# CAN PSYCHOLOGICAL CAPITAL, LEADERSHIP STYLE, AND ENVIRONMENTAL COMPLEXITY LOWER THE COMPANY'S BUDGET GAME?

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**ABSTRACT:** Budget games almost happen to all companies in this world, be it government companies or private companies. This budget game is very detrimental and can reduce the performance of the company. Therefore, the company must make various efforts so that the budget game does not occur because it is very detrimental. This study will analyze the effect of psychological capital, leadership style, and environmental complexity on budget gaming. This study uses a sample of 125 respondents spread across various types of manufacturing sub-industry in Indonesia. The research method used is verificative research and is explanatory research with an analytical method using Structural Equation Modeling (SEM) using variance-based analysis techniques, namely Partial Least Square (PLS). The test results show that psychological capital has a negative effect on the gaming budget of -0.236. This shows that with the existence of psychological capital, leadership style, and environmental complexity in manufacturing companies in Indonesia, it will be able to reduce the occurrence of budget gaming in these companies.

**KEYWORD**: psycology capital, leadership style, environmental complexity, and budget gaming

## INTRODUCTION

In order for companies to survive in every era and time, companies must try to increase their company's growth or strengthen their competitive advantage over competitors. In this case, the company needs personnel who have superior managerial abilities. Personnel who must have superior managerial skills are top management (Cui & Chi-Moon Leung, 2020). Investment, funding, and other strategic decisions are the responsibility of top management. Top management is one of the important factors in decision making and business performance of the company and members of top management include the CEO, executive director, and other senior executives (Cui & Chi-Moon Leung, 2020). Hitt et. al. (2007) stated that the managerial ability of top management refers to the level of knowledge, skills, and experience. According to Barney (1991), managerial ability is the central premise of the company's resource-based view and is an important factor that determines the creation of company value and performance (Cui & Chi-Moon Leung, 2020). Companies need managerial members who really have

competent managerial abilities because this affects their managerial performance (Bebenroth & Froese, 2019; Tsuruta, 2020).

Several researchers conducted an analysis related to the factors that influence managerial performance, including the origin of the manager, whether from outside or within the country (Bebenroth & Froese, 2019), the age of the manager where managers under 60 years of age perform better (Tsuruta, 2020), the relationship between managers and company owners where a good relationship can increase managerial performance (Arnold et al., 2019), the composition of top management which has non-CEO members (Lei et al., 2019), the leadership style of the manager (Patiar & Wang, 2020), leadership competencies possessed by managers in environmental, economic, and social aspects (Pham & Kim, 2019), specialization skills of a manager where managers who have specialist skills are more persistent in their work (Alda et al., 2017), personality characteristics and motivation of managers to want to learn and work diligently (Mahlamäki et al., 2019), managers' ability to innovate (Pfister et al., 2017), characteristics of management accounting information system (ISAM), environmental uncertainty, decentralization (Febrianti & Fitri, 2019), budget preparation (Ermawati & Aprivanti, 2016; Rahayu, 2019; Syahrul Maulidi, Hasan Basri, 2017), organizational commitment, professionalism (Rahayu, 2019), performance measurement system, incentive compensation (Svahrul Maulidi, Hasan Basri, 2017), and work motivation (Ermawati & Apriyanti, 2016). This research will focus on budgeting...

A manager must have the ability to manage and monitor budgets or finances (Cui & Chi-Moon Leung, 2020). This is required because one of the indicators is that performance management is good from the budget or financial, in using the budget it does not exceed the budget and is in accordance with the plans that have been prepared. Therefore, what might happen is budget gaming (Libby & Lindsay, 2012; SeTin et al., 2019). Managers who play budget games are due to the fact that the budget used is in accordance with the plans that have been made or if an error occurs in the implementation of the use of the budget. Managers try to create slack budgets, inflate actual results, and delay expenditures needed to increase profitability, when managers know budget targets will not be achieved (Libby & Lindsay, 2012). Most managers tend to agree with this practice of budget gaming because it can manipulate the company's success, including achieving sales and net profit targets at the end of the budget period and this is likely to increase achievement between quarters on a percentage basis. (SeTin et al., 2019). Budget gaming can be done if it is aimed at the progress and development of the company in a better direction. Delayed spending, spending behavior, negotiating easy targets so that the budget is achieved faster, and accelerating sales are some indicators that can be used to measure the occurrence of budget games. (SeTin et al., 2019). The practice of budget gaming does not only occur in state-owned government companies but also occurs in other companies such as manufacturing companies in Indonesia (SeTin et al., 2019). This has a serious impact on the financial performance and performance of the company. Therefore, it is necessary to have other factors that can reduce the occurrence of budget games in the company. The factors that will be analyzed for their influence on the budget game in this study include psychological capital, leadership style, and environmental complexity.

A manager must have the ability to regulate and related to psychological capital, Luthans and Avoilo (2007) state that psychological capital is a way to evolve from self-actualization to self

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possibility that can develop (Kim et al., 2020). Good psychological capital can positively improve the performance and psychological well-being of athletes (Kim et al., 2020), reduce negative things that can reduce company performance (Memili et al., 2020), and strengthen organizational resilience in the face of major disasters. has occurred (Fang et al., 2020). Therefore, psychological capital may be able to reduce the negative impact of budget gaming. Regarding leadership style, according to Avolio (1996) and Bass (2006) leadership style is a series of leadership styles that affect organizational performance (Gemeda & Lee, 2020). A leadership style that is appropriate to the job can reduce the impact of customer rudeness on employees who are on the front lines of hospitality (Boukis et al., 2020), ncrease employee engagement and innovation (Gemeda & Lee, 2020; Xie et al., 2018), increase and can reduce employee task performance (Gemeda & Lee, 2020), and build trust and individual identity (Xie et al., 2018). With a leadership style, it is likely to reduce the occurrence of budget gaming due to good and strict monitoring from a leader. Finally, regarding environmental complexity, according to Child (1972) Environmental complexity is an organizational operational strategy that involves and takes into account the heterogeneity of the existing environment (Cannon & St. John, 2007). This means that companies must pay attention to all environmental factors on company performance such as port companies that pay attention to natural factors and human performance in improving port performance (Cutroneo et al., 2017), the world of education has a high learning complexity where there are difficulties in carrying out practical activities if all subjects are combined (Valderrama-Hernández et al., 2017), and at universities where student diversity results in different levels of ability in solving math problems (Rippy & Doughty, 2017). With this, the more complex an activity in the company will be, the more complex the budget will be, so it is possible to reduce the occurrence of gaming budgets.

