align with the organization's vision and priorities (Sahoo & Chaubey, 2023).

They confront ambiguities head-on, ensuring the organization remains agile and responsive. Moreover, they instil PBOs to confront ambiguity and transform it into agility and purpose (Petermann & Zacher, 2021). By rallying stakeholders around an inspiring vision, promoting adaptability, nurturing trust, and advocating for the organization's interests, transformational leaders illuminate the path toward a future marked by profound, unshakable agility in the face of the ever-shifting landscape of managing complex projects (Attar & Abdul-Kareem, 2020).

Based on the content reviews and findings, the study also proposed a conceptual model, as shown in Figure 1 and the hypothesis that transformational leadership has a positive role in bringing professional knowledge workers from chaos to clarity. The study hypothesizes that.

H1*: Transformational leadership mediates from chaos to clarity.*
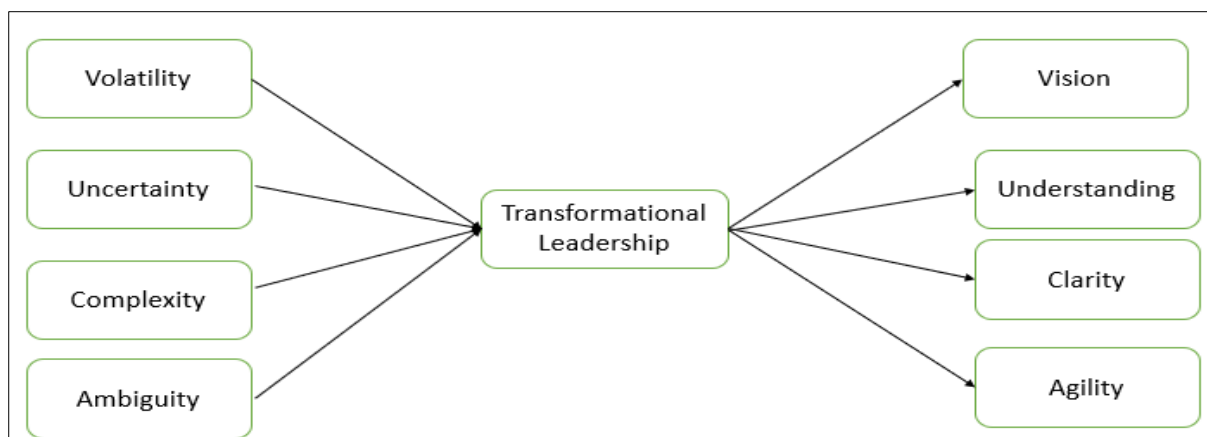

Figure 1: Developed a conceptual Model.

3. METHODOLOGY

The paper is based on the mixed-method approach. In the first phase, quantitative data was collected using the structured questionnaire adopted from previous studies (Appendix A). The

questionnaire was adapted according to the context with the consultation of the academicians, language experts, and professionals from the industry. The study was conducted in a formal and structured environment.

The study adopted an open-ended question and multiple questions. However, they were refined, and redundancies were removed. The questions were refined for the content and face validity with the academicians and language experts. So, the study ended with four (4) open-ended responses. The respondents were selected and approached via a professional network, LinkedIn. Moreover, the study adopted snowball and purposive sampling techniques. Therefore, the study got help in selecting and approaching the respondents.

For the study, as for the recruitment process, a total of thirty-five (35) project management professional workers who were also involved in the managerial activities were selected for the cause. However, nine (9) were excused for personal and professional reasons. Before and during the interview, all the professional and ethical protocols were followed. They formally shared their consent to the study to invite them to the online interview session. Due to sharing the content of the interviews and obtaining their consent formally, it was easy to develop a rapport during the online session. Moreover, the interviews were also analyzed using ENVIVO-11 to extract the themes from the interviews. The demographics of the interview respondents are listed in Table 1.

During the interview, all research and ethical protocols and procedures were followed regarding confidentiality, timing of the session, and recording. The study used the English language for the interviews, and it was found to be a formal and accessible language for both parties. The interviews were conducted online using Zoom and Google Meetings. The interviews were recorded with the concern of looking back for the confirmation of specific concepts and other clarification. Meanwhile, the study also used pen and pad for notetaking transcription and elaboration of the comment. Every interview took almost 40 to 45 minutes. The questions were open-ended; therefore, the responses were rich and diversified.

