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The Role of Leadership in Tacit Knowledge Transfer in the Nigerian Oil and Gas Industry.

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ABSTRACT

The oil and gas industries are knowledge driven industry. The technology deployed in deep water exploration and production involve knowledge-intensive process by highly technical personnel. The problem was that the leadership of the oil and gas industries have not necessitated early recovery of tacit knowledge transfer from experts to employees managing the plant operations. The purpose of this qualitative multiple case study was to gain an understanding of how oil and gas industry leaders in Nigeria facilitate the transfer of tacit knowledge from experts to employees managing the plant after exploration activities. The conceptual framework was the socialization, externalization, combination, and internalization model developed by Nonaka and Takeuchi and Burns' transformational leadership theory. A qualitative multiple case study design was used by adopting multiple sources of information including semi-structured interviews, field notes, and review of organizational documents. The unit of analysis was leaders in an oil and gas services organization. The data analysis processes involved coding of the data, categorizing the coded data, and subsequently generating themes in line with the research question using NVivo Version 12 software. Findings indicated that leaders facilitated the transfer of tacit knowledge through the creation of a safe working environment and demonstration of care for the employees. The opportunity to facilitate the transfer of tacit knowledge from expert to employees managing

operations after exploration enhance the organization's stability and promotes healthy communities.

Keywords– Knowledge-Transfer, Leadership Style, Oil and Gas Industry

1.0: INTRODUCTION

The oil and gas industries have seen a declined in the price of the products due the COVID-19 pandemic leading to reduction in drilling operations and general jobs losses in the industry [10]. The oil and gas industries are knowledge driven industry. The technology deployed in deep water exploration and production involve knowledge-intensive process by highly technical personnel of services firms [21]. The industry leverages on the expertise of their skilled workforces for operational continuity and competitive advantage [15;26]. Tacit knowledge has unique peculiarities in a knowledge-based organization. The technical and professional skills of industry operators from the employees to contractor and consultants are critical to the operational continuity in the industry [28: 38]. It has become imperative for leadership in servicing organizations to shift attention from physical to intellectual assets [30].

Industry experts has long recognized the importance of knowledge transfer and the corresponding support of leadership in the management of such knowledge. Knowledge management (KM) is a vital and requisite tool to gaining a competitive advantage in servicing companies [19]. The ability of the drilling and servicing companies to transfer tacit knowledge after drilling and workovers to the operating companies may enable the operating companies to preserve critical knowledge and promote operational continuity [15]. The key resource personnel needed for the sustainability of the oil and gas companies are the knowledge of the employees and contractors who worked for services organizations or are currently working for the oil and gas companies [30]. Loss of these key personnel due to change of job and retirement may be inevitable, there could be a transfer of knowledge to other employees through knowledge sharing [50]. The sudden exit and attrition of experienced employees greatly impacts on the future workforce, where the practice of knowledge transfer strategies is non-existent [25: 41].

Tacit knowledge transfer has a long-term impact on the company growth [37]. The lack of quality in knowledge transfer practice might limit the usefulness of the captured tacit knowledge to enhance organizations' bottom line [28]. Only few organizations within the oil and gas industries have a formal strategy for knowledge retention of experienced employees and developed sustainable methods of eliminating loss in the process of knowledge transfer [42:14]. The

understanding of how leaders facilitate the transfer of tacit knowledge within the organizations like the oil and gas companies is significant [22: 30]. This research was conducted to gain an understanding of how leaders in services companies in the oil and gas industries facilitate the transfer of tacit knowledge among employees. This study provides an opportunity on how leveraging on the transfer of tacit knowledge from experienced employees to new employees at an oil and gas company may enhance the growth of the organization.

1.2: Problem Statement

The projected number of aging or experienced workers exiting the oil and gas industry in Nigeria between 2015 and 2025 will create a labor scarcity that will affect the manpower need of the industry [42]. The knowledge gap created is due to the labor scarcity created by the exit of experienced personnel. A survey administered by the Technology Services Industry Association in KM across industries showed that 43% of the 300 respondents thought that there are unqualified employees because of inadequate knowledge [40].

The general management problem is that despite the efforts in capturing tacit knowledge, leaders of organizations have not fully realized the benefit of tacit knowledge [24: 28:36]. The specific problem is that the efforts of the leaders of organizations in the oil and gas industries in eliminating loss in the transfer of tacit knowledge among employees have not been realized [17:49].

