

Transformational Leadership and Digital Maturity: The Mediating Role of Organizational Culture

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Abstract—The digital disruption era constantly threatens organizations. Leadership capacities and the dynamic of organizational culture are organization key resources to enhance organization ability among uncertainty environment. The research approach used Explanatory Research. This study aims to analyze and explain: (1) the Influence of Transformational Leadership Style on Digital Maturity; (2) the Influence of Transformational Leadership Style on Organizational Culture; and (3) the influence of Organizational Culture on Digital Maturity. This study was conducted with 50 employees who utilized digital technologies to support daily work in Telkomsel GraPARI Malang, one of the technological corporations in Indonesia as a cellular telecommunications services, as a research sample with a saturated sampling technique. Data collection used questionnaires. The results of this study indicate that: (1) Transformational Leadership Style implementation has a significant effect on Digital Maturity; (2) Transformational Leadership Style implementation has a significant effect on Organizational Culture; and (3) Organizational culture has a significant effect on Digital Maturity and indirectly can enhancing relationship between transformational leadership and digital maturity.

Keywords—*transformational leadership, digital maturity, organizational culture, disruption*

I. INTRODUCTION

The digital disruption era has made the organizational environment uncertainty. Organizations are faced with a greater risk of failure if they are not able to create innovation to be able to survive and compete. The disruption impact will affect almost everything in the organization, thus giving great pressure on the organization to adapt with environmental changes. If the organization fails to manage change, including managing human resources, so the organization has prepared itself to plunge into the abyss of disruption and death. On the other hand, the ability of organizations to change adaptation does not mean eliminating the value of organizations that have been built for a long time. Therefore, organizations must be able to become Epigenetic Organizations, organizations that modify themselves continuously without changing their core values [1]. That means, the company's ability to create innovation, especially digital innovation, can be done through

strengthening digital maturity in responding to challenges and opportunities for digital changes so that the company's presence in the digital disruption era can be maintained and enhanced. Digital maturity as the status of a company's digital transformation and a description of the company's achievements in the context of applying a digital transformation business [2,3]. These efforts include resolving changes from an operational perspective to the product or process changes. Furthermore, digital maturity is the learning process of companies in responding to the environment changes appropriately, specifically related to digital readiness in the effort to realize the company's digital transformation [4].

In the Indonesian context, digital maturity remains a challenge for various companies. According to the IMD World Digital Competitiveness [5], Indonesia's digital competitiveness is in the low category. Indonesia is ranked 62 out of 63 of the world's economies surveyed, only ahead of Venezuela and last ranked below Mongolia from the 14 countries in the Asia-Pacific surveyed. The low score of digital competitiveness is due to the lack of attention in terms of developing Human Resources (HR) owned, especially related to digital maturity, digital readiness, and digital transformation. Digital transformation is first and foremost an enterprise-wide business transformation, and technology should rather be seen as second in order priority [6]. Digital maturity is an important process before arriving at digital transformation. The success of digital transformation is largely determined by the role of leaders who have a vision to direct the organization. Leadership and strategy are the key to successful digitalization, but businesses often fail to give them sufficient consideration [7].

Furthermore, the way to achieve digital maturity in an organization, leadership skills are needed, one of which is the transformational leadership style. Digital transformation also requires the development of organizational culture toward a culture that is more open to creativity and innovation driven by technology. Companies that want to achieve continued success in business need an organizational culture that is conducive to supporting the process of adopting and developing digital technology [1]. It is important to note that leadership is crucial in starting to create a culture and has to also manage and

sometimes change it [8]. Culture is an essential element in driving a successful business transformation [9]. Changes in the external environment must be able to be responded to either by the internal environment of the organization. Organizational culture can help to create an internal response to changes that are happening.

Telkomsel is a telecommunications operator provider in Indonesia. Telkomsel is a company that directly felt the onslaught of disruption era that peaked in 2009 when WhatsApp launched a free text messaging service, then followed by other instant messaging applications such as LINE, WeChat, Telegram, KakoTalk. In 2012, Telkomsel began launching a transformation program in response to the onslaught of the disruption era that hit telecommunications companies. The company transformation process carried out by Telkomsel has been running since 2012 and continues to focus on organizational culture, people and organizational transformation including Telkomsel GraPARI (Graha Pari Sraya) Malang to survive the abyss of disruption.