Table 1: Demographics of the Study.

Items		Frequency	Percentage
Education	Bachelor	4	15%
	Master	22	85%
Experience	1-10 years	8	31%
	11-20 years	11	41%
	21-30 years	7	28%
Position	Project Assistant	3	11%
	Project Coordinator	12	46%
	Project Manager	11	43%
Total		26	100%

A quantitative study was conducted in the second round based on the Observation-Training-Observation (OTO) model to confirm and validate the descriptive study findings. At time 1 (T1), professionals were selected through systematic random sampling from developmental projects in Indonesia, and a questionnaire was distributed. Subsequently, they underwent training on transformational leadership concepts and constructs, closely working in project-based organizations. The questionnaire was again distributed at 2 (T2) two weeks later. Both T1 and T2 data were analyzed with SPSS using descriptive statistics.

In the second phase, a structured survey adapted from prior research was administered to developmental sector professionals (see Appendix B for details). Utilizing a 5-point Likert scale, the survey was conducted at two different times, T1 and T2, involving 56 professional knowledge workers. These individuals were trained and made aware of various aspects of transformational leadership, and data was collected before and after the training using the OTO model. The demographics of the second study are given in Table 2. For the statistical analysis, the study utilized SPSS. SPSS is better for handling descriptive data. Given the nature of the collected data, SPSS was deemed the most appropriate for fulfilling the study's objectives. The details of the analysis are given in the results section.

Table 2: Demographics of the Survey.

Items		Frequency	Percentage
Education	Bachelor	19	34%
	Master	37	66%
Experience	1-10 years	21	38%
	11-20 years	17	30%
	21-30 years	18	32%
Position	Project Assistant	11	20%
	Project Coordinator	29	52%
	Project Manager	16	28%
Total		56	100%

4. FINDINGS AND ANALYSIS

The study developed 26 interviews, whose combined thematic analysis was compiled and shared with them through emails, WhatsApp, and LinkedIn messages for their final consent and approval. This process took more than six (6) months; however, it helped get the combined stances of the respondents. It also boosted the morale and confidence of the respondents, besides following the following interview code of conduct. According to the statistics given in Table 1, the respondents were well-qualified and had relevant experiences, skills, and qualifications in PBOs. Coding was also developed for the respondents with the names of their respective countries starting with the capital letter, followed by statistical value.

The above analysis explanation needs to be more apparent. For the analysis, you need to mention how the analysis process starts in the first place. How the data was processed, which software was used, how much time it took, how many codes were generated, how many themes were generated, which codes and themes were abandoned, and which themes finally came. Discussing these things in a maximum of 4 hundred words is essential.

4.1 Interviews Questions

The thematic analysis of the interview questions has been listed in the following section. For the thematic analysis, the study followed a rigorous procedure. In the first stage, a comprehensive review of the facts and figures was done from both sources, i.e., recordings and notes (transcriptions). They were revised and refined repeatedly before developing a pattern among the concepts and constructs. After this process, a summary was developed and shared again with the respondents to form a common theme and understating. As mentioned in the methodology section, the process could have been more complex. However, it helped in getting a comprehensive overview of the phenomenon of interest under review. Regarding the proposition and development of the questions, they were made simple and easy to understand/comprehend, and we were lucky that the respondents were well-qualified. Moreover, the thematic analysis is presented individually in the following sections.

4.2 Volatility to Vision

The study got several responses, compiled in the following lines. 3 out of 26 project knowledge professionals (PKP1, PKP2, PKP3),

"TL nurtures a culture where innovation and adaptability are encouraged and celebrated. They inspire knowledge workers to embrace volatility as an opportunity for growth, pushing us to reevaluate our progress."