This study will analyze the influence of psychological capital, leadership style, and environmental complexity on budget gaming. This study takes primary data from respondents from several manufacturing sub-industries in Indonesia. The data was processed using the Structural Equation Modeling (SEM) analysis method and using a variance-based analysis technique, namely Partial Least Square (PLS). The results of this study are expected to be used by manufacturing companies in Indonesia in anticipating budget games by their employees so as to minimize losses to the company.

#### LITERATURE REVIEW

#### Theory

According to Bart (1989), managers who intentionally and plan to manipulate sales, profits, costs, and other things in the budget process are a budget game behavior (SeTin et al., 2019). Bart (1989) states that managers who play budget games can be seen from the occurrence of delays in necessary expenditures, unnecessary financial expenditures at the end of the budget, and changing budget targets so that they are more easily achieved. (SeTin et al., 2019). This gives rise to many cores that emerge such as pillows, jars of snacks, secret reserves, kitty, pads, and protecting a value. (SeTin et al., 2019). Libby & Lindsay (2010) argue that the terminology used interchangeably to describe managers' dysfunctional behavior towards budgets is sneaky game, game play, budget manipulation, budgetary slack (SeTin et al., 2019). The term is most widely used to describe behavior that is not in accordance with the use of the budget. Budget

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slack is a deliberate attempt by the manager to increase the probability of the manager to achieve the budget and reduce the risk that the manager will face. However, the company still uses the budget in monitoring and controlling the company's performance so that if there is something that is not appropriate then what is controlled and investigated is the budget problem and nothing else (Libby & Lindsay, 2012). Hope and Fraser (2003) suggest that the potential budget use problems created are exacerbated by the use of "fixed" performance contracts; that is, contracts in which managers are evaluated rigidly against initial budget targets under conditions of constant change and uncertainty (Libby & Lindsay, 2012). Hope and Fraser (2003) argue that such contracts will naturally encourage managers to play budget (budget gaming) including negotiating for easy budget targets i.e. creating slack budgets, inflating actual results, and delaying expenditures needed to increase profitability, when managers know the budget target will not be achieved (Libby & Lindsay, 2012).

Luthans (2002) states that a positive organizational behavior perspective which shows that the psychological strengths and abilities of human resources that can be measured, developed, and managed effectively for performance improvement is the root of psychological capital. (Memili et al., 2020). Positive psychological development involving hope, self-efficacy, resilience, and optimism is a psychological capital at the individual level (Memili et al., 2020). Positive relationships from psychological capital that occur in employees include reduced tardiness, reduced turnover intention, increased job satisfaction, high organizational commitment, good citizenship behavior, ambidexterity in work, high willingness to be involved in work, able to adapt in career, and high performance (Memili et al., 2020).

According to Robbins et al., (2009), a topic that is often discussed in organizational science is leadership. The line of leadership research can be described by three main approaches: trait, behavior and inspiration. A set of universal leadership traits has been attempted to be identified by trait theorists. The behaviors exhibited by specific leaders are studied by behaviorists. While the leader as a person who moves followers through their words, thoughts, and behavior is learned through an inspirational approach (Gemeda & Lee, 2020). According to Carasco-Saul et al. (2015), the concept of charismatic leadership in the 1970s and 1980s is someone who has charisma, who can inspire, attract and can influence followers effectively because of their personality qualities (Gemeda & Lee, 2020). Charismatic leadership has distinctive characteristics, namely being able to motivate subordinates so that they are loyal and strive to achieve goals, have a good vision, charming behavior, and be a strong role model. Full Range Leadership Theory of Bass and Avolio is a leadership theory that groups leadership behaviors/styles into three, namely transformational, transactional and laissez-faire (Gemeda & Lee, 2020). According to Vincent-Hoper et al. (2012), transformational leaders are leaders who try to encourage and advance their subordinates by communicating and anticipating all the risks of an attractive vision, having a common goal, setting shared values, and illustrating the expected behavior. Aspects that must be possessed by transformational leaders include: behaving ideally according to conditions, having inspiring motivation, having good intellect, and always having mature individual considerations (Gemeda & Lee, 2020). Another leadership style, according to Trottier et al., (2008) that transactional leadership is a leadership style in which subordinates are very obedient to their leaders so they try to always meet the demands of their leaders. In this leadership style, the creation of enthusiasm and commitment is not expected. This leadership style is a corrective style labeled "management-by-exception"

and a constructive style labeled "contingent reward" (Gemeda & Lee, 2020). The laissez-faire leadership style according to Solomon (2016) is a leadership style characterized by the absence of the leader. in achieving goals where the leader ignores, disappears when needed, ignores achievements, and avoids problems. In this leadership, the leader provides very little direction that allows his subordinates to make their own decisions (Gemeda & Lee, 2020).

According to Child (1972) Environmental complexity is an organizational operational strategy that involves and takes into account the heterogeneity of the existing environment (Cannon & St. John, 2007). This means that companies must pay attention to all environmental factors on company performance such as port companies that pay attention to natural factors and human performance in improving port performance (Cutroneo et al., 2017), the world of education has a high learning complexity where there are difficulties in carrying out practical activities. if all subjects are combined (Valderrama-Hernández et al., 2017), at universities where student diversity results in different levels of ability in solving math problems (Rippy & Doughty, 2017).