There are three main requirements that must be done to be able to escape the gap of disruption, namely digital expertise and competence, digital leadership, and digital capabilities [10]. All three depend on the extent to which organizations develop their organizational culture towards a 'digital mindset'.

This study aims to explore the effect of transformational leadership on digital maturity, transformational leadership on organizational culture and organizational culture on digital maturity.

II. RELATED WORK

A. Transformational Leadership and Digital Maturity

Transformational leadership based on the relationship and influence of leaders with subordinates or followers [11]. Followers will feel trust, admiration, loyalty and respect for leaders, and have a high commitment and motivation for achievement and higher performance. Transformational leadership will make subordinates have trust, admiration, and respect for leaders, and they will do more than expected [12].

Leaders have an important role for organizational success in digital transformation [1,7]. Furthermore, digital maturity can be achieved if leaders have special skills, one of which is transformational leadership style [1]. Transformational leadership characteristics are needed in responding to environmental changes, such as leaders who have the foresight to formulate a vision, the courage to take risks, and resilient in the face of rapid change.

Previous research findings show that digital leadership has a significant effect on digital maturity [2]. Understanding Digital leadership is a leadership that combines the implementation of transactional and transformational leadership styles. Digital leadership plays an important role in enhancing digital capabilities in organizations that will have an impact on digital maturity so as to create value for

organizations [13]. Furthermore, Leaders who have an understanding of technology and keep up to date with digital trends would enhance the digital insights aspects of digital maturity within the organization.

- Hypothesis 1: Transformational Leadership (X) significantly affects on Digital Maturity (Y).

B. Transformational Leadership and Organizational Culture

Various literature proves that transformational leadership has a significant effect on organizational culture, but there is little literature in the context of digital transformation. Leadership is an important factor in creating a digital organizational culture needed to improve digital maturity by changing employee behavior towards digital transformation. Leadership style, both transactional and transformational, significantly influences the formation of organizational culture which is oriented towards increasing digital maturity through digital transformation processes [2]. The leadership style also plays a role in ensuring that the values and cultural norms prevailing in the organization support the enhancement of digital maturity.

- Hypothesis 2: Transformational Leadership (X) significantly effects on Organizational Culture (Z).

C. Organizational Culture and Digital Maturity

Organizational Culture is a system of shared meanings believed by members that distinguish the organization from other organizations [14]. This system of shared meanings, if observed closely, is a set of main characteristics valued by organizations. That is, organizational culture is a value that is the basis of all members of the organization in carrying out all activities to achieve organizational goals. Characteristics of a business organization environment that is full of uncertainties requires the organization's culture to be able to respond well and wisely, including the digital changes that are happening at the moment.

Culture is an essential element in driving a successful business transformation [9]. Culture is one of the factors that influence the success of organizations in increasing digital maturity [7]. Furthermore, Organizational culture is important in the process of transition and transformation of digital companies [15].

- Hypothesis 3: Organizational Culture (Z) significantly effects on Digital Maturity (Y).

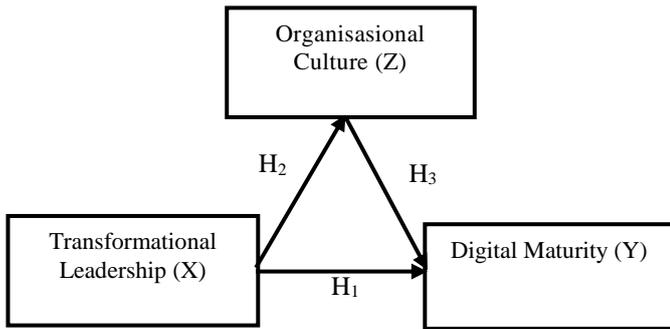


Fig. 1. Hypothesis model.

III. METHODOLOGY

This type of research is explanatory research with a quantitative approach. The study was conducted at Telkomsel GraPARI Malang involving all 50 employees so that the sampling technique used nonprobability sampling with census or saturated sample techniques. The measurement scale uses a Likert scale. The statements were delivered closely with 4 alternative answers, namely strongly disagree, disagree, agree, strongly agree. This is to avoid respondents' biased answers. The instrument measurement was carried out with a validity and reliability test. Data analysis used SPSS software as a statistical tool to describe respondents' profiles, descriptive analysis, and path analysis to test hypotheses.