1.3: Purpose of the Study

The purpose of this qualitative exploratory multiple case study was to gain an understanding of how leaders in an oil and gas companies in Nigeria facilitate the transfer of tacit knowledge among employees. The goal of qualitative research is to gain an understanding of a situation, individuals, or group of people. The choice of a case study is to enable the researcher to gain in-depth understanding of the phenomenon of interest [1:5].

1.4: Research Questions

The overarching research question was: How do leaders in the oil and gas industries facilitate the transfer of tacit knowledge among employees?

1.5: Conceptual Framework

The conceptual framework for this study was based on (a) the socialization, externalization, combination, and internalization (SECI) model developed by Nonaka and Takeuchi (1995), and (b) transformational leadership theory [9]. Knowledge creation is a dynamic process of spiral interaction of explicit and tacit knowledge and involves the transfer of tacit and explicit knowledge among individuals and groups of individuals within and outside organizations [35]. In this dynamic process of knowledge creation, there is a continuous interaction among varied levels of employees. Research has shown that the leadership role is critical to the outcome of the interaction [47].

2.0: LITERATURE REVIEW

2.1: Leadership in Oil and Gas Industry

A leader is someone that guides others and leadership is the ability to guide and direct others [45]. In today's changing business world, the leader should be open to change and should influence the employees to change and be involved in the change process [45]. A leader with confidence would believe in followers, consequently, employees will believe and demonstrate high level of motivation in following the leader [6]. The goal of leaders is to empower employees in optimizing their potentials through the concern for others, openness, and support [6]. These leadership qualities make the team feel welcome and wanting to work and follow the leader. The probability of being committed to working for lack of trust in the leader is one out of twelve [46].

The leader acts as the change agent and must communicate *what* and *why* the change to protect the integrity of the information [44]. Leaders should have visions of a future with corresponding action plans to accomplish them [44]. The action plans should also include how to motivate employees to relate to the vision [44]. The leader should be apparent in their message and develop an effective communication plan towards accomplishing the goal. For communication to be effective, the message must be repeated several times to achieve good understanding and for employees to buy-in [6]. A leader, being a role model promotes and sustains organizational goals. A leader drives the followers' actions throughout the organization [6]. The leader's role affects everything from attitudes to work and the management of knowledge transfer processes [44]. Moreover, as a role model, the leader's words should match the actions [45]. Tacit knowledge is crucial for an organization's competitive advantage [17], and leaders should be mindful of their roles in the process of managing the transfer of valuable assets (tacit knowledge) to enhance the worth of the organization.

Sharing of knowledge is a vital component of the transfer of tacit knowledge. The three aspects of knowledge sharing are relational, cognitive, and structural [44]. The identified dimensions [44], are to be fostered by leaders to facilitate the sharing of tacit knowledge. In the first dimension, relational, the focus is on building trust, respect, and friendship among employees. In the second dimension, cognitive, the attention is on effective communication for creating systems of shared meaning within the organization. The third and the last aspect, structural, centers on building network ties that supported the interactions among employees. All the three elements point to the relevance of commitment in knowledge transfer that Nonaka (1994) identified the main issues in the creation of new knowledge. The three factors that could encourage individual commitment are intention, autonomy, and fluctuation [33].

The intention is the awareness of the individual in creating new knowledge and recognizing the value in them. Autonomy focuses on understanding individual differences and the practice of openness within the organization to optimize the different viewpoints in achieving set goals. The third factor, fluctuation, recognizes the existence of some discontinuity or change in patterns within the organization. However, since the transfer of knowledge is through the interaction between people [33], the effect of fluctuation creates new interactions between individuals, and in turn, create new knowledge.

2.2: Leadership Role in Knowledge Transfer

Leadership is the ability to inspire followers through vision and mission [52]. Leadership covers necessary tasks and functions that are required for businesses to succeed, develop, and be efficient [13]. Therefore, leadership functions are into two categories-normal operations and transformation [13]. To be successful in KM, it requires a conscious approach throughout the organization [12:7]. There exists a relationship between life-changing leadership and the productivity of an organization [3]. A transformational leader is instrumental in improving the position of organizations [3]. Leaders' behavior might increase employees' innovative thinking and performance, and that transformational leaders empower employees to be creative and innovative [3;11].

