

LEADERSHIP TYPES IN SUPPORT OF CREATIVITY AND INNOVATION WITHIN VIDEO GAME STUDIOS IN INDONESIA

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Abstract: This study explores the leadership type most impacting organizational climate, creativity, and innovation in game studios. This study also addresses a gap in previous studies: organizational creativity's role in producing innovative products. This quantitative study of 68 respondents consisting of managers/owners and employees of game studios in Indonesia analyzes the type of leadership that affects organizational climate, creativity, and, ultimately, corporate innovation using an electronic survey during the COVID-19 pandemic. The respondents were acquired by invitations dispersed with the help of managing members of Asosiasi Game Indonesia and game developer social networks. The survey results were analyzed using the structural equation modeling partial least squares technique (PLS-SEM) using SmartPLS 3 software. This study shows that transformational leadership is the dominant leadership type and positively impacts a supportive organizational climate; such a climate also impacts organizational creativity. Transformational leadership also affects the kind of innovation in game studios. Understanding the factors of producing creative and innovative products in creative teams should improve the growth of video game producers.

Keywords: creative industry, indonesia, leadership style, organizational innovation, video game development

Abstrak: Studi ini mengeksplorasi tipe kepemimpinan yang paling berpengaruh terhadap iklim organisasi, kreativitas, dan inovasi di studio game. Penelitian ini juga mencoba untuk menjawab gap pada penelitian sebelumnya yaitu peran kreativitas organisasi dalam menghasilkan produk yang inovatif. Studi kuantitatif terhadap 68 responden yang terdiri dari manajer/pemilik dan karyawan studio game di Indonesia ini menganalisis jenis kepemimpinan yang mempengaruhi iklim organisasi, kreativitas organisasi, dan pada akhirnya inovasi organisasi menggunakan survei elektronik selama pandemi COVID-19. Responden diperoleh dari undangan yang disebar dengan bantuan anggota pengelola Asosiasi Game Indonesia dan jejaring sosial pengembang game. Hasil survei dianalisis menggunakan teknik structural equation modeling partial least square (PLS-SEM) dengan menggunakan aplikasi SmartPLS 3. Studi ini menunjukkan bahwa kepemimpinan transformasional merupakan tipe kepemimpinan yang dominan dan berdampak positif pada iklim organisasi; iklim tersebut juga berdampak pada kreativitas organisasi. Kepemimpinan transformasional juga ditemukan memengaruhi jenis inovasi di studio game. Pemahaman tentang faktor yang menghasilkan produk kreatif dan inovatif dalam konteks tim kreatif dapat membantu upaya meningkatkan pertumbuhan jumlah produsen video game.

Kata kunci: gaya kepemimpinan, indonesia, industri kreatif, inovasi organisasi, pengembangan video game

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INTRODUCTION

The Indonesian creative industry has been growing steadily, and its contribution to the nation's GDP has increased since 2014. Of the sixteen sectors within the creative industry formally recognized by the Indonesian government, the application and game development sector provides a significant potential for economic growth due to its growing market size within the country and globally. In 2020, the global video game market grew positively by 9.3%, reaching USD 159 billion. It is also predicted that the market will reach USD 200 billion by 2023 (Newzoo, 2020). Newzoo also stated that in 2020, the Indonesian video game market was worth USD 1,754 billion and had reached the rank of sixteenth in the world. According to the Indonesian Agency for Creative Economy (ACE), the creative industry contributed approximately USD 76.6 billion to the GDP in 2018 (Sabdarini, 2018). Defined by ACE as one of sixteen sectors of the Indonesian creative industry, the application and video game sector is the fifth most significant contributor. The video game industry's growth provides economic growth opportunities for the country.

Game development requires diverse expertise in programming, story development, sound and music development, and computer graphics artistry. Games have a limited 'shelf-life', and thus need to be continuously updated. Players in the industry need to keep up with consumer demands to be sustainable and competitive. Game studios must be able to handle stress to cope with explorative and exploitative activities simultaneously (Wikhamn et al. 2016).

Game studios' management needs leadership capable of leading and growing creative and innovative teams. This study is focused on examining the relationships between leadership, organizational climate, organizational creativity, and organizational innovation (OI) in video game studios. Leadership plays an essential factor in OI due to its role in creating a supportive environment for innovation. The type of innovation produced will also be examined.