Five proclaimed in our role as project coordinators, *"I witness the transformative power of leadership align our work and mission with an inspiring vision, capturing the collective imagination of the workforce".* In the same way, 2-project managers admitted that *"we believe that TL empowers our workforce to play an active role in shaping the future of our organization. They engage us in meaningful dialogue and decision-making processes in navigating volatility."* From our perspective; three project workers responded, *"It ensures that our organization remains agile and centric, even in the face of uncertainty. They develop a sense of ownership in their journey."* four respondents added that *TL provides a sense of direction and purpose, helping us understand how our organization is evolving in response to volatility."*

The recurring theme among the interviewees is the transformative power this leadership style holds within PBOs. It is consistently highlighted that transformational leaders, through their transformational guidance, cultivate a culture where adaptability and innovation are encouraged and celebrated. Such an environment empowers project workers and professionals to view periods of volatility and change as opportunities for growth rather than threats. This transformative approach to leadership fuels a growth mindset, inspiring project workers to reevaluate their teaching methods, research endeavours, and program structures. It encourages a constant quest for improvement and a commitment to remaining on the cutting edge of innovation.

One of the key elements brought to the fore in the interviews is the capacity of transformational leaders to articulate a clear and compelling vision for the organization's future. This vision is a guiding light during turbulent times, providing a roadmap aligning the entire community toward shared, long-term objectives. It acts as a beacon of purpose and direction, essential for preventing confusion and aligning the efforts of all stakeholders. Furthermore, the transformational leadership approach is recognized for its pivotal role in shifting an organization from a reactive stance to a proactive one. This transition empowers the project community to navigate challenges with optimism and a forward-looking perspective.

It establishes a foundation of resilience, adaptability, and unwavering commitment to the organisation's core values, even amid uncertainty and policy shifts. In sum, these interviews illuminate the multi-faceted influence of transformational leadership, extending its benefits to project workers and inclusivity, ultimately steering the organization towards a transformational, resilient, and innovative future.

4.3 Uncertainty to Understanding

The compiled responses have been presented holistically in the following section. All the professionals responded that.

"TLs create a culture of inquiry and learning, encouraging workers to seek a deeper

understanding of complex challenges.” Further, they added, *“These leaders champion the pursuit of knowledge and provide resources for professional development.”* From my perspective as a project manager and coordinator (4-responses), they added that *“TL leaders prioritize professional workers' development and well-being, providing a support system that helps workers navigate uncertainty.”*

As the Chief Information Officer*, “I've observed how transformational leadership shapes our organization's response to technological uncertainty. These leaders encourage us to stay at the forefront of technology and adapt to digital transformations.”* Others added that (4-responses) *“By encouraging us to ask questions, seek mentorship, and engage in experiential learning, they enable us to navigate the uncertainties of work life with a growing sense of understanding.”*

It is evident from the various perspectives shared that transformational leadership serves as an anchor during times of uncertainty and change. This leadership style consistently fosters a culture of curiosity, adaptability, and innovation. It encourages project workers to embrace volatility as an opportunity for growth and learning. The emphasis on evidence-based decision-making and lifelong learning equips the project workers with the tools to navigate complexity and ambiguity. Through transformational guidance, transformational leaders provide organizations with a clear path, steering them from confusion and uncertainty to a profound understanding.

These interviews also admit the profound impact of transformational leadership on every facet of PBOs. This leadership style empowers organizations to navigate uncertainty and respond to change with resilience and insight. The emphasis on adaptability, innovation, and a growth mindset creates an environment conducive to continuous improvement and progress. By strongly emphasising a shared vision, these leaders unite the project workers and the whole community, providing a sense of purpose and direction. In doing so, transformational leadership facilitates transitions from states of ambiguity and uncertainty to those characterized by profound understanding and clarity. Overall, the interviews illuminate the pivotal role of transformational leadership in shaping the trajectory of PBOs, reinforcing its significance in fostering resilience, growth, and a forward-thinking approach in the face of constant change.