## Hypothesis Development

A manager must have sufficient ability to lead a company or work unit. One of the things that must be owned by a manager is psychological capital. Seligman (2002) suggests that when a company is involved in its business flows and even invests, the company must build psychological capital for the company's future (Luthans et al., 2004). Stajkovic (2003) states that specifically psychological capital consists of four things, namely trust, hope, optimism, and resilience with the aim of motivating work (Luthans et al., 2004). The application of psychological capital has a positive impact on employees where there is an increase in job satisfaction, organizational commitment, civic behavior, ambidexterity in tasks, work involvement, ability to adapt in careers, and performance (Memili et al., 2020), improving performance and psychological well-being of athlete (Kim et al., 2020), and strengthen organizational resilience in the face of major disasters that have occurred (Fang et al., 2020). This shows that the application of psychological capital has a positive impact on employee performance in a company. Therefore, psychological capital can have a positive impact on managerial performance where the managerial performance of a company decreases if its managers do budget gaming (Libby & Lindsay, 2012). Managers who do budget gaming can lead to budget manipulation, budgetary slack, and budget games (SeTin et al., 2019) which can lead to losses and bankruptcy of the company. Based on this, the hypothesis regarding the relationship between psychological capital and budget gaming is:

 $H_1$  = Psychological capital has a negative effect on the gaming budget.

Leadership is one of the main things in running a company. The company leader must be a charismatic leader where the leader can inspire, attract, and influence his subordinates in a positive way (Gemeda & Lee, 2020). Besikçi (2019) states that the leadership style of ship leaders and engineers has a decisive effect on the motivation of seafarers (Beşikçi, 2019). Therefore, the right leadership style in increasing employee performance motivation. The Theory of Bass and Avolio distinguish three groups of leaders in behavior/style: transformational, transactional and laissez-faire (Gemeda & Lee, 2020). Transformational leaders are leaders who promote and encourage employees to jointly implement and achieve

company goals. Transactional leaders are leaders who ask their employees to obey every command of the leadership in achieving company goals. While laissez-faire is a leader who shows indifference to his subordinates where his subordinates are asked to make their own decisions (Gemeda & Lee, 2020). This leadership style can influence policies in planning and implementing budgets so that budget gaming can occur. Leaders in each of these leadership styles can just do budget gaming with the aim of achieving the planned budget. However, a leadership style that is appropriate to the job can reduce the impact of customer rudeness on employees who are on the front line of hospitality (Boukis et al., 2020), increase work engagement and employee innovation (Gemeda & Lee, 2020; Xie et al., 2018), increase and decrease employee task performance (Gemeda & Lee, 2020), and build trust and individual identity (Xie et al., 2018). Based on this, the hypotheses related to the relationship between leadership style and budget gaming are:

## $H_2$ = Leadership style has a negative effect on the gaming budget.

Companies at this time must pay attention to all environmental factors that affect company performance. Fitrios (2018) states that environmental uncertainty has a significant effect on the quality of accounting information systems (Fitrios et al., 2018). Environmental uncertainty that occurs consists of a stable / dynamic environment and a complex environment. An organizational strategy that involves and pays attention to environmental heterogeneity is an environmental complexity (Cannon & St. John, 2007). Environmental uncertainty can cause budget uncertainty that occurs due to environmental costs. This budget uncertainty causes the implementation of the budget to be large. This makes managers do budget gaming through budget streamlining so that the budget used can be in accordance with the budget plan that has been made. Therefore, companies must pay attention to environmental complexity in running their companies. Companies that carry out environmental complexity can improve their company's performance, such as port companies that pay attention to natural factors and human performance in improving port performance (Cutroneo et al., 2017). However, this is not the case in the world of education which has a high learning complexity where there are difficulties in carrying out practical activities if all lessons are combined (Valderrama-Hernández et al., 2017), and in universities where the diversity of students results in different levels of ability in completing math problems (Rippy & Doughty, 2017). Based on that, the hypothesis regarding the relationship between environmental complexity and budget gaming is:

 $H_3$  = Environmental complexity has a negative effect on budget gaming.

## **METHODS**

## **Type and Location Research**

This type of research is verificative research and explanatory research, because this study aims to verify and explain causality between various variables through hypothesis testing. In terms of data collection, this research can be referred to as survey research and is grounded research where the data collection method is in the form of primary data obtained directly from original sources and based on existing theories, then a research model is developed to be tested empirically. This research is located in Indonesia by distributing questionnaires via email and mobile phones to manufacturing companies in Indonesia.

#### **Population and Sample**

The population used in this study is a manufacturing company in Indonesia. The sample is obtained from the results of distributing questionnaires to manufacturing companies in Indonesia with directors, division managers as the unit of analysis. This study uses a nonprobability sampling technique for practical considerations, especially in terms of data accessibility, in the sample selection process, this study uses a convenience sampling technique, namely choosing an organization and selecting managers to fill out questionnaires with consideration of convenience, which is obtained based on information input from certain target groups. (Sekaran, 2003).

#### Variable

The variables in this study consisted of the dependent variable (BG), namely budget gaming and the independent variables, namely psychological capital (PC), leadership style (LS) and environmental complexity (EC). Budget gaming is measured through the behavior of budget games measured by an instrument developed by Libby & Lindsay (2010) and Onsi (1973) which consists of 9 (nine) indicators given to respondents related to the existence of games in their budget where 5 (five) indicators are from Libby. & Lindsay (2010) and 4 (four) indicators of adaptation from Onsi (1973). These indicators relate to spending behavior, delaying necessary spending, accelerating sales, negotiating easier targets to make budgets easier to achieve (SeTin et al., 2019). In addition, this study adds variable indicators that affect the gaming budget, the emphasis on the budget is to return the budget (carry over) that has not been used up at the end of the budget period, it is possible to carry back from the budget of the next period at the end of the budget period, it is allowed choose one carry over or carry back depending on the condition of the budget and the opportunity to divert funds to programs that are not small. The author establishes three dimensions of fifteen indicators, namely Behavior, Opportunities and Needs (Merchant, 1985; Rausch & Brauneis, 2015). The psychological capital variable is measured based on the statement from Avey et. al (2008) that the indicators of psychological capital consist of four components, namely independence, optimism, hope and resilience (Fang et al., 2020). According to Bandura (1982), independence refers to the ability of people to positively carry out actions to deal with potential situations. According to Snyder (2002), expectancy refers to an individual's perceived ability to find pathways to achieve desired goals, and to motivate oneself through agency thinking to use these pathways. According to Carver et. al (2010), optimism refers to holding positive hopes for the future. According to Luthans (2002), psychological resilience refers to the capacity for individuals to bounce back from adverse situations (Fang et al., 2020). In this study, the indicators used were derived from research conducted by Luthans et. all, (2007) which consists of twenty four indicators (Fang et al., 2020). Measurement of the leadership style variable in this study used measurements made by Besikci (2019). According to Derva (2010), the items of the laissezfaire style leadership measurement consist of leaders' expectations that their employees can solve their own problems, find their own solutions, take their own actions, and find their own answers regarding work. themselves when there are problems between them (Beşikçi, 2019). According to Oztop (2008), the items from the measurement of transformational leadership style consist of respecting, respecting, trusting each other, inviting development, innovation, vision and imagination, and firmness in the application of essential values (Beşikçi, 2019). This study uses measurements from Oztop (2008) which consist of seven indicators for European Journal of Buiness and Innovation Research Vol.9, No.3, pp xx-xx, August 2021 Print ISSN: 2053-4019(Print), Online ISSN: 2053-4027(Online)