Leadership is a critical factor for the growth and sustainability of any organization. Previous studies have used various definitions of leadership. Recent studies, however, define a leader as having the role to create and influence the environment within an organization through empowerment, task distribution,

and supporting organization members (Alblooshi et al. 2020). In an organization that endeavors to produce innovative products, leadership affects people's commitment to engage in creative projects (Mumford et al. 2002).

Furthermore, leadership can be defined in many ways and affected by many variables, such as context and circumstance, so there is no universally accepted definition of leadership. However, the neo-charismatic movement within the study of leadership provides a behavioral approach that examines leadership by identifying how a leader shares a vision and introduces a change to the organization. This affects followers' commitment to achieving the organization's goals (Fiol et al. 1999). This study used a survey and adopted the Multifactor Leadership Questionnaire (MLQ) to identify the leadership style as an antecedent of innovation (Antonakis & House, 2013; Hughes et al. 2018). Current definitions of leadership, such as transactional, transformational, charismatic, and visionary leadership, focus on how leaders develop and affect organizational culture by empowering workers, distributing work, and providing support to increase productivity (Alblooshi et al. 2020).

Although many studies have been done on leadership about organizational climate, creativity, and innovation, there needs to be more literature regarding the context of highly creative and innovative organizations such as game studios. Thus, this study examined the relationship between leadership types, organizational climate, organizational creativity, and innovation in the context of highly creative teams specifically, creative teams in the game development industry in Indonesia. Understanding leadership in the context of the game development industry is valuable in ensuring growth for small and medium enterprises so that their contribution to the economy can be increased (Wahyudi et al. 2021). The creative process which leads to innovation is essential for organizational growth and success (Anderson et al. 2014; Pradana & Uliani, 2021). To generate innovative outcomes, leadership is a precursor for creating a conducive environment (Lee et al. 2020). The role of leaders is to set goals, make policies and procedures, and facilitate workers in developing creative and innovative capabilities (Mehmood et al. 2019). In the context of creativity, leaders also create a favorable environment, distribute resources, influence appropriate team member behavior, and encourage learning (Lee et al. 2020; Koziół-Nadolna, 2020).

For this study, innovation is defined as the implementation of new ideas that provide new values to an organization's customers and therefore results in growth for the organization (Alblooshi et al. 2020). It is a complex multilevel phenomenon that begins with idea generation and ends with implementing some ideas at the individual, group, and organizational level (Hsu & Chen 2017). Within the phases of an innovation process, exploration and exploitation will occur (Zuraik & Kelly 2019). The relationship between innovation and the activities of exploration and exploitation is not unique; based on the literature, its characteristics vary based on the technological intensity and industry of the organization (Guisado-González et al. 2017). Furthermore, in studying innovation, one must consider the social context of individuals inside the organization. That social context can increase individual innovativeness through intrinsic motivation, which is driven by an organizational innovation climate (Hsu & Chen, 2017). Although many studies have been done on leadership about organizational climate, creativity, and innovation; there is a gap in literature regarding the context of highly creative and innovative organizations such as game studios.

Thus, this study was conducted to examine the relationship between leadership types, organizational climate, organizational creativity, and innovation in the context of highly creative teams specifically, creative teams in the game development industry in Indonesia. Understanding leadership in the context of the game development industry is valuable in ensuring growth for small and medium enterprises so that their contribution to the economy can be increased (Wahyudi et al. 2021).

METHODS

Although transformational leadership dominates the literature on innovation, it may not be the most effective type of leadership in the video game industry. This study therefore uses full-range leadership theory (FLRT), which is represented as three constructs consisting of transformational (TFL), transactional (TSL), and passive avoidant leadership (PAL) (Antonakis, Avolio, & Sivasubramaniam 2003). FLRT provides an integrative representation of different leadership theories (Antonakis & House, 2013). Thus, leadership or FLRT will impact innovation in a positive way in video game studios. Through this reasoning, the following hypotheses can be made:

- H1:** Transformational leadership will have a positive impact on innovation video game studios.
- H2:** Transactional leadership will have a positive impact on innovation in video game studios.
- H3:** Passive avoidant leadership will have a positive impact on innovation in video game studios.

Organizational climate (OCL) embodies the perceptions of employees towards the characteristics of the work environment. Alternately, it can be considered the organization's 'sociological context' (Alblooshi et al. 2020). Furthermore, (Zuraik & Kelly, 2019) asserted that leadership and climate act as systems that affect all employees pursuing innovation. Pursuing innovation is implementing the right policies and processes and creating the right atmosphere to support it.