There are 4 dimensions of transformational leadership used in this study as developed by Avolio and Bass [11]. These dimensions are (a) Idealized influence (charismatic), leaders provide vision and sense of mission, instill a sense of pride, gain respect and trust; (b) Inspirational motivation, the leader stimulates the enthusiasm of followers to the task and can foster subordinate confidence in the ability to complete tasks to achieve goals; (c) Intellectual stimulation, leaders who value subordinate ideas (promote intelligence), develop rationality, creativity, innovation, and carry out careful problem solving; (d) Individualized consideration, the leader gives personal attention, respects the differences of each individual, gives advice and direction.

Furthermore, this study used 9 dimensions to measure digital maturity as developed by Chanias and Hess [3], namely (a) Customer Experience, the company's ability to adapt to changes in digital behavior and new expectations of customers; (b) Product Innovation, the ability to evaluate aspects of the expansion and development of products and services using IT (Information Technology); (c) Strategy, the ability to elaborate between corporate strategy and digital transformation strategy; (d) Organization, the company's ability to design organizational structures that support digital transformation; (e) Process Digitalization, capabilities related to internal process adaptation, standardization and automation; (f) Collaboration, the interaction between employees (communication, knowledge sharing) in the process of digital transformation; (g) ICT (Information, Communication, Technology) Operation and Development, technological capabilities of a company; (h)

Culture & Expertise, corporate culture flexibility towards digital change; (i) Transformation Management, the leader's commitment in managing the company's digital transformation process.

While organizational culture measurement in this study used 7 characteristics of organizational culture developed by Robbins [14], namely: (a) innovation and risk-taking, employees are encouraged to be innovative and dare to take risks; (b) attention to detail, employees are expected to show care in every job; (c) outcome orientation, focusing on results, not on the techniques and processes used to obtain these results; (d) people orientation, the company's decision making involved people within the company; (e) team orientation, the work fulfillment is more emphasized on teamwork than individual work; (f) aggressiveness, sense of responsibility, discipline and fair competition from every employee in completing his work; (g) stability, a comfortable, peaceful and respectful organizational environment.

IV. RESULTS AND DISCUSSION

A. Characteristics of Respondents

Based on the tabulation of data from questionnaires that have been spread to all respondents, respondents' characteristics are presented in full through Table 1.

TABLE I. PROFILE OF RESPONDENTS

Criteria	Catagories	Frequency	Percentage (%)
Gender	Male	27	54
	Female	23	46
Age	18 - <23	8	16
	23 - <28	17	34
	28 - <32	12	24
	32 - <36	5	10
	36 - <40	2	4
	40 - <44	3	6
	44 - <48	2	4
Education	48 - <53	1	2
	Under-graduate	49	98
Working Experience	Master Degree	1	2
	0 - <4	22	44
	4 - <8	18	36
	8 - <12	4	10
	12 - <16	5	8
	16 - <20	1	2

Source: processed primary data, 2019

Table 1 shows that 54% of respondents were male, the average age of 23 to 28 years. This means that the employees of Telkomsel GraPARI Malang are dominated by Y and Z generations who are closely following technological developments. While referring to educational background, 98% of respondents have an undergraduate education background so that it is classified as an educated or expert workforce and as many as 44% works less than 4 years (classified as new employees) at Telkomsel GraPARI Malang so that it has potential in organizational development.

B. Descriptive Statistics

The descriptive statistical analysis is expected to understand the respondent's impression of all questions in the survey. Completely, descriptive statistical analysis of transformational leadership (X), digital maturity (Y), and organizational culture (Z) are clarified below.

1) *Transformational leadership*: The transformational leadership variable consists of 13 statements which are divided into inspirational motivation (4 statements), idealized influence (3 statements), intellectual stimulation (3 statements), and individual consideration (3 statements). The Grand Mean obtained from the transformational leadership variable is 3.43 in the very good category. This means that respondents perceive the implementation of the transformational leadership style in Telkomsel GraPARI Malang very well. Intellectual Stimulation Indicator (3.47) has the highest mean score, followed by Inspirational Motivation (3.46), Idealized Influence (Charismatic), (3.45), and Individualized Consideration (3.35). The four indicators show that the average respondent perceives the transformational leadership style has been implemented very well. There are three items that have the highest average (mean score 3.50), namely leaders foster self-confidence to employees, leaders establish good communication with employees, and leaders encourage employees to be creative.