2.3: Leadership Styles Applicable in Knowledge Transfer

A leadership style is a method that a leader uses to provide direction, implement plans, and motivate people [52]. Leadership in regular operation offers support and structure by establishing an environment for employees to thrive [52]. In management, there had been an extensive

discussion on the following leadership styles: transformational, transactional, authoritarian, paternalistic, democratic, and laissez-faire.

2.3.1: Transformational. The principal goal is to transform the followers and redirect their thinking. Leaders with this style, inspire their followers with a sense of purpose [52]. Transformational leaders create a vision and communicate them to their followers [3:11]. Charismatic leaders are knowledgeable and use different strategies to stimulate their followers to think independently [53]. The three stages in the transformational leadership style are communication of importance of assignment, ensuring the realization of organization' objective, and provision of necessary supports to employees.

2.3.2: Transactional. Transactional leaders motivate followers through rewards and punishments. Leaders provide rewards for effort and excellent performance. If subordinates do not meet expectations, leaders maintain the status quo through management by exception and implementation of corrective actions for performance improvement. The focus of transactional leaders is to increase the efficiency of a system by following the established rules. A transactional leader provides and standardizes practices in achieving organizational goals. A transactional leader is either negatively or positively affected, depending on whether the emotional level is high or low, respectively. The leadership style is task oriented [8] and based on a working relationship between leader and employee. Employees can perform their roles and do their best if they understand expectations.

2.3.3: Authoritarian. The authoritative leadership style emphasizes the distinction between leaders and their followers. Direct supervision is the strategy for maintaining a thriving environment, and authoritarian leaders follow the vision of those in control. Authoritarian traits include setting individual goals, engaging one-way and downward communication, controlling, and interaction domination.

2.3.4: Paternalistic. A paternalistic leader acts as a parental figure. The leader has comprehensive care for his/her subordinates and, in return, enjoys the loyalty of his followers. Employees are committed to the leader's beliefs' and are independent. The relationship between leaders and followers is substantial such that workers have more extended employment history because of the trust in leadership that makes workers open to the leaders with any issue. One of the downsides to a paternalistic leadership is an unfair preference. The effect of favoritism may

erase the benefit of longevity with the organization. The followers of paternalistic leaders have better organizational skills than followers of a transactional leader [35]. Having this style of leadership promoted a reward system that enhanced more accomplishment and boosted employees' self-confidence.

2.3.5: Democratic. In a democratic leadership style, the leader shares the decision-making abilities of followers by practicing social equality, the democratic style beliefs in everyone playing a part in decision making. In research on participative management, the democratic style is one of the most effective and may result in higher productivity, and increased morale [16]. The downside to the democratic leadership is that it works best for followers that are skilled and eager to share knowledge. It requires plenty of time to establish the best course of action.

2.3.6: Laissez-faire. The laissez-faire leadership style gives the power to make decisions wholly to workers and enables followers' self-rule. In the laissez-faire leadership style, leaders provide followers with every support but only involve in decision making unless requested by followers. Laissez-faire leadership is sufficient to use when: (a) employees are highly skilled and experienced, (b) employees take pride in their assignments, (c) employees are outside experts, and (d) followers are trustworthy and experienced.

2.4: Tacit Knowledge and Leadership Success

Continuing exploration of tacit knowledge might enhance the success of leaders [43]. However, the personal characteristics of leaders are key factors in the implementation of KM. Such personal traits are social, emotional intelligence, and critical thinking skills. In favor of the above argument, for a leader to be successful, they must possess the following three qualities [46]:

1. Understanding - what to change.
2. The ability to move from old and new personal behavior
3. Communication skills

Since an increase in the accumulation and application of tacit knowledge enhances an individual's knowledge grows, the effective transfer of tacit knowledge may support both employees' and leaders' performances [18].

3.0: MATERIALS AND METHODS

3.1 Research Setting

To recruit participants for this study, the authors sent a request to the authorization officers in two organizations; these officers later responded by sending the contact information of potential participants who met the inclusion criteria. The criteria were leaders with a minimum of 10 years of experience at oil and gas company. The firm also had to have a minimum of 20 years of operation in Nigeria and a minimum of 100 employees. Invitation e-mails were sent to 25 individuals on the list. Some potential participants declined to be a part of the study based on their busy schedules; others did not respond to the e-mail. The authors sent consent forms and interview protocols to the participants who responded and set up interviews.