Since video game development requires diverse expertise, the typical development team comprises developers of various backgrounds and workflows. Moreover, the development process will consist of many iterations, from ideation to actual production. Before a game is released, testers will be involved, and their feedback may result in more iterations of development for implementing changes to features, gameplay, or fixes. That type of work requires an innovative climate that encourages risk-taking, access to the necessary resources, and creating a challenging environment (Mehmood et al. 2019). Zuraik (2019) further stated that creating the suitable climate is essential for generating innovation since it rewards creativity and allows for mistakes in achieving goals. Therefore, the following hypothesis can be proposed:

- H4:** Transformational leadership will have a positive impact on OCL in video game studios.
- H5:** Transactional leadership will have a positive impact on OCL in video game studios.
- H6:** Passive avoidant leadership will have a positive impact on OCL in video game studios.

Organizational climate perceptions can be a good predictor of workers' creativity; however, there is a need to study the actual creative processes and creative work. Those creative processes or organizational creativity (OCR) can be defined as the processes leading to the development of ideas, products, services, or processes by workers in a complex social system (Borghini, 2005). There is the gap in the literature regarding the processes that result in creativity (Hsu & Chen, 2017). Therefore, this study treats creativity as a construct due to the nature of work in the industry.

One of the most cited works in the study of creativity in management is Amabile's componential theory of creativity. Using a psychological perspective in the study of invention, in the componential view of creativity Amabile described how the creative process is affected by domain-relevant skills, task motivation, and creativity-relevant skills (Amabile, 1983). Amabile further explained creativity at the organizational level in another study. In that study, Amabile demonstrated motivational factors affecting creativity include external motivation, such as motivation from leaders (Amabile, 1988). However important, Amabile's work is very limited in scope; the studies focused mainly on employees specializing in creative output (Mayfield & Mayfield, 2010). Mayfield and Mayfield (2010) developed the creative environment perception (CEP) instrument for all workers. The CEP scale was developed based on Amabile's and others' work and can be used to measure the provision of creativity resources, work characteristics, and creativity blocks to be used at the organizational level (Mayfield & Mayfield, 2017; Mayfield & Mayfield, 2010).

Although game developers can be considered as creative workers, this study needs to measure the extrinsic and intrinsic motivators related to the creative processes for all workers, including managers who are not necessarily involved in actual game development. Based on that logic, the following can be hypothesized:

- H7:** Transformational leadership will have a positive impact on OCR in video game studios.
- H8:** Transactional leadership will have a positive impact on OCR in video game studios.
- H9:** Passive avoidant leadership will have a positive impact on OCR in video game studios.

Much of the literature in innovation examines the role of OCL since it is a good predictor of creativity and OI. Other than supporting innovative behavior, OCL also supports the development of imagination (Mehmood et al. 2019). An effective OCL will support individuals' effort in developing and implementing ideas. Mehmood et al. also stated that within an innovative organization, the perception created by the environment (climate) supports risk-taking behavior, creating a challenging environment that enables creativity with adequate resources provided by the organization.

However, how a creative idea is implemented is equally important as how the concept is generated initially. Therefore, this study treats creativity as a construct

due to the nature of work in the industry. As discussed, innovation happens within interactions of people (Hsu & Chen, 2017; Zuraik & Kelly, 2019); furthermore, OCL is a significant factor in allowing the occurrence of innovation since it creates a positive social context and/or perception for the employees (Alblooshi et al. 2020; Hsu & Chen, 2017). There is undoubtedly a gap in innovation research in clarifying the role of creativity (Hsu & Chen, 2017), which this study tries to address. The nature of creative work in video game studios supports the idea of treating OCR as intervening in the relationship between OCL and innovation. This rationale leads to the following hypothesis:

- H10:** OCL will have a positive impact on OCR in video game studios.
- H11:** OCR will have a positive impact on innovation in video game studios.

The conceptual framework was constructed based on the review of literature done on OI with a focus on the internal factors that result in innovation. The framework illustrates the relationships between the constructs of leadership, organizational climate, creativity, and innovation. Figure 1 describes this research framework in detail.

This study was conducted through an online survey between January and February 2020. The survey was directed to managers and developers of game studios in Indonesia during the COVID-19 pandemic, when most businesses were forced to have their employees working from home. Sixty-eight samples were collected from various game studios throughout five cities in Java: Jakarta, Bogor, Bandung, Yogyakarta, and Malang. Invitations to fill in the questionnaire were sent electronically with the help of managing members of *Asosiasi Game Indonesia* and through the social networks of game developers. This is done to ensure the samples were professional game developers. The game studios are relatively small in size. Most studios had less than 20 employees; however, one established studio had more than 250 employees.