4.4 From Complexity to Clarity

The responses were compiled and have been listed in the following section. According to the 14 respondents, *“TL distills complex issues into clear, actionable strategies. They set a vision that prioritizes clarity and transparency, empowering our organization to navigate intricate challenges with a sense of purpose and a clear path forward.”* In the same way, 11 professional workers added, *"They emphasize the importance of strategic thinking and critical analysis. They foster a culture of interdisciplinary collaboration and innovation."*

Similarly, the personnel from the international project proclaimed that (3 responses), *“TL believes in data-driven decision-making, and they foster the culture of innovation and impact assessment are developed impactful research portfolio.* “In the same ways, the overseeing facilities manager prompted that, *“through strategic planning, they enable to moves towards sustainable and functional areas, seeking their input develop a sense of ownership.* "Similarly, seven professionals working on organizational assessment proclaimed, *“In assessment, our organization moves toward more data-informed and outcome-focused approach in PBOs, which bring clarity to the process and operations.”*

A consistent theme that emerges is how transformational leaders excel in simplifying complexity.

Their unique ability to distil intricate issues into clear, actionable strategies sets a vision for prioritizing clarity and transparency. This empowers organizations to address complex challenges with a sense of purpose and a well-defined path forward. The role of transformational leadership in guiding organizations from a state of complexity to one marked by focus, transparency, and strategic intent is evident across multiple aspects of managing projects.

The interviews showcase how this leadership style is particularly effective in streamlining complexities in diverse areas to manage projects in the best possible ways. These leaders emphasize the importance of clarity, interdisciplinary collaboration, strategic thinking, and data-driven decision-making. They foster cultures of innovation, transparency, and accountability, empowering the project workers to navigate intricate challenges with precision and a deep understanding of their respective domains. In essence, the interviews highlight the transformative power of leadership in making the PBOs more straightforward, focused, and responsive, effectively navigating complexities with resilience, clarity, and purpose.

4.5 Ambiguity to Agility

All respondents' compiled aggregative (26) response*s shared, "I've seen how transformational leadership empowers us to navigate ambiguity with agility in PBOs. These leaders emphasize the importance of flexibility and adaptability in plans and processes."* Moreover, in my capacity as a Project Management Office (PMO) manager, he added that *"TL enables us to navigate ambiguous challenges with agility and empathy."* Furthermore, from the perspective of research projects, *"the culture of innovation and impact assessment empowers us to address the ambiguities of research with agility and purpose. They focus more on impactful research portfolio."* Likewise, as the Chief Information Officer, *I want "A digital readiness and security, enabling us to navigate the complex challenges of technology with agility and resilience, as fostered by the TL."* In our role overseeing organizational effectiveness, (4 responses) *"I've seen how transformational leadership simplifies data analysis and performance assessment ambiguities. These leaders prioritize data-informed decision-making and continuous improvement."*

These insights from interviews collectively paint a vivid picture of the transformative power of leadership in PBOs, emphasizing the ability of transformational leaders to navigate ambiguity with remarkable agility. This leadership style prioritizes flexibility, adaptability, and innovation, fostering a culture of interdisciplinary collaboration. Transformational leaders empower organizations to move from states of ambiguity to agile and responsive approaches, ensuring they remain dynamic and effective in a constantly evolving project landscape.

These interviews reveal that transformational leadership greatly influences workers' experiences in uncertain environments by prioritising project workers' well-being and adaptability. They foster a culture of adaptability, resilience, and support, enabling workers to navigate ambiguous learning experiences with agility and empathy. Additionally, they empower workers to embrace experiential learning and reflection, fostering a growth mindset that allows them to navigate ambiguous challenges with agility. Through transformational leadership, workers transition from states of ambiguity to more agile and transformative learning journeys. This leadership style also extends its influence on organizational effectiveness, prioritizing data-informed decision-making and a culture of assessment and accountability. By doing so, transformational leaders guide organizations toward a more agile and data-driven approach, simplifying complexities and enabling purposeful action amidst ambiguity. Moreover, the themes are presented in Table 3.

Table 3: Themes of the Interviews.

Constructs	Themes
Vitality to Vision	Growth Mindset and Innovation
	Shared Vision
	Resilience and Commitment
Uncertainty to Understanding	Culture of Inquiry and Learning
	Professional Development
	Embracing Technology
Complexity to Clarity	Simplifying Complex Issues
	Strategic Thinking and Collaboration
Ambiguity to Agility	Emphasizing Flexibility and Adaptability
	Digital readiness
	Data-Informed Decision-Making

Results of the Descriptive Study

The details of the second study are given in Tables 4 and 5, respectively. Table 4 maintains the data before the transformational leadership training and awareness session, while Table 5 enlists the statistics afterwards.