Interviewed 15 participants with 9 participants from one organization and six from the second organization; the distribution was based on the availability of participants. The two organizations have footprints across the Niger Delta region of Nigeria. A case study is a methodological approach that involves the in-depth exploration of a specific bounded system [31]. In this study, the bounded system was the process of transferring tacit knowledge among employees in oil and gas organization. In this study, we conducted semi-structured interviews, transcribed the interviews, and extracted codes and categories. The themes are the conceptual elements that span the categories generated from the transcript. The multiple data sources were used to corroborate and augment evidence from the interviews.

Based on the analyses of the interviews there was no new insight or codes after the 11th interview. Saturation occurs when continued data collection produces no new information or insights into the phenomenon of study. We concluded the existence of data saturation; hence, the study was limited to two cases. The interviewing process and peer checking occurred in the two organizations and spanned 7 weeks. We performed the interviews at the office premises of the participants by administering the script and the informed consent agreement to the research participants. We explained the primary focus of the study before the interview to all participants. The interviews lasted approximately 20–30 minutes. We sent the transcripts to the participants about 2 days after their interview to ensure immediate review for the strength, validity, and reliability of the study. All 15 participants reviewed the transcripts with either minor or no comments. The strength of the study reflects a mixture of interviewees' expertise. The professional knowledge shared by the participants during the face-to-face interviews showed the depth of their knowledge of the phenomenon of interest.

4.0: RESULTS AND DISCUSSION

The central research question of the study was how leaders in the oil and gas industries facilitate the transfer of tacit knowledge among employees. In the following sections, we will present the findings of this study about how leaders in the oil and gas industries in Nigeria facilitate the transfer of tacit knowledge among employees. The selected two organizations have footprints across Nigeria. We purposively selected 15 participants in alignment with the research method and methodology of this research study.

4.1: Major Themes

We reviewed semi-structured open-ended questions, notes, and documents by uploading all the sources of data into NVivo 12. The emergent themes resulted from the analysis and interpretation of the data collected from the semi-structured interview question.

Table 1

Emergent Major Themes and Categories from Interviews, Field Notes, and Document Review

Major themes	% Occurrence	Categories
Safe work environment	60	Diversity, listening, and culture/behavior
Caring for the Employee	40	Engagement, encouragement, and benefit