The instrument was written in Indonesian, and participants were invited to fill out the survey either directly and/or through invitations from game developer-specific social media groups. A login account was required to ensure respondents completed the survey only once. The instrument asked the participant's role in the game studio as either a leadership position or a development team member.

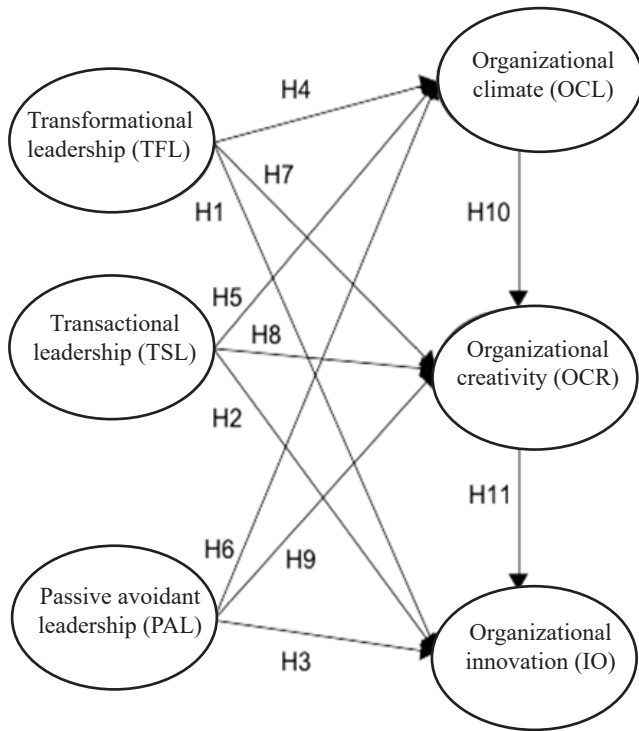


Figure 1. Research framework

The questionnaire used was developed using the constructs in the research framework. A five-point Likert scale was used for all measures. Furthermore, for leadership, the multi-factor leadership questionnaire (MLQ) was used to model FLRT (Avolio & Bass, 2004). The MLQ measures idealized influence (attributed), idealized influence (behavior), inspirational motivation, intellectual stimulation, individualized consideration, contingent reward, management-by-exception active, management-by-exception passive, and laissez-faire. For measuring OCL, an adaptation of the team climate theory was developed by Michael West in 1990 (Anderson et al. 2014). The approach identified four environmental factors supporting innovation development: vision; participative safety; task orientation; and support for innovation (Anderson & West, 1996). Those factors were then made into the team climate inventory (TCI) as an instrument (Anderson & West, 1996). The creative environment perception (CEP) instrument was used in measuring organizational creativity. CEP consisted of measures for support for creativity, work characteristics, and blocks to creativity (Mayfield & Mayfield, 2010). Finally, for measuring innovation, organizational ambidexterity was used (O’Reilly III & Tushman, 2013). Tushman and O’Reilly defined organizational ambidexterity as the capability for an organization to pursue incremental and discontinuous innovation through the implementation of “contradictory structures, processes, and cultures”. Organizational ambidexterity

is measured through explorative innovation and exploitative innovation, which represents incremental innovation and discontinuous innovation (O’Reilly III & Tushman, 2013).

Partial least squares structural equation modeling (PLS-SEM) through the SmartPLS 3 software was used for specifying the structural model data analysis. The use of PLS-SEM was decided due to the small number of respondents. Only fourteen game development studios are listed as members of *Asosiasi Game Indonesia* (Indonesian Game Association).

RESULTS

The population of this study were employees and owners of game studios. Sixty-eight respondents were found to be valid. Table 1 describes the demographics of the respondents. Most employees of game studios are male (84%). The educational background of employees was undergraduate degrees or 4-year diplomas. In terms of years of service, 31% have worked for at least four years, which is interesting; it showed that many employees are loyal to their company.

In assessing the second order measurement model, a two-stage approach was chosen (Sarstedt et al. 2019). At the first stage, examination of construct reliability and validity was conducted. The measurement model in the first stage consisted of indicators of latent variables of the variables in the model. Thus, as specified in the MLQ instrument: TFL has 20 indicators, TSL has 8 indicators, and PAL has 8 indicators. For measuring organizational climate, the TCI instrument was used which has 38 indicators. CEP, the instrument used in measuring organizational creativity has 9 indicators. Finally, in measuring organizational innovation, instrument for measuring ambidexterity has 12 indicators. Table 2 describes the number of indicators, latent variables for each variable.