transformational leadership style (Beşikçi, 2019). The measurement of environmental complexity in this study is environmental uncertainty on the quality of accounting information systems. This has an impact on the quality of accounting information produced (Fitrios et al., 2018). This measurement is used because the gaming budget also occurs due to the uncertainty that occurs in the company's conditions and situation. One of the factors to consider when planning and operating an accounting information system is the organizational environment. The thing that most underlies the lack of quality accounting information systems is the inability of decision makers to capture information about environmental changes and complexity (environmental complexity) (Fitrios et al., 2018). Change and environmental complexity is this is an environmental uncertainty. Environmental uncertainty significantly affects the quality of accounting information systems, and accounting information. In the research of Fitrios et. al. (2018), the dimensions of environmental uncertainty are a stable / dynamic environment and a complex environment. The indicators include technology, regulations, customers, and products (Fitrios et al., 2018).

#### **Model Analisys**

#### **Descriptive Analysis**

Sugiyono (2016) states that the process of transforming research data in tabulated form so that it is easy to understand and interpret is a statistical descriptive analysis. This analysis is used to provide information related to the demographics of the respondents and the characteristics of the variables from the study (Sugiyono, 2016). With this analysis, the data obtained will be analyzed by describing or describing the data that has been collected as it is without intending to make generally accepted conclusions or generalizations(Sugiyono, 2016).

#### **Verificative Analysis**

Verificative analysis is used to test the hypotheses used to process the research results in order to obtain a conclusion. The data analysis technique used in this study is quantitative analysis with component or variance-based SEM techniques known as Partial Least Square (PLS). Imam Ghozali (2015, 5) mentions Partial Least Square (PLS) is a powerful analytical method and is often referred to as soft modeling because it eliminates the assumptions of Ordinary Least Square (OLS) regression, the data can be normally distributed multivariately and there is no multicollinearity problem between exogenous variables (Ghozali & Hengky Latan, 2015). According to Chin and Newsted (1999), besides being able to be used to explain whether there is a relationship between latent variables (prediction), it can also be used to confirm theories and hypotheses made (Ghozali & Hengky Latan, 2015). There are two sub-models of PLS analysis, namely the measurement model or also called the outer model and the structural model or also called the inner model. The manifest variable or observed variable representing the latent variable is measured by the outer model, while the strength and estimation relationship between the latent variable or construct is measured by the inner model (Ghozali & Hengky Latan, 2015).

#### **Evaluation of the Measurement Model (Outer Model)**

Evaluation of the results of the outer model is carried out through confirmatory factor analysis (CFA) in the form of validity and reliability tests on latent variable constructs. According to Campbell and Fiske (1959), the measurement with CFA was carried out through the MultiTrait-MultiMethode (MTMM) approach which tested convergent and discriminatory validity (Ghozali, 2011). Convergent validity test is carried out with the principle that the manifest variables of a construct should be highly correlated. Convergent validity assessment uses the Rule of thumb where the factor loading value must be more than 0.7 for confirmatory research and between 0.6-0.7 for exploratory research. In addition, the Average variance extracted (AVE) value must be greater than 0.5. However, Chin (1998) stated that for research in the early stages of developing a measurement scale, it is still considered sufficient if the loading factor value is 0.5-0.6 (Ghozali, 2011)

#### **Evaluation of the Structural Model (Inner Model)**

The stages in evaluating the inner model are: R-Square ( $R^2$ ), and the significance of the path coefficient.

## **R<sup>2</sup> Evaluation**

According to Imam Ghozali and Hengky Latan (2015, 78), the R-Square for each endogenous latent variable as the predictive power of the structural model is an indicator of measurement in assessing the structural model. The effect of certain exogenous latent variables on endogenous latent variables can be explained from changes in the R-squares value that can be obtained. The limitation of the R2 value consists of 3 criteria, namely 0.67, 0.33, and 0.19 as substantial, moderate, and weak criteria (Ghozali & Hengky Latan, 2015).

#### Significance of the relationship between constructs

The path coefficient generated between constructs is a measurement value of the significance of the relationship between constructs that can be seen and describes the strength of the relationship between constructs. The sign in the path coefficient must match the hypothesis made. The assessment of the significance of the path coefficient is seen from the statistical value obtained from the bootstrapping process (resampling method). According to Hair et al. (2014: 186), the general critical values used for the two-tailed test consist of 1.65 (significance level = 10%), 1.96 (significance level = 5%), and 2, 57 (significance level = 1%) (Riduwan & Kuncoro, 2014).

#### **Research Model**

The model and hypothesis testing in this study used the Structural Equation Modeling (SEM) analysis method and used a variance-based analysis technique, namely Partial Least Square (PLS). Imam Ghozali (2015, 5) mentions Partial Least Square (PLS) is a powerful analytical method and is often referred to as soft modeling because it eliminates the assumptions of Ordinary Least Square (OLS) regression, the data can be normally distributed multivariately and there is no multicollinearity problem between exogenous variable (Ghozali & Hengky Latan, 2015). The research model used is as follows.