There are also items that have the lowest average of leaders listening to individual complaints (mean score 3.30). The data shows that two of the three items with the highest average are in the Inspirational Motivation indicator but the highest mean is obtained by the Intellectual Stimulation indicator. Whereas the Individual Consideration indicator is still below other indicators. Based on the mean numbers above shows that communication goes well between leaders and employees in terms of motivating and increasing employee enthusiasm to achieve common goals. While attention to individuals in terms of giving advice and direction and excavation of individual potential even though in the very good category but needs to be improved so that the presence of leaders is really felt by subordinates.

2) *Digital maturity*: Digital maturity variables consist of 27 statements divided into customer experience (3 statements), product innovation (3 statements), strategy (3 statements), organization (3 statements), process digitalization (3 statements), collaboration (3 statements), ICT (3 statements), culture & expertise (3 statements), and transformation management (3 statements). The Grand Mean obtained from the digital maturity variable is 3.44. This shows that digital maturity owned by the company is very good. Customer Experience Indicator (3.48) has the highest mean score, then Strategy (3.47), Process Digitalization (3.46), ICT (3.45), Organization (3.45), Culture & Expertise (3.44), Transformation Management (3.44), Product Innovation (3.43), and Collaboration (3.35).

The items that have the highest average are the company collaborating with analytics tools to improve the optimization of their platforms (such as social media, websites, etc.) with a mean score of 3.58. While the item that has the lowest average is the company doing knowledge sharing activities to encourage collaboration (mean score 3.30). Data shows that items with the highest average are in the ICT Operation and Development indicator. Whereas the Collaboration indicator is still below other indicators. This shows that the company continues to try to improve technological capabilities such as infrastructure development and research. While the interaction between employees to collaborate towards the digital transformation process is still not optimal. The attention of the company is still in the stage of increasing infrastructure to support digital business processes.

3) *Organizational culture*: Organizational culture variables consist of 22 statements which are divided into innovation and risk-taking (4 statements), attention to detail (3 statements), outcome orientation (3 statements), people-orientation (3 statements), team orientation (3 statements), aggressiveness (3 statements), and stability (3 statements). Grand Mean obtained from the variable of organizational culture is 3.44 which shows that respondents' perceptions of organizational culture oriented towards digital transformation are very good. Aggressiveness indicators (3.48) have the highest mean score, followed by attention to detail (3.47), stability (3.47), outcome orientation (3.44), innovation and risk-taking (3.42), people-orientation (3.41), and team orientation (3.36). The team orientation indicator has the smallest score showing relevance related to collaborative efforts between employees who score the smallest of the digital maturity variables.

The items that have the highest average are employees who committed to time discipline and responsibility (mean score 3.56). While the items that have the lowest average are Employees maintaining cooperation with the work team to give the best results (mean score 3.30). Data shows that items with the highest average are in the indicator of Aggressiveness. Whereas the Team Orientation indicator is still below other indicators. This shows that the climate built in the company is a competitive climate. Whereas in teamwork, people have not yet been awakened and are still focused on individuals, meaning that individual orientation is higher than team orientation.

C. Path Analysis

1) *The influence of transformational leadership (X) on digital maturity (Y)*: The path analysis results show that the transformational leadership variable has a significant effect on the digital maturity variable. The influence of transformational leadership variables on the digital maturity variable is known from the beta coefficient of 0.225 or 22.5% which shows a positive influence. The path analysis also shows the significant value of the influence of transformational leadership on digital maturity of 0.016 where the significance value is less than

0.05 (0.016 <0.05). This means that the influence of transformational leadership (X) on digital maturity (Y) has a positive direction, meaning that transformational leadership (X) the better it will provide an increase in digital maturity (Y). Based on testing the path analysis, the hypothesis stating that transformational leadership (X) has a significant effect on digital maturity (Y) (H1) can be accepted.

It means that to achieve digital maturity in an organization, transformative leaders are needed [1,2,4]. Transformational leadership is needed to respond to change through carefulness in formulating a vision, courage to take risks, and resilient in the face of rapid change. The age characteristics of respondents including Y and Z generations also accelerated the increase in employee digital maturity through the implementation of transformational leadership. Generations Y and Z are generations that can be adaptive to changes in digital technology. Respondents' perceptions of transformational leadership style implementation through Intellectual Stimulation also strengthened the achievement of digital maturity

2) *The influence of transformational leadership (X) on organizational culture (Z):* The path analysis results show that the transformational leadership variable has a significant effect on organizational culture variables. The influence of transformational leadership variables on organizational culture variables is known from the beta coefficient of 0.973 or 97.3% which shows a positive influence. The path analysis results also show the significant value of the influence of transformational leadership on organizational culture variables of 0,000 where the significance value is less than 0.05 (0,000 <0.05). This means that the influence of transformational leadership (X) on organizational culture (Z) has a positive direction, meaning that transformational leadership (X) the better it will provide an increase in organizational culture (Z). Based on testing the path analysis, the hypothesis stating that transformational leadership (X) has a significant effect on organizational culture (Z) (H2) can be accepted.