For the first order analysis, the measurement model was examined by assessing the indicator reliability, composite reliability, convergent, and discriminant validity. All outer loadings of indicators are above 0.5; indicators below that prescribed value are removed from the model (Hulland, 1999). Furthermore, all the constructs have the values for their composite reliability above 0.7. The constructs then could be considered reliable. In examining the validity of the constructs,

verification of the average variance extracted (AVE) was made by ensuring that all constructs had a value of 0.5; that ensured convergent validity.

The Fornell-Larcker criterion was used for the assessment of discriminant validity. The results showed that all the constructs' loadings values, which are the square root of its AVE value, were the loadings on other constructs (Fornell & Larcker, 1981); thus, discriminant validity was verified. To test the inner model, an

evaluation of R Square, path coefficient, T-statistic, predictive relevance and fit model was carried out. The second order measurement model was constructed by using latent variables scores that were carried out in the first stage (Sarstedt et al. 2019). The results showed that organizational climate and organizational creativity had values that could be categorized as moderate. Meanwhile organizational innovation was categorized as weak. Figure 2 describes the structural model after the second order computation was done.

Table 1. Descriptive analysis of demographics

Description	Frequency	Percent	Description	Frequency	Percent
Respondents	68		Education (Master)	6	9%
Age < 20 years	1	1%	Education (Technical High School)	9	13%
Age 20-25 years	29	43%	Others	1	1%
Age 26-30 years	18	26%	Year of service <= 1 year	17	25%
Age > 30 years	20	29%	Year of service 1-2 years	16	24%
Female	11	16%	Year of service 2-3 years	8	12%
Male	57	84%	Year of service 3-4 years	6	9%
Education (Diploma)	6	9%	Year of service more than 4 years	21	31%
Education (Undergraduate or 4 yr Dpl.)	46	68%			

Table 2. Indicators of latent variables and variables in the study

Instrument	Variable	Latent variables	# of indicators
Multi-factor leadership questionnaire (MLQ)	Transformational leadership (TFL)	Idealized attributes	4
		Idealized behaviors	4
		Inspirational motivation	4
	Transactional leadership (TSL)	Intellectual stimulation	4
		Individual consideration	4
		Contingent reward	4
	Passive avoidant leadership (PAL)	Mgmt by exception (active)	4
		Mgmt by exception (passive)	4
		Laissez-faire	4
Team climate inventory (TCI)	Organizational climate (OCL)	Vision	11
		Participative safety	12
		Task orientation	7
		Support for innovation	8
Creative environment perception (CEP)	Organizational creativity (OCR)	Support for creativity	3
		Work characteristics	3
		Blocks to creativity	3
Ambidexterity	Organizational innovation (IO)	Explorative innovation	6
		Exploitative innovation	6