 $\eta_1 = \gamma_{11} \, \xi_1 + \gamma_{12} \, \xi_2 + \gamma_{13} \, \xi_3 + \zeta_1 \quad \dots \qquad (1)$ 

#### where

| γ11, γ13, γ13 | : Path coefficient between exogenous and endogenous variables |
|---------------|---|
| $\eta_1$      | : Budget Gaming (BG)  |
| ξ1            | : Psychological Capital (PC)                                  |
| ξ2            | : Leadership Style (LS)                                       |
| ξ3            | : Environmental Complexity (EC)                               |
| ζ1            | : Error   |

## **RESULTS AND DISCUSSION**

## **Data collection**

Data collection was carried out using primary data through the distribution of questionnaire links via google form media and email and distributed to respondents who were known to employees of manufacturing companies. Collected 125 questionnaires distributed personally, complete and can be tested further. The sub-category of the manufacturing industry used for data collection can be seen in table 1.

## Table 1. Manufacturing Industry Sub-Category

| Sub Cathegory                 | Amount | %     |
|-------------------------------|--------|-------|
| Drinking Water Treatment)     | 53     | 42.4  |
| Automotive spare parts        | 3      | 2.4   |
| Food and beverage             | 10     | 8.0   |
| Chemicals                     | 2      | 1.6   |
| Plastic                       | 6      | 4.8   |
| Paint and protective coatings | 9      | 7.2   |
| Textile                       | 10     | 8.0   |
| Tissue paper                  | 4      | 3.2   |
| Forest products industry      | 3      | 2.4   |
| Medicine                      | 2      | 1.6   |
| Flour                         | 1      | 0.8   |
| Manure                        | 8      | 6.4   |
| Cement                        | 4      | 3.2   |
| Farm                          | 1      | 0.8   |
| Steel                         | 1      | 0.8   |
| Agro industry                 | 1      | 0.8   |
| Medical Equipment             | 5      | 4.0   |
| Rubber                        | 2      | 1.6   |
| Total                         | 125    | 100.0 |
|                               |        |       |

## **Descriptive analysis test results**

Descriptive statistical analysis was conducted to provide an overview or description of a data. Descriptive analysis used in this study includes the average (mean), standard deviation, maximum and minimum values. The results of descriptive statistical tests can be seen in table 2.

| <b>I</b>                      |     |         |         |        |                |
|-------------------------------|-----|---------|---------|--------|----------------|
| Variable                      | Ν   | Minimum | Maximum | Mean   | Std. Deviation |
| Budget gaming (BG)            | 125 | 1,00    | 5,73    | 2,5451 | 0,83090        |
| Psychological Capital (PC)    | 125 | 2,29    | 6,00    | 4,8430 | 0,59059        |
| Leadership Style (LS)         | 125 | 3,71    | 6,00    | 5,1771 | 0,47011        |
| Environmental Complexity (EC) | 125 | 2,83    | 6,00    | 4,9787 | 0,56200        |

## Table 2. Descriptive statistics

Table 2 shows that for the budget gaming variable (BG), the minimum value is 1, the maximum value is 5.73, the average value is 2.5451, and the standard deviation is 0.8309. The psychological capital (PC) variable has a minimum value of 2.29, a maximum value of 6.00, an average of 4.843, and a standard deviation of 0.59059. The leadership style (LS) variable has a minimum value of 5.1771, and a standard deviation of 0.47011. The environmental complexity (EC) variable has a minimum value of 2.83, a maximum value of 6.00, an average of 4.9787, and a standard deviation of 0.562.

## Verification analysis test results

The results of the verification analysis test with the data analysis technique used is a quantitative analysis of Structural Equation Modeling (SEM) and using a variance-based analysis technique, namely Partial Least Square (PLS) as follows.

## Measurement Model Test Results (Outer Model)

The test results of the measurement model (outer model) include checking individual convergent validity (viewed from the value of outer loadings), average variance extracted (AVE), and composite reliability. The test results are as follows.

## Convergent Validity Test Results

The results of the Convergent Validity test from the measurement model on the variables of budget gaming (BG), psychological capital (PC), leadership style (LS), and environmental complexity (EC) can be seen in table 3.

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| Variable             | Indicator   | Loading<br>Factor | t statistic | AVE   | Conclusion |
|----------------------|-------------|-------------------|-------------|-------|------------|
| Budget Gamin         | g           |                   |             |       |            |
| First Order          |             |                   |             |       |            |
|                      | BG1         | 0,673             | 8,318       |       | Valid      |
|                      | BG2         | 0,871             | 25,792      |       | Valid      |
|                      | BG3         | 0,779             | 16,990      |       | Valid      |
| Behavior             | BG4         | 0,764             | 17,733      | 0,590 | Valid      |
|                      | BG5         | 0,581             | 6,420       |       | Valid      |
|                      | BG6         | 0,843             | 38,190      |       | Valid      |
|                      | BG7         | 0,824             | 27,841      |       | Valid      |
|                      | BG8         | 0,793             | 19,986      |       | Valid      |
|                      | BG9         | 0,820             | 28,915      |       | Valid      |
|                      | BG10        | 0,749             | 12,584      | 0.007 | Valid      |
| Opportunity          | BG11        | 0,734             | 14,056      | 0,607 | Valid      |
|                      | BG12        | 0,779             | 14,670      |       | Valid      |
|                      | BG13        | 0,796             | 18,666      |       | Valid      |
|                      | BG14        | 0,902             | 52,342      | 0.702 | Valid      |
| Needs                | BG15        | 0,867             | 33,933      | 0,782 | Valid      |
| Second Order         |             |                   |             |       |            |
|                      | Behavior    | 0,964             | 109,235     |       | Valid      |
| Budget<br>Camina     | Opportunity | 0,976             | 220,662     | 0,868 | Valid      |
| Gaming               | Needs       | 0,850             | 24,205      |       | Valid      |
| <b>Psychological</b> | capital     |                   |             |       |            |
|                      | PC1         | 0,793             | 15,589      |       | Valid      |
|                      | PC2         | 0,782             | 14,493      |       | Valid      |
|                      | PC3         | 0,808             | 17,143      |       | Valid      |
|                      | PC4         | 0,836             | 18,561      |       | Valid      |
|                      | PC5         | 0,689             | 12,818      |       | Valid      |
|                      | PC6         | 0,785             | 17,255      |       | Valid      |
|                      | PC7         | 0,807             | 24,691      |       | Valid      |
|                      | PC8         | 0,695             | 12,664      | 0,522 | Valid      |
|                      | PC9         | 0,771             | 12,731      |       | Valid      |
|                      | PC10        | 0,773             | 14,830      |       | Valid      |
|                      | PC11        | 0,786             | 17,542      |       | Valid      |
|                      | PC12        | 0,575             | 5,747       |       | Valid      |
|                      | PC13        | 0,637             | 9,355       |       | Valid      |
|                      | PC14        | 0,672             | 7,916       |       | Valid      |
|                      | PC15        | 0,773             | 13,541      |       | Valid      |