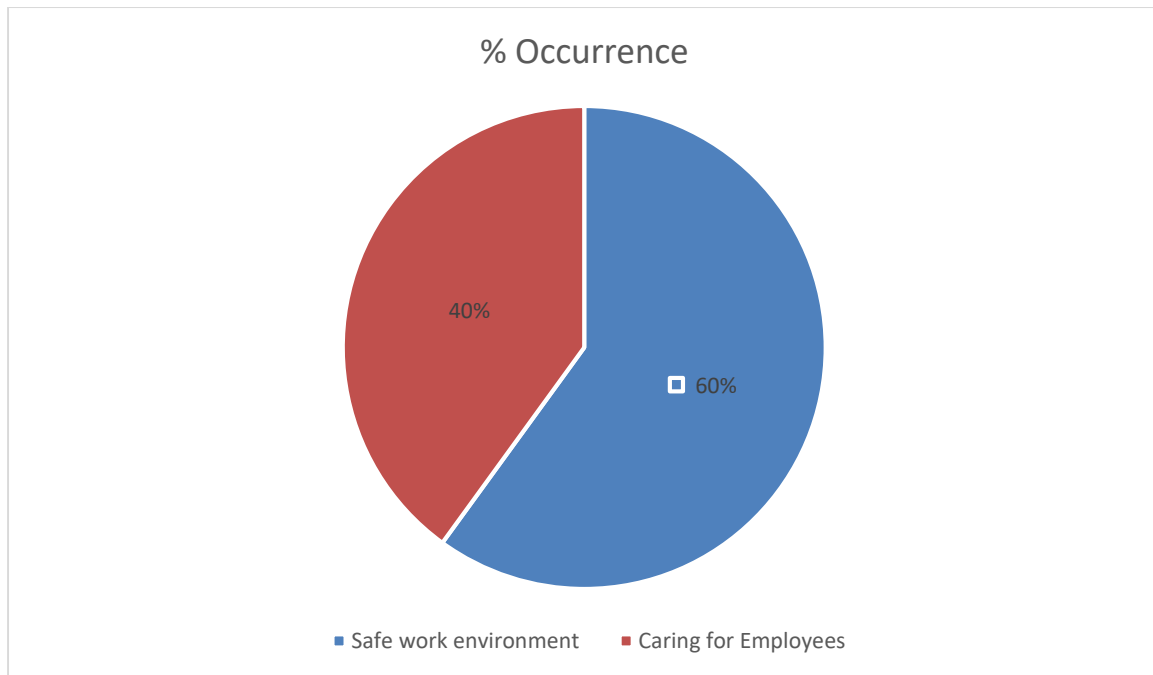
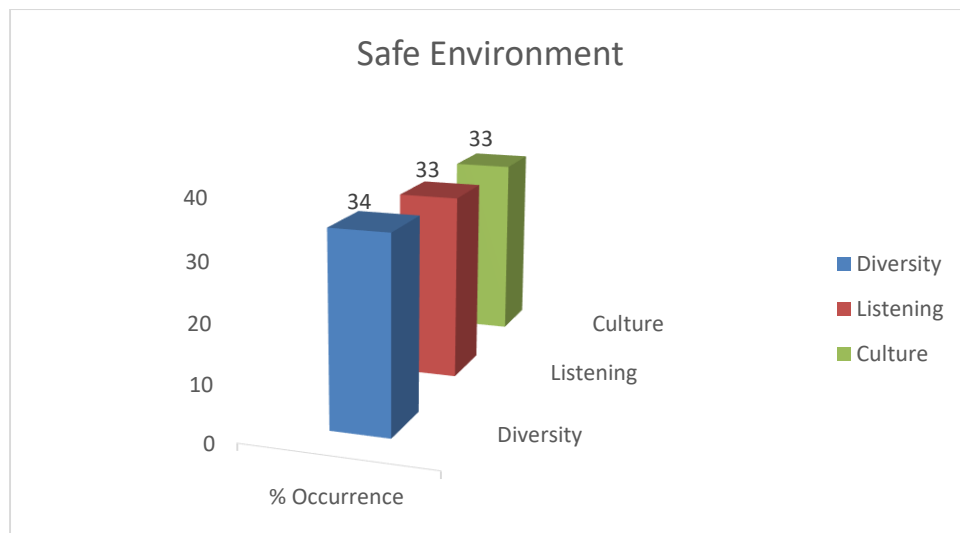


Table2

Inductively Developed Thematic Theme: Safe work Environment

<i>Category</i>	<i>Code</i>	<i>Source</i>	<i>% Relative Occurrence</i>
<i>Diversity</i>	<i>Work Rotation</i>	<i>Organization structure chart, newsletter, weekly update bulletin, project planning worksheet, field notes, website, interview</i>	<i>34</i>
<i>Listening</i>	<i>Feedback</i>	<i>Interview, newsletter, weekly update bulletin, real-time feedback sample, website, QAQC, lesson learned form, website, field notes</i>	<i>33</i>
<i>Culture</i>	<i>Attitude/Behavior</i>	<i>Interview, field notes, websites, newsletter</i>	<i>33</i>