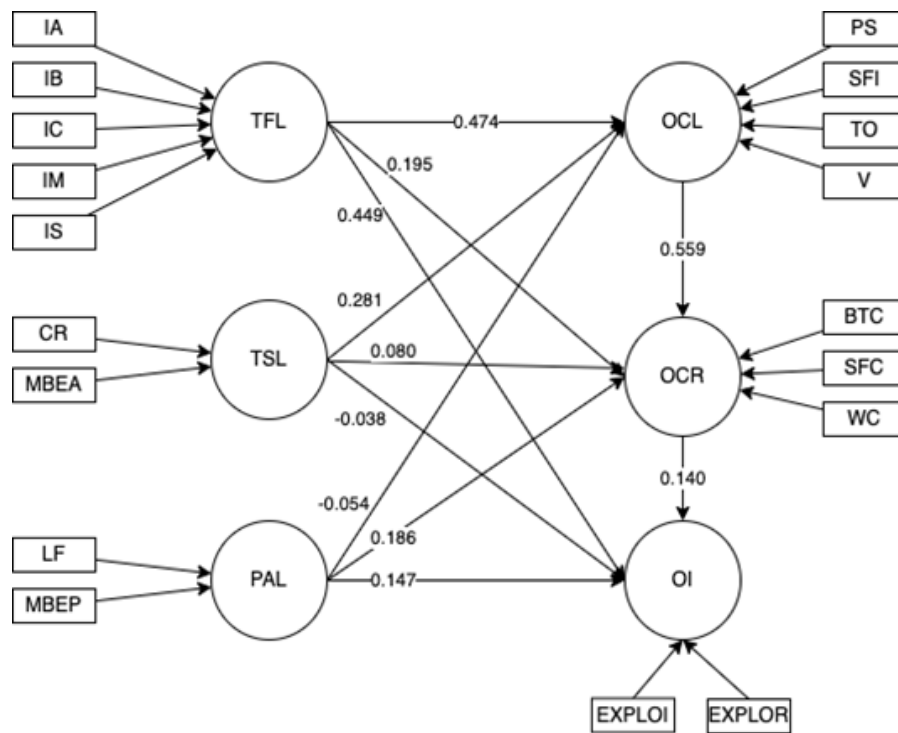


Figure 2. Second order analysis

Analysis of path coefficients showed that there was a moderate positive relationship between transformational leadership and organizational climate, organizational climate and organizational creativity, and transformational leadership and organizational innovation.

The significance test was carried out through a bootstrapping process with 5000 iterations. Predictive relevance testing was conducted to test how good the observation value was obtained through the blindfolding process. All endogenous variables got a Q^2 value above 0, so it could be stated that the model got good observation values. The final stage in structural model testing was evaluating the fit model. An evaluation was conducted by checking the NFI (normed fit index) value. The NFI figure obtained was 0.794. From the NFI value, it could be concluded that the model was 79% fit. The results of this study are summarized in Table 3.

The effect of transformational leadership on innovation

H1 states that transformational leadership (TFL) influences organizational innovation (IO). The T-statistic value on the effect of TFL on IO obtained a value of 3.060, which is more than 1.96, so the research hypothesis is accepted. This means that there

is a significant influence between transformational leadership (TFL) on organizational innovation (IO) with an influence of 0.449, so that increasing transformational leadership (TFL) will increase organizational innovation (IO).

The results showed that transformational leadership was the dominant factor of organizational innovation, in line with most literature on the subject (Zuraik & Kelly, 2019). This is also in line with studies that link TFL with intrinsic motivation which help drive experimentation (Lee et al. 2020; Hughes et al. 2018). Idealized attributes and individual consideration, both of which are dimensions of TFL, also had a low influence in the study. Idealized attributes as a dimension of TFL also had a low influence. The transformational leader displayed self-confidence that impacts followers to assimilate the leader's vision and goals (Anderson & Sun, 2017); (Den et al. 1997); the heavy reliance on the development team to come up with design ideas and implementation may explain this result.

Inspection of innovation using ambidexterity theory shows that game studios in Indonesia are focused more on developing games based on existing ones (Arsenault, 2009); which is reflected in the higher value for exploitative innovation. Furthermore, most game studios in Indonesia are relatively small organizations with fewer than 30 employees and therefore have less

creativity-innovation correlation due to their limited resources in supporting creative endeavors (Revilla & Rodríguez-Prado, 2018).

The effect of transactional leadership on innovation

H2 states that transactional leadership (TSL) influences organizational innovation (IO). The T-statistic value on the effect of TSL on IO obtained a T-statistic value of 0.241, which is less than 1.96, so the research hypothesis was rejected. meaning that there is no significant effect between transactional leadership (TSL) on organizational innovation (IO). For contingent reward and management by exception, both dimensions of transactional leadership had very weak effect in the study. TSL which is associated with extrinsic motivation does not seem to have a strong influence in the game studio context.

The effect of passive avoidant leadership innovation

H3 states passive avoidant leadership (PAL) influences organizational innovation (IO). The T-statistic on the effect of PAL on IO obtained a T-statistic of 1.005 with a value less than 1.96 so that the research hypothesis was rejected. meaning that there is no significant

influence between passive avoidant leadership (PAL) on organizational innovation (IO).

The effect of transformational leadership on organizational climate

H4 states that transformational leadership (TFL) influences organizational climate (OCL). The T-statistic value on the effect of TFL on OCL obtained a value of 3.862, which is more than 1.96, so the research hypothesis is accepted. There is a significant influence of transformational leadership (TFL) on organizational climate (OCL) with an influence of 0.474, so that the increasing transformational leadership (TFL) will improve organizational climate (OCL).

The effect of transactional leadership on organizational climate

H5 states that transactional leadership (TSL) influences organizational climate (OCL). The T-statistic value on the influence of TSL on OCL obtained a value of 1.577, which is less than 1.96, so the research hypothesis was rejected. There is no significant effect between transactional leadership (TSL) on organizational climate (OCL).