# Table 3. Convergent Validity Test Results

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| Variable               | Indicator  | Loading<br>Factor | t statistic | AVE   | Conclusion |
|------------------------|------------|-------------------|-------------|-------|------------|
|                        | PC16       | 0,766             | 13,134      |       | Valid      |
|                        | PC17       | 0,671             | 9,483       |       | Valid      |
|                        | PC18       | 0,643             | 5,741       |       | Valid      |
|                        | PC19       | 0,674             | 8,864       |       | Valid      |
|                        | PC20       | 0,574             | 6,196       |       | Valid      |
|                        | PC21       | 0,673             | 6,634       |       | Valid      |
|                        | PC22       | 0,701             | 10,651      |       | Valid      |
|                        | PC23       | 0,641             | 12,005      |       | Valid      |
|                        | PC24       | 0,731             | 17,210      |       | Valid      |
| Leadership Styl        | le         |                   |             |       |            |
|                        | LS1        | 0,659             | 9,030       |       | Valid      |
|                        | LS2        | 0,788             | 16,974      |       | Valid      |
|                        | LS3        | 0,839             | 24,492      |       | Valid      |
|                        | LS4        | 0,694             | 7,795       | 0,606 | Valid      |
|                        | LS5        | 0,783             | 18,644      |       | Valid      |
|                        | LS6        | 0,844             | 29,431      |       | Valid      |
|                        | LS7        | 0,820             | 22,082      |       | Valid      |
| Environmental          | Complexity |                   |             |       |            |
| First Order            |            |                   |             |       |            |
| Stable /               | EC1        | 0,876             | 26,160      |       | Valid      |
| Dynamic<br>Environment | EC2        | 0,897             | 55,323      | 0,786 | Valid      |
|                        | EC3        | 0,831             | 21,366      |       | Valid      |
| Complex                | EC4        | 0,866             | 26,435      | 0.500 | Valid      |
| Environment            | EC5        | 0,595             | 5,384       | 0,598 | Valid      |
|                        | EC6        | 0,773             | 13,443      |       | Valid      |
| Second Order           |            |                   |             |       |            |
| Environmental          | Stable     | 0,860             | 23,951      | 0.010 | Valid      |
| Complexity             | Complex    | 0,946             | 98,941      | 0,818 | Valid      |

Table 3 shows that the gaming budget variable is measured by 3 dimensions consisting of 15 indicators. In the gaming budget variable, it can be seen that all dimensions have a loading factor above 0.5. In addition, the opportunity dimension in the gaming budget variable has the highest loading factor while the need dimension has the lowest loading factor. For the AVE value, the gaming budget variable has a value of 0.868. For the psychological capital variable, it is measured by 24 indicators and it can be seen that all indicators have a loading factor above 0.5. In addition, the PC4 indicator on the psychological capital variable has the highest loading factor, while the PC420 indicator has the lowest loading factor. For the AVE value, the psychological capital variable has a value of 0.522. For the leadership style variable, it is measured by 7 indicators and it can be seen that all indicators have a loading factor above 0.5. In addition, the LS6 indicator on the leadership style variable has the highest loading factor, while the LS6 indicator on the leadership style variable has the highest loading factor.

while the LS1 indicator has the lowest loading factor. For the AVE value, the leadership style variable has a value of 0.606. For the environmental complexity variable, it is measured by 2 dimensions consisting of 6 indicators and it can be seen that all indicators have a loading factor above 0.5. In addition, the complex environmental dimension on the environmental complexity variable has the highest loading factor while the stable dimension has the lowest loading factor. For the AVE value, the environmental complexity variable has a value of 0.818.

#### Composite Reliability Test Results

The results of the Composite Reliability test from the measurement model on the variables of budget gaming (BG), psychological capital (PC), leadership style (LS), and environmental complexity (EC) can be seen in table 4.

| Variable laten           | Cronbach's<br>Alpha | Composite<br>Reliability | Conclusion |
|--------------------------|---------------------|--------------------------|------------|
| Budget gaming            | 0,943               | 0,950                    | Reliabel   |
| Behavior                 | 0,880               | 0,908                    | Reliabel   |
| Opportunity              | 0,870               | 0,902                    | Reliabel   |
| Needs                    | 0,723               | 0,878                    | Reliabel   |
| Psychological capital    | 0,960               | 0,963                    | Reliabel   |
| Environmental complexity | 0,833               | 0,879                    | Reliabel   |
| Stable                   | 0,728               | 0,880                    | Reliabel   |
| Complex                  | 0,769               | 0,854                    | Reliabel   |
| Leadership style         | 0,890               | 0,914                    | Reliabel   |

## Table 4. Composite Reliability Test Results

Table 4 shows that each construct has a composite reliability (CR) value greater than 0.7 and is reinforced by a Cronbach alpha (CA) value greater than 0.6 so it is reliable. This shows that all indicators have consistency in measuring each construct.

## **Structural Model Test Results (Inner Model)**

The results of the structural model test (inner model) include the results of the structural model equation and the R-Square test. The test results are as follows.

## Structural Model Equation Results

The results of the SEM PLS structural model equation can be seen in equation 2.