Table 4: Statistics Before Training.

Se. No	Items List	T1 Mean	SD	T-value	Sig (2-tailed)
	Vitality				
1	V1	3.381	0.738	2.839	0.060
2	V2	3.922	0.728	2.193	0.002
3	V3	3.986	0.868	2.939	0.090
4	V4	3.787	0.738	2.029	0.003
	Uncertainty				
5	U1	4.012	0.738	2.001	0.009
6	U2	4.004	0.678	2.910	0.012
7	U3	3.745	0.738	2.839	0.004
8	U4	3.736	0.637	1.998	0.090
	Complexity				
9	C1	4.027	0.839	2.839	0.003
10	C2	3.844	0.637	2.019	0.009
11	C3	3.733	0.772	3.829	0.003
12	C4	3.842	0.672	2.109	0.000
	Ambiguity				
13	A1	3.842	0.738	2.378	0.003
14	A2	4.214	0.637	2.839	0.100
15	A3	3.834	0.691	2.039	0.003
16	A4	3.785	0.920	2.810	0.901

Table 5: Statistics After Training.

Sr. No	Items List	T1 Mean	SD	T-value	Sig (2-tailed)
	Vitality				
1	V1	3.381	0.738	2.839	0.000
2	V2	3.922	0.728	2.193	0.002
3	V3	3.986	0.868	2.939	0.000
4	V4	3.787	0.738	2.029	0.003
	Uncertainty				
5	U1	4.012	0.738	2.001	0.000
6	U2	4.004	0.678	2.910	0.003
7	U3	3.745	0.738	2.839	0.004
8	U4	3.736	0.637	1.998	0.000
	Complexity				
9	C1	4.027	0.839	2.839	0.003
10	C2	3.844	0.637	2.019	0.009
11	C3	3.733	0.772	3.829	0.003
12	C4	3.842	0.672	2.109	0.000
	Ambiguity				
13	A1	3.842	0.738	2.378	0.003
14	A2	4.214	0.637	2.839	0.000
15	A3	3.834	0.691	2.039	0.003
16	A4	3.785	0.920	2.810	0.000

The analysis revealed that the mean value of T1 (Transformational Leadership) is lower than that of T2 (Performance of professional knowledge workers). Furthermore, the standard deviation (SD) of T2 is lower than that of T1, suggesting that transformational leadership positively impacts the performance of knowledge workers across diverse industries in Indonesia. Significantly, all statistical tests produced t-values that were deemed statistically significant, indicating a substantial influence of transformational leadership on the performance of knowledge workers. This reinforces that transformational leadership has a measurable and meaningful effect on the performance outcomes of these professionals in the context of various industries within Indonesia.

4.7 Discussion

The study collectively provides a comprehensive view of the transformative power of leadership in PBOs, emphasizing the ability of transformational leaders to navigate complexity, uncertainty, and ambiguity (Ardia et al., 2020). This leadership style consistently fosters a culture of innovation, adaptability, and resilience, encouraging project professional workers to embrace change as an opportunity for growth. By articulating a clear and compelling vision, transformational leaders guide organizations through turbulent times, aligning the project's professional workers with long-term goals and empowering them to transition from reactive to proactive stances (Islam et al., 2020).

The study preaches the profound impact of TL in PBOs. This leadership style empowers organizations to respond to change with resilience, insight, and a focus on clarity and transparency (Sheehan et al., 2020). The emphasis on adaptability, innovation, and shared vision creates environments conducive to continuous improvement and progress. Transformational leadership simplifies complexities, making the project landscape more straightforward, focused, and responsive (Saputra et al., 2022). From project planning to project implementations and workers' well-being, this leadership style guides organizations towards agile and transformative approaches, empowering them to thrive in an ever-evolving project landscape.

Moreover, the study clearly illustrates that transformational leadership positively and significantly impacts professional workers' performance and brings them out of chaos (O'Reilly & Chatman, 2020). It gives explicit directions for understanding, vision, clarity, and agility among professional knowledge workers. Moreover, it is the human psyche that when they find opportunities for learning and growth, they perform up to their best (Attar & Abdul-Kareem, 2020).