Table 3. Results of hypothesis testing

Hypothesis Testing	Original sample	T-values	Accept?
H1: Transformational leadership (TFL) will have a positive impact on innovation video game studios.	0.449	3.060	Yes
H2: Transactional leadership (TSL) will have a positive impact on innovation in video game studios.	-0.038	0.241	No
H3: PAL will have a positive impact on innovation in video game studios.	0.147	1.005	No
H4: Transformational leadership (TFL) will have a positive impact on Organizational climate (OCL) in video game studios.	0.474	3.862	Yes
H5: Transactional leadership (TSL) will have a positive impact on Organizational climate (OCL) in video game studios.	0.195	1.577	No
H6: PAL will have a positive impact on Organizational creativity (OCR) in video game studios.	-0.354	4.018	Yes
H7: Transformational leadership (TFL) will have a positive impact on Organizational creativity (OCR) in video game studios.	0.281	1.709	No
H8: Transactional leadership (TSL) will have a positive impact on Organizational creativity (OCR) in video game studios.	0.080	0.084	No
H9: PAL will have a positive impact on OCR in video game studios.	0.186	0.982	No
H10: Organizational climate (OCL) will have a positive impact on Organizational creativity (OCR) in video game studios.	0.559	2.733	Yes
H11: Organizational creativity (OCR) will have a positive impact on innovation in video game studios.	0.140	0.857	No

The effect of passive avoidant leadership on organizational climate

H6 states that passive avoidant leadership (PAL) influences organizational climate (OCL). The T-statistic value on the influence of PAL on OCL obtained a value of 4.018, which is more than 1.96, so the research hypothesis is accepted. meaning that there is a significant influence between passive avoidant leadership (PAL) on organizational climate (OCL) with an influence of -0.354, the coefficient has a negative sign so that increasing passive avoidant leadership (PAL) will reduce organizational climate (OCL).

Game development teams are autonomous in their problem solving and design implementation such that the leadership do not provide clear guidelines or show ability or quality in the development processes. Leaders would intervene only when one of the employees get sidetracked and take proper corrective action (Sethibe & Steyn, 2018). This may explain why PAL affect (management by exception passive) positively to organizational climate.

The effect of transformational leadership on organizational creativity

H7 states that transformational leadership (TFL) influences organizational creativity (OCR). The T-statistic value on the effect of TFL on OCR obtained a value of 1.709, which is less than 1.96, so the research hypothesis was rejected. There is no significant effect of transformational leadership (TFL) on organizational creativity (OCR).

The effect of transactional leadership organizational creativity

H8 states that transactional leadership (TSL) influences organizational creativity (OCR). The T-statistic value on the effect of TSL on OCR obtained a value of 0.842, which is less than 1.96, so the research hypothesis was rejected. There is no significant effect between transactional leadership (TSL) on organizational creativity (OCR).

The effect of passive avoidant leadership on organizational creativity

H9 states that passive avoidant leadership (PAL) influences organizational creativity (OCR). The T-statistic value on the effect of PAL on OCR obtained a value of 0.982, which is less than 1.96, so the research hypothesis was rejected. There is no significant effect of passive avoidant leadership (PAL) on organizational creativity (OCR).

The effect of organizational climate on organizational creativity

H10 states that organizational climate (OCL) influences organizational creativity (OCR). The T-statistic value on the influence of OCL on OCR obtained a value of 2.733, the value is more than 1.96 so that the research hypothesis is accepted. this means that there is a significant influence between organizational climate (OCL) on organizational creativity (OCR) with an influence of 0.559, so that increasing organizational climate (OCL) will increase organizational creativity (OCR).

Organizational climate has a significant relationship with organizational creativity since a supportive climate would positively affect creativity. This is in line with other studies related to creativity and innovation e.g., (Amabile 1983); (Woodman et al. 1993). However, the study found that there was no significant relationships between TFL & OCR, and OCR & OI. This can be explained by the nature of creativity and innovation differing from one organization to another and the potential presence of moderating variables within game studios that affect OCR (Lee et al. 2020). Another explanation could be the nature of work in game studios. Diversity has the potential of increasing creativity; however, poor interactions may affect cohesion between groups of different skillsets (e.g., graphic designers vs. programmers) and may create obstacles for creative performance (Ouedraogo & Koffi, 2018; Blomberg et al. 2017). Another potential explanation is the fact that the pandemic conditions increased workers' autonomy (Malhotra 2021) and thus working from home lessened informal interactions (Blomberg et al. 2017). Further study is needed in identifying those moderating variables and relevant instruments for measuring creativity. The pressures for completing projects on time may result as a hurdle for creativity; lack of resources (time) and work pressure was found to be a barrier to creativity (Blomberg et al. 2017).