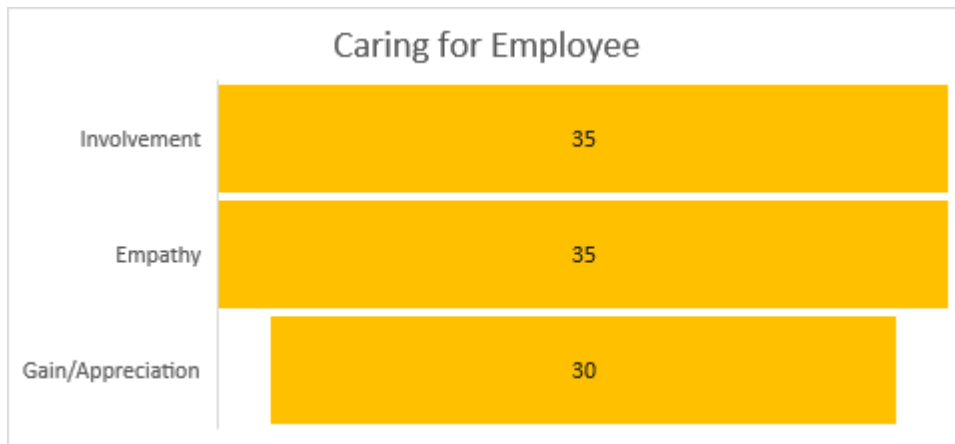


Table

3

Inductively Developed Thematic Theme – Caring for the Employee

Key Code	Category	Source	% Relative Occurrence
Involvement	Engagement	Quarterly Meetings Bulletin, Practice Group Bulletin, Project Planning Form, Interview, Newsletter, Website, Lesson Learned	35
Empathy	Encouragement	Quarterly Meeting Bulletin, Lesson Learned, Interview, Newsletter, Website, and Field notes	35
Gain/Appreciation	Benefit	Interview, Newsletter, Website, and sheet, Field notes	30



4.2: Discussion of Findings

To reach conclusions about the contribution of this study to the existing body of knowledge, we performed a data source analysis with the literature using the conceptual framework to determine the boundaries of the review. The study findings served as the main themes for the review. We discussed the contributions of this study in terms of understanding how leaders are supporting the transfer of tacit knowledge among employees. The research question that guided this study was: How do leaders in the oil and gas industries in Nigeria facilitate the transfer of tacit knowledge among employees? To address the research question, we manually coded the data from the transcribed interviews of the research participants from the two organizations to generate the themes. Two major themes emerged, and we aligned the themes with the findings from the literature review to ascertain the concurrence and to corroborate with the previous research framework.

4.2.1: Safe working Environment

From this study, we found that leaders facilitate the transfer of tacit knowledge through the creation of a safe environment for employees. This finding is supported by Garrick and Chan's (2017) that leaders are the facilitators of enabling environment that fosters employees' motivation and safety. It can be inferred that knowledge sharing, through collaboration, thrives in a safe work environment both culturally and behaviorally [32:4].

4.2.2: Caring for the Employees

A caring attitude promotes relationships, trust, and communication. Under the umbrella of caring, the findings from this study covered leaders influence on engagement, encouragement,

and the benefits in sharing knowledge. From this study, we established that leader's engagement with employees tremendously help in facilitating the transfer of tacit knowledge among employees. In addition, every encouragement by leaders brings strength to employees in effort to share tacit knowledge. Furthermore, creating opportunity to celebrate employees facilitate the transfer of tacit knowledge. The findings in this study aligned with Alegre, Sengupta, and Lapiedra (2013), and Iyamah and Ohioorenaya (2015), that knowledge sharing influences performance. Furthermore, negative feelings on how caring leaders are may dampen the sharing of knowledge and loss of such knowledge [23]. In support of the argument of Iyamah and Ohioorenaya (2015), Nonaka (1994) explained that employees will not share tacit knowledge if there is no reward for sharing the knowledge. The development of new knowledge could only be through interactions among employees while organization determines the extent of the interaction [33].

5.0: CONCLUSION AND RECOMMENDATIONS

Tacit knowledge transfer has been a topical issue in industrial and educational institutions. From this study, we recognized the knowledge gap created is due to the labor scarcity created by the exit of experienced personnel. Findings indicated that leaders facilitated the transfer of tacit knowledge through the creation of a safe working environment and demonstration of care for the employees. The opportunity to facilitate the transfer of tacit knowledge from expert to employees managing operations after exploration enhance the stability of organizations and the communities they serve.

5.1: Recommendations

The projected number of aging or experienced workers exiting the oil and gas industry in Nigeria between 2015 and 2025 will create a labor scarcity that will affect the manpower need of the industry [42]. History has shown that no organization can thrive without formidable human resources. Therefore, it is imperative for leaders in oil and gas industries to embrace the findings in this study to promote knowledge transfer. Leaders must develop deliberate actions to promote safe environment through engagement of all employees. Leaders must encourage employees to express themselves without any fear of repression. Okafor (2019) stated that effective organizational communication is essential and is a major contributor in increasing stakeholders' commitment to operation success. However, ineffective communication reduces certainty and trust that impacts organization negatively [36]. Leaders must develop an action plan on engagement with a measurable metrics to ensure clarity of purpose among participants. It is also

recommended to develop conscious plans to appreciate employees. The implementation may vary across departments, but leaders can engage employees on how the methodology to ensure the effectiveness of the process.

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