5. CONTRIBUTION OF THE STUDY

This study delves into the transformative power of transformational leadership, shedding light on its effectiveness in guiding PBOs through four crucial transitions: vitality to vision, uncertainty to understanding, complexity to clarity, and ambiguity to agility. Recent research underscores the pivotal role of influential figures within PBOs and their communities in facilitating these transitions. Transformational leadership promotes collaboration and decentralization, ensuring project vision is derived from diverse perspectives and expertise. This research forms a comprehensive foundation for understanding the impact of transformational leadership in the context of PBOs.

Moreover, in the context of the evolving nature of projects and their landscape, this research addresses the pressing need to navigate the challenges of a rapidly changing world. Research is vital in preparing project workers for success in this dynamic environment. It provides

valuable insights and practical strategies for project leaders and organizations, enhancing their ability to adapt to the complexities of the modern world and ultimately improving project quality. This research reframes the traditional VUCA paradigm, emphasizing attributes like Vision, Understanding, Clarity, and Agility. By exploring the potential impacts of these attributes on project quality, organizational adaptability, and project workers' preparedness, the study offers practical insights for PBOs. It addresses the need for a comprehensive framework that empowers organizations to thrive amidst VUCA challenges, ensuring they can navigate the uncertainties of the modern world while providing high-quality project results.

6. CONCLUSION AND RECOMMENDATIONS FOR FUTURE RESEARCH

The study delves deeply into the transformative power of transformational leadership within PBOs, illuminating its central role in guiding these organizations through essential transitions. From moving through volatility to establishing a clear vision, navigating uncertainty to fostering understanding, simplifying complexity to prioritizing clarity, and transitioning from ambiguity to agility, transformational leaders are catalysts of change. They instil adaptability, innovation, and resilience across multiple facets of projects. These leaders foster a dynamic environment focused on continuous improvement and excellence by empowering project workers to embrace change as a pathway to growth. Transformational leadership streamlines complexities in various domains, making the PBOs more responsive and goal-oriented.

The study paves the way for future research to deepen our understanding of transformational leadership's lasting influence. A longitudinal examination could uncover the long-term impact of this leadership style in PBOs, elucidating whether the changes initiated result in sustained improvements in project quality and adaptability over extended periods. Furthermore, a comparative analysis of transformational leadership in PBOs across diverse countries and cultures would reveal the role of cultural factors in shaping its effectiveness. This analysis can provide critical insights into how transformational leadership can adapt to various contexts and cultural nuances.

Future research can also examine the efficacy of training programs to cultivate transformational leadership skills among project workers to enrich our knowledge further. Understanding how leadership development initiatives impact an organization's capacity to navigate a volatile, uncertain, complex, and ambiguous (VUCA) environment is paramount. Lastly, developing and refining measurement tools for assessing transformational leadership in PBOs can advance the precision of evaluations, offering organizations a means to self-assess their leadership effectiveness and inform ongoing improvements. In essence, these avenues of research will deepen our comprehension of the enduring impact of transformational leadership in PBOs and its adaptability to cultural contexts, professional outcomes, leadership development, and assessment methods, ultimately ensuring the resilience and growth of organizations in an ever-evolving world.

Author Contributions: Conceptualization, Yeti Rohaeti; methodology, Muhammad Yunus Amar and Musran Munizu; software Yeti Rohaeti validation, formal analysis, Muhammad Yunus Amar and Musran Munizu investigation, Muhammad Sobarsyah Resources, Yeti Rohaeti and Musran Munizu data curation, Yeti Rohaeti writing—original draft preparation, Yeti Rohaeti Writing—review and editing, Muhammad Sobarsyah supervision, Yeti Rohaeti; Project administration, Muhammad Yunus Amar; funding acquisition, Yeti Rohaeti. All

authors have read and agreed to the published version of the manuscript.

Conflict of Interest: The authors declare no conflict of interest.

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APPENDIX-A

How does transformational leadership support the project organization in moving from a state of ambiguity to one characterized by agility, where it can navigate uncertain situations with flexibility and responsiveness?