 $\eta_1 = -0,250 \xi_1 + -0,339 \xi_2 + -0,236 \xi_3 + \zeta_1$  ..... (2)

Equation 2 shows that the path coefficient value between exogenous and endogenous variables for psychological capital (PC) is -0.25, leadership style (LS) is -0.339, and for environmental complexity (EC) is -0.236.

**R-Square Test Results** 

The results of the R-square test of the structural model on the variables of budget gaming (BG), psychological capital (PC), leadership style (LS), and environmental complexity (EC) can be seen in table 5.

#### **Table 5. R-Square Test Results**

| No | Relationship                              | Path   | R-<br>square<br>Parsial | Total<br>R-square |
|----|---|--------|-------------------------|-------------------|
| 1  | Leadership Style -> Budget Gaming         | -0,250 | 0,159                   |                   |
| 2  | Psychological Capital -> Budget Gaming    | -0,339 | 0,213                   | 0,519             |
| 3  | Environmental Complexity -> Budget Gaming | -0,236 | 0,147                   |                   |

Table 5 shows that the total R-square value of the influence of leadership style, psychological capital and environmental complexity variables on the budget gaming variable is 0.519. This shows that these variables have an influence of 51.9% on Budget Gaming. while the remaining 48.1% is influenced by other variables not examined. Judging from the path coefficient value (Path), the Budget Gaming variable is dominantly influenced by the Psychological Capital variable with a path coefficient of -0.339 (21.3%), then the Leadership Style variable with a path coefficient of -0.250 (15.9%) and finally Environmental Complexity with a path coefficient of -0.236 (14.7%).

## **Hypothesis Test Results**

The results of hypothesis testing from the structural model on the variables of budget gaming (BG), psychological capital (PC), leadership style (LS), and environmental complexity (EC) can be seen in table 6.

| Hipotesis | Relationship                                 | Path   | T<br>Statistics | P<br>Values |
|-----------|--|--------|-----------------|-------------|
| 1         | Psychological Capital -> Budget Gaming       | -0,339 | 4,209           | 0,000       |
| 2         | Leadership Style -> Budget Gaming            | -0,250 | 2,413           | 0,008       |
| 3         | Environmental Complexity -> Budget<br>Gaming | -0,236 | 1,974           | 0,024       |

## **Table 6. Hypothesis Test Results**

Table 6 shows the statistical value of the psychological capital variable on the gaming budget of 4.209 with a p-value of 0.000. The path coefficient of -0.339 is negative and the value of tstatistic (4.209) is greater than t-table (1.96) with P value (0.000) <0.05. The tstatistic value of the leadership style variable on budget gaming is 2.413 with a p-value of 0.008. The path coefficient obtained is -0.250 which is negative and the tstatistic value (2.413) is greater than ttable (1.96) with P value (0.008) <0.05. The tstatistic value (2.413) is greater than ttable (1.96) with P value (0.008) <0.05. The tstatistic value of the environmental complexity variable on budget gaming is 1.974 with a p-value of 0.024. The path coefficient obtained is -0.236 which is negative and the value of tstatistics (1.974) is greater than t-table (1.96) with P value (0.024) <0.05.

#### DISCUSSION

The results of the descriptive statistical analysis test show that the average value of the variables of budget gaming, psychological capital, leadership style, and environmental complexity generated > from the standard deviation value so that the average value can represent these variables and this result is due to data deviations from the variable. This is low so that the spread of the data shows normal and unbiased results.

The results of the convergent validity test on the measurement model (outer model) in table 3 show that for the gaming budget variable all dimensions have a loading factor above 0.5 which indicates that all indicators used in the gaming budget variable are valid. Based on the results of the loading factor, the opportunity dimension has the highest loading factor so that the opportunity dimension is the strongest in reflecting the gaming budget variable, while the needs dimension has the lowest loading factor so that the needs dimension is the weakest in reflecting the gaming budget variable. Then seen from the AVE value that the variance of the three dimensions can be explained by the Budget Gaming variable of 86.8%. For the psychological capital variable, all indicators have a loading factor above 0.5 which indicates that all indicators used in the psychological capital variable are valid. Based on the results of the loading factor, the PC4 indicator has the highest loading factor so that it has the strongest influence in reflecting on the psychological capital variable, while the PC20 indicator has the lowest loading factor so that it has the weakest influence in reflecting the psychological capital variable. Then seen from the AVE value that the variance of the indicator can be explained by the psychological capital variable of 52.2%. For the leadership style variable, all indicators have a loading factor above 0.5 which indicates that all indicators used in the leadership style variable are valid. Based on the results of the factor loading, the LS6 indicator has the highest factor loading so that it has the strongest influence in reflecting the leadership style variable, while the LS1 indicator has the lowest loading factor so that it gives the weakest influence in reflecting the leadership style variable. Then seen from the AVE value that the variance of the indicator can be explained by the leadership style variable of 60.6%. Then, for the environmental complexity variable, all indicators have a loading factor above 0.5 which indicates that all dimensions used in the environmental complexity variable are valid. Based on the results of factor loading, the complex environmental dimension has the highest loading factor so that it has the strongest influence in reflecting on the environmental complexity variable, while the stable dimension has the lowest loading factor so that it has the weakest influence in reflecting the environmental complexity variable. Then seen from the AVE value that the variance of these dimensions can be explained by the environmental complexity variable of 81.8%. In addition, the results of the Composite Reliability test from the measurement model in table 4 show that all indicators used are reliable and have consistency in measuring each construct because the composite reliability value obtained from each indicator is greater than 0.7 and the Cronbach alpha value (CA) is more than 0.6.

The results of the structural model equation in the structural model (inner model) show that the variables of psychological capital (PC), leadership style (LS), and environmental complexity (EC) have a negative influence on the gaming budget (BG) where each unit value of psychological capital (PC) ) has an effect of -0.25, each value unit of leadership style (LS) has an effect of -0.339, and each unit value of environmental complexity (EC) has an influence of

-0.236. In addition, judging from the total R-square value, the variables of psychological capital (PC), leadership style (LS), and environmental complexity (EC) have a considerable influence on the gaming budget (BG) variable, which is 51.9%. This shows that these factors can reduce the occurrence of budget gaming which is quite significant by more than 50% so that it can reduce the practice of budget games in manufacturing companies in Indonesia.