The effect of organizational creativity on innovation

H11 states that organizational creativity (OCR) influences organizational innovation (IO). The T-statistic value on the effect of OCR on IO obtained a value of 0.857, which is less than 1.96, so the research hypothesis was rejected. meaning that there is no significant influence between organizational creativity (OCR) on organizational innovation (IO).

The weak relationship between them can be explained by the difficulty of measuring creativity. Many measures of creativity are by their outcomes and products; furthermore, differentiating creativity and innovation can be difficult (Hughes et al. 2018). Hughes et al. (2018) further explained that measures of outcomes and products are common in research in the fields of psychology and management, but those measures cannot explain the phenomenon and make a clear distinction between the phenomenon and its outcomes. This study uses CEP, which is a self-reporting measure. Studies show that a shared belief about creativity within an organization enhances creative behavior and ultimately creativity (Zhang et al. 2022; Mayfield & Mayfield, 2017). Measuring this shared belief can be the way forward in understanding organizational creativity.

Managerial Implications

This study contributes to increased literature on OI within the creative industries. Game studios offer unique challenges for managers. The results underline the impact of transformational leadership on creative and innovative outcomes. Managers need to create a climate that supports the work of diverse team members with different workflows and technical competencies. This organizational climate is antecedent to generating ideas and, therefore, creativity. Thus, the behavioral aspects of leadership are essential in creative organizations, including knowing the instances to take a step back or be passive. Those moments of non-interventionism may be necessary to allow creative workers to focus on problem-solving at their speed and allow experimentation and exploration of potential paths in acquiring the best solutions. The nature of work requires employees to work independently for problem-solving but also work as a team to integrate work components. Leaders should intervene when work significantly diverts their team from reaching project goals.

Game studios in this study are primarily small organizations of fewer than twenty workers and are still in the early growth phase of their lifecycle. Such organizations are not yet able to support innovations, which in their field meant the creation of new game genres. They are limited to developing new game titles, which replicate the gameplay of popular existing games. Leaders in such creative startups should focus on swiftly developing and introducing game titles into the market to generate revenue for the business and use that revenue to support new projects. Sustaining a positive cash flow for production, research, and marketing should be the focus for managers. This also means that video game studios should work on developing their collaborative network with communities and customers to create innovative games with sustained growth (Yuana et al. 2021). Managing the tensions between creative work and business (customers' expectations) is a necessary skill for a leader in the video game industry (Bérubé & Demers, 2019).

Governmental support should be focused on helping small organizations in the industry to market their products. This can be done by creating national game expos and supporting selected game studios to attend international trade expos in major markets (e.g., China, United States, and Japan). Such expos not only increase exposure to potential users, but also to potential game publishers and producers to help market and create new business for the organizations.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

This study identified the leadership type that typifies a manager in a video game studio. This study's results have shown that transformational leadership plays an important role in generating a conducive climate that influences a creative environment for creating innovative games. Furthermore, the organizational climate was found to have a positive impact on organizational creativity. This shows that a supportive climate supports the creation of a work system that allows creative output at the organizational level.

The study also shows that organizational creativity has a weak influence on organizational innovation; however, innovation in video game studios is directly influenced by a transformational leader. A leader should allow

technically diverse teams to work independently, but also intervene to ensure objectives are met in a timely manner.

The weak relationship between organizational climate and innovation was an interesting discovery. This highlighted the strong influence of a transformational leader in determining innovative outcomes. Decision making related to design and/or development issues is still highly influenced by leaders.

Recommendations

This study has revealed the main leadership type in an important growing industry. However, the knowledge gained can be further enhanced by overcoming some limitations in the study due to COVID-19 pandemic conditions and the relatively small number of registered video game studios in Indonesia. Firstly, increasing the sample size may statistically improve results and its interpretations. Secondly, future research may consider other instruments for measuring organizational creativity. The nature of work in the creative industries can benefit a better measurement for creative processes. Having a better measurement for organizational creativity may contribute to our understanding of how innovation may be managed and driven in the creative industries.

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