How does transformational leadership promote a culture of adaptability and innovation within the organization?

What specific leadership qualities or behaviours enable a transition from ambiguity to agility?

How does transformational leadership foster a growth mindset among project workers, and how does this impact the organization's ability to navigate ambiguous situations?

Can you provide examples of successful transitions from ambiguity to agility driven by transformational leadership in PBOs?

What challenges or obstacles might hinder the transition from ambiguity to agility, and how can transformational leaders address them?

How does transformational leadership guide a PBO organization in transitioning from a state of complexity to one marked by clarity, where its mission and strategic direction become more evident and understandable?

What are PBOs' common challenges and complexities in defining their mission and strategic direction?

How does transformational leadership help align stakeholders around a clear and understandable mission and vision?

Can you provide examples of PBOs successfully transitioning from complexity to clarity under transformational leadership?

What strategies do transformational leaders employ to make an organization's mission and strategic direction more evident and understandable?

How does the clarity of mission and strategic direction impact the organization's decision-making processes and overall effectiveness?

How does transformational leadership specifically facilitate the transition of PBOs from a state of volatility to a well-defined and inspiring vision for its future?

What are the primary sources of volatility and uncertainty that PBOs typically face?

How does transformational leadership create a sense of stability and confidence in the face of volatility?

Can you provide examples of organizations that have successfully transitioned from a state of volatility to a well-defined and inspiring vision under transformational leadership?

What strategies do transformational leaders employ to articulate a compelling vision for the organization's future?

How does this inspiring vision impact the organization's culture, decision-making, and overall performance?

How does transformational leadership contribute to PBOs' journey from uncertainty to a deeper and more comprehensive understanding of its mission and purpose?

What are PBOs' typical sources of uncertainty in defining their mission and purpose?

How does transformational leadership create a sense of clarity and purpose amidst uncertainty?

Can you provide examples of organizations that have better understood their mission and purpose under transformational leadership?

What strategies do transformational leaders employ to foster a more comprehensive understanding of the organization's mission and purpose?

How does this deeper understanding impact the organization's strategic planning and alignment with its core values?

Appendix- B Time 1

S.no	Items list	T2 Mean	SD	T-values	Sig (2-tailed)
	Volatility to Vision				
1	How inspired do you feel by the project goals set by leadership?	4.581	0.438	1.739	0.000
2	Do you perceive a clear and compelling vision for the project from leadership?	4.022	0.528	2.183	0.002
3	To what extent does the project's vision motivate you to excel in your work?	4.086	0.568	1.949	0.004
4	How well do you understand how your work contributes to the larger vision of the project?	4.187	0.538	1.559	0.000
	Understanding (Previously Uncertainty)				
5	How effectively does leadership communicate changes or unexpected events within the project?	4.117	0.578	2.940	0.003
6	Do you feel well-informed and prepared to handle uncertainties within the project environment?	4.765	0.438	2.459	0.004
7	To what degree does leadership provide information and context to help understand project complexities?	3.736	0.437	1.968	0.000
8	How confident do you understand project objectives and their alignment with the larger organizational goals?	4.327	0.509	1.239	0.001
	Clarity (Previously Complexity)				
9	How well do you think leadership communicates the interrelationships among different project tasks?	4.533	0.472	3.593	0.003
10	Does leadership clearly define the roles and responsibilities within the project team?	4.042	0.602	2.129	0.000
11	To what extent does leadership simplify complex project tasks for better understanding?	4.892	0.538	2.456	0.000
12	Are there resources or tools provided by leadership to manage complex project components?	4.342	0.478	1.346	0.001
	Agility (Previously Ambiguity)				
13	How effectively does leadership navigate changes in project direction or outcomes?	4.285	0.420	2.384	0.000
14	Are decision-making processes agile and adaptable to changing project circumstances?	4.431	0.538	1.849	0.001
15	To what extent does leadership encourage a flexible and adaptable approach within the project team?	4.012	0.528	2.340	0.002
16	How well does leadership promote a culture of quick adaptation to unforeseen challenges?	4.086	0.468	1.039	0.001