The results of the hypothesis test in table 6 show that psychological capital has a significant negative effect on Budget Gaming. The existence of Budget Gaming has a negative impact on financial performance and can cause huge losses (Kevin, 2019; Suparman, 2020). One of the things that causes budget gaming is the poor performance of human resources (Libby & Lindsay, 2012). Therefore, there is a need for guidance on the performance of these human resources. One of the things that can foster human resources so that they can work well is Psychological Capital (Kim et al., 2020; Memili et al., 2020). The results of this study indicate that Psychological Capital greatly affects the gaming budget, where the better a person's Psychological Capital is, the smaller the Gaming Budget that occurs. That is, Psychological Capital can have a good influence on a person's performance. Although the object and purpose of the research are different, the results of this study can be said to be the same as the results of several previous studies where a sports athlete whose psychological behavior was measured, the performance and welfare of the athlete increased (Kim et al., 2020), in hotel companies, in Turkey where psychological capital can reduce negative things that occur due to poor individual performance and increase the performance of hotel companies (Memili et al., 2020), and in tourist companies in New Zealand where psychological capital is good. Managers can strengthen the company's resilience in the face of major disasters that have occurred and refocus on the company's development and revival strategy (Fang et al., 2020). Another thing, the leadership style variable has a significant negative effect on Budget Gaming. A manager who has good leadership skills can have a positive influence on company performance. The Full Range Leadership Theory of Bass and Avolio distinguishes three groups of leaders in behavior/style: transformational, transactional and laissez-faire (Gemeda & Lee, 2020). In this study, the type of leadership style used is the transformational type in which leaders must be able to advance and encourage their followers by anticipating and communicating an attractive vision, common goals, and shared values, as well as by setting illustrations of the behavior requested (Gemeda & Lee, 2020). Transformational leaders have idealized influence, inspirational motivation, intellectual stimulation, and individual consideration (Gemeda & Lee, 2020). Leaders who commit fraud are unlikely to want to collaborate, participate and give trust to the environment. As illustrated by signaling theory that between leaders (managers) and shareholders (stakeholders) have access to different information (Connelly et al., 2011). A good leader will certainly provide complete and equal information to stakeholders (Alifani & Nugroho, 2019). Therefore, this study proves that leaders who have high transformational leadership abilities can reduce the occurrence of budget gaming, especially for leaders in Indonesian manufacturing companies. The results of this study support the results of research conducted by Boukis et. al. (2020) where transformational leaders can have a positive influence so as to reduce the impact of rudeness by hotel staff to their customers (Boukis et al., 2020), the results of Gemeda's research (2020) where transformational leaders can have a positive influence so that work involvement and innovativeness of ICT-related employees in companies in Ethiopia and South Korea is increasing (Gemeda & Lee, 2020), and the results of research conducted by Xie et. al (2018) where transformational leaders can have a positive influence so European Journal of Buiness and Innovation Research Vol.9, No.3, pp xx-xx, August 2021 Print ISSN: 2053-4019(Print), Online ISSN: 2053-4027(Online)

that trust and individual identity are built in carrying out an innovation in the company (Xie et al., 2018). Furthermore, the Environmental Complexity variable has a significant negative effect on Budget Gaming. Environmental complexity is an organizational operational strategy that involves and takes into account the heterogeneity of the existing environment (Cannon & St. John, 2007). This means that the company must pay attention to the complexity of the environment or the surrounding situation in carrying out its activities. Environmental Complexity causes a person to be able to adapt in solving existing problems. One must be able to work with various kinds of complexities that occur both in terms of changes in technology, regulations, customers, suppliers, products, and the environment (Fitrios et al., 2018). This study uses the Environmental Complexity indicator used by Fitrios et al. (2018) which consists of 2 dimensions, namely a stable/dynamic environment and a complex environment (Fitrios et al., 2018). Of all the existing indicators, the working indicator always follows changes in internal and external regulations that occur to get the highest score. Managers/leaders in manufacturing companies always see changes in existing regulations both internally and externally in running their manufacturing companies. This is contrary to budget gaming activities where budget gaming activities occur due to deliberate and planned manipulation of the use of the budget (SeTin et al., 2019) and are monotonous and do not follow changes that occur so that based on Signaling theory there will be differences in information between managers and managers. stakeholders (Connelly et al., 2011). The results of this study are in accordance with previous research where managers in port companies who pay attention to the complexity of human and natural resources can improve port performance and reduce the negative things that interfere with it (Cutroneo et al., 2017), research in the world of education where teachers who pay attention to complexity high learning can teach better than teachers who only teach monotonously so as to increase student interest in learning and reduce the negative impact that occurs due to boredom in learning (Valderrama-Hernández et al., 2017), and research on the diversity of students with different ability levels - the difference is that lecturers who can understand this diversity can help students solve math problems so that they get better grades and reduce bad grades (Rippy & Doughty, 2017).

## CONCLUSION

The results of research on manufacturing companies in Indonesia show that Psychological Capital has been shown to have a significant negative effect on Budget Gaming. Psychological Capital gives positive things to each individual to do each of their performances well so as to reduce negative actions in this study can reduce budget gaming activities. In addition, Leadership Style has been shown to have a significant negative effect on Budget Gaming. The leadership style in this study is that transformational style provides positive things where a manager or a leader who has a good transformational style can give good things to the company, including in good budget arrangements so that budget gaming activities can be reduced And the last is Environmetal Complexity where this variable is proven to have a significant negative effect on Budget Gaming. Environmental Complexity causes a person to be able to adapt in solving existing problems. One must be able to work with various kinds of complexities that occur both in terms of changes in technology, regulations, customers, suppliers, products, and the environment. With these changes, a manager cannot manipulate existing activities or data, including financial data. Therefore, manufacturing companies in Indonesia can use the results of this study to check the condition and situation of the company

so as to minimize the occurrence of budget games based on psychological capital, leadership style, and environmental complexity.

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