These results support the findings of Kieser [2] which show that transformational leadership has an influence in creating an organizational culture that is able to adapt to environmental changes, especially related to digital transformation through continuous changes in employee behavior. Characteristics of respondents who have an undergraduate education background that also reinforces the implementation of transformational leadership to an organizational culture that is adaptive to digital change. This is also supported by the implementation of the transformational leadership style in Telkomsel GraPARI Malang which has been able to be perceived very well by respondents.

3) *The influence of organizational culture (Z) on digital maturity (Y):* The path analysis results show that organizational culture (Z) significantly influences the digital maturity (Y) variable. The influence of organizational culture variables (Z) on digital maturity (Y) is known from the beta

coefficient of 0.769 or 76.9% which shows a positive effect. The path analysis results also indicate the significance value of the influence of organizational culture (Z) on digital maturity (Y) of 0,000 where the significance value is less than 0.05 (0,000 <0.05). This means that the influence of organizational culture (Z) on digital maturity (Y) has a positive direction, meaning that the organizational culture (Z) the better it will provide an increase in digital maturity (Y). Based on testing the path analysis, the hypothesis stating that organizational culture (Z) has a significant effect on digital maturity (Y) (H3) can be accepted.

This is in line with what was stated by [1,7,9,15] that to achieve digital maturity in an organization, organizational culture is conducive to supporting the process of adoption and development of digital technology for generating business performance and achieve sustainable success. This organizational culture is needed because it is something that allows a company to be more alert in responding to the coming of digital disruption. The characteristics of Telkomsel GraPARI Malang employees who are dominated by generation Y and Z and have high education become main capital to accelerate the digital maturity of the company. The employee's commitment to continued discipline and excellent responsibility also supports the organizational culture that is in line with the creation of digital maturity.

4) *The influence of transformational leadership on digital maturity through organizational culture as an mediating variable:* Table 2 shows that Transformational Leadership (X) has a direct effect on Organizational Culture (Z) of 0.973, while the direct influence of Organizational Culture (Z) on Digital Maturity (Y) is 0.769, and the results of the direct influence of Transformational Leadership (X) on Digital Maturity (X) Y) is 0.225.

TABLE II. DIRECT AND INDIRECT EFFECT

Relationship	Direct Effect	Indirect Effect
X on Y	0,225	0,973 x 0,769 = 0,748
X on Z	0,973	-
Z on Y	0,769	-

Source: processed primary data, 2019

Furthermore, transformational leadership has a greater influence on digital maturity if through organizational culture with a value of 0.748. This shows that organizational culture has a significant role in mediating the relationship between transformational leadership and digital maturity. That is, transformational leadership will be more effective in creating digital maturity if in its implementation optimizing organizational culture.

V. CONCLUSION AND FUTURE SCOPE

This research was conducted to determine and analyze the effect of Transformational Leadership on Digital Maturity with Organizational Culture as a mediating variable. Based on the results of the descriptive analysis shows that Transformational

Leadership implementation in Telkomsel GraPARI Malang has been done very well. The level of Digital Maturity owned by Telkomsel GraPARI Malang employees is also in the very high category, as well as the Organizational Culture of Telkomsel GraPARI Malang is in a very strong category.

- Transformational Leadership (X) has a significant effect on Digital Maturity (Y).
- Transformational Leadership (X) has a significant effect on Organizational Culture (Z).
- Organizational Culture (Z) significantly influences Digital Maturity (Y)
- Transformational leadership has a greater influence on digital maturity through organizational culture

Future studies are expected to develop Digital Maturity variables. Considering that research with the theme of digital maturity is still very little. Digital leadership, digital transformation, digital creativity, and digital culture can be considered in further research. The research will also be interesting if carried out in the SMEs sector considering the SMEs is a sector with the largest business actors in Indonesia. The challenges of SMEs in the digital era are interesting to studies.

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