


Enhancing Employee Engagement through Gamification: Empirical Study of an Indonesian State-Owned Enterprise

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Abstract

Original Research Article

Highly engaged employees are vital in Indonesian State-Owned Enterprises. Considering the condition of deterioration in previous findings, particularly infrastructure services, one of the firms within the cluster has launched a nongaming context learning program known as UlarTangga for improving employee engagement. However, the effects of implementing the system to enhance engagement remain uncertain since previous studies showed ambiguous results, especially engagement in the context of an industrial or working environment. This study examines the possible effect of gamification on enjoyment through needs satisfaction to enhance employee engagement. The survey was conducted across departments that have experience using the game-mobile apps. The analysis in this study employs a quantitative methodology, with a total of 129 respondents remaining after a data cleansing process for outliers and testing assumptions. Inferential statistics and correlational analysis with partial least squares structural equation modeling were then used to analyze the data. This study discovered that enjoyment significantly affected employee engagement; gamification significantly affected enjoyment; gamification significantly affected need satisfaction; and need satisfaction significantly affected enjoyment. In addition, enjoyment fully mediates gamification and employee engagement; enjoyment fully mediates need satisfaction and employee engagement; need satisfaction and enjoyment fully mediate gamification on employee engagement; and need satisfaction partially mediates the effect of gamification on enjoyment. Thus, concluded that gamification elements could enhance engagement among workforces in a state-owned firm.

Keywords: State-owned enterprise, employee engagement, enjoyment, gamification, need satisfaction.

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INTRODUCTION

State-Owned Enterprises (SOEs) play an important role in Indonesian economic development and have a significant impact on a wide range of industries, including agriculture, pharmaceuticals, energy, logistics, tourism, mining, media, and infrastructure services (Kim, 2018). Furthermore, as the holding institution in charge of the infrastructure services holding cluster, SOEs that control the infrastructure sector of the national economy require highly engaged employees, which benefits not only from better corporate citizenship and health, but also from more satisfied and loyal employees (Baporikar & Randa, 2020).

The percentage of millennial employees in Indonesian SOEs who are highly engaged at work remains below 20%, and one solution to the SOE's employee engagement problem is to implement a

program that assists employees of all generations in aligning their personal missions with the organization's goals, resulting in meaningful work (Mulyati *et al.*, 2018). Close emotional ties and a strong sense of community motivate, excite, and encourage Indonesian employees, making it difficult for state-owned firms to set aside those factors (Tahir *et al.*, 2019). Supervisors can increase employee engagement by consistently recognizing employees, soliciting employee input, defining firm goals, and gamifying knowledge acquisition (Mouatt *et al.*, 2020). State-owned firms might leverage non-gaming environment to improve staff performance (Hussain *et al.*, 2018). The *UlarTangga* Mobile Game Apps, a non-game learning context program was introduced early 2021 by an Indonesian state-owned firm under Infrastructure Services cluster. According to recent studies, the management believes that this program will improve overall engagement among the nation's 7,814 total employees. Increasing employee experience through

enjoyable activities is becoming increasingly popular in a wide range of life domains and settings, including employment and the workplace such as state-owned firm (Gustomo *et al.*, 2019).

There is a strong link between employee engagement and performance outcomes such as employee retention and productivity (Ismail *et al.*, 2019). Workers in Indonesia reported high levels of stress during the workday in 2020, a first in history, and this is expected to rise even further in 2021, to around 46 percent, up from 42 percent the previous year (Gallup Inc., 2021). To make matters worse for leaders, there have been record-breaking rates of employee departure in the last few months of that year (Soon *et al.*, 2022); mandatory vaccinations; and attempts to balance employee choice with leadership objectives by planning for various combinations of on-site and remote working (Camilleri, 2021). While global employee engagement struggle at 21%, Indonesian workplace able to increase 4 percentage points to 24% in the 2022 report (Gallup, 2022). Employees' positive attitudes and willingness to put effort in the transition process may be facilitated by work engagement (Gerdenitsch *et al.*, 2020).

A study conducted in service-oriented organizations provides answers to critical concerns by leveraging employee support and happiness generated by workplace programs to positively influence employees' engagement through enjoyment (Tsaur *et al.*, 2019). Gamification can improve a system's or service's ability to meet needs, leading to increased autonomy, competence, relatedness of use, and good behaviors (Xi & Hamari, 2018). Applying precise game design patterns and procedures to create an environment that allows people to play for enjoyment, then building a conceptual model to study the effects of two non-game context strategies on impulsive involvement and badges connected to extra enjoyment (Zhang *et al.*, 2020). This learning process can develop "fun at work" experiences and behaviors, boosting need satisfaction and enjoyment (Dewaele & Li, 2021). Several studies have been discovered that companies with high employee engagement levels are more productive, profitable, and ultimately healthier (Kleine *et al.*, 2019; Kniffin *et al.*, 2021).

Workplace learning context programmes to increase employee engagement are still in their early stages (Hammedi *et al.*, 2020). Employee experiences geared towards enjoyment are widely used in education and training to increase engagement, as non-gaming learning is making a real difference by going beyond the basics like points and leaderboards (Vanduhe *et al.*, 2020). Numerous offers are still required to carry out developments in this field based on the opportunities. Hence, it is important to analyze further the effect of game-design elements toward enjoyment as well, as fulfilling the basic needs that ends up increasing

engagement among workforces in the context of a state-owned firm.

LITERATURE REVIEW

Theories link facts to philosophy or meta theory. Separated facts lack relevance, predictive usefulness, rationality, and connectedness within wider theoretical frameworks. In addition to presenting a sound theoretical framework, it likely helps comprehend the mediating processes that are crucial in deciding beneficial impacts between variables.

Employee Engagement (EE)

Employee engagement is a sign of an active psychological state and includes current work experience, and thus regards a more comprehensive concept involving the connection with the company as virtuous (Shuck *et al.*, 2017). Employee engagement scale is sub-factored by cognitive, emotional, and behavioral engagement, and it has 12 items to assess, each with four items (Kosaka & Sato, 2020). Cognitive engagement is the intensity of mental energy directed towards positive organizational outcomes to produce positive results. Emotional investment examines the emotions an employee willingly invests to achieve positive workplace outcomes.

Gamification (GAM)

Each person's perception of a game is unique; therefore, the gamification impact happens only when the person encounters "a gameful experience" meaning intense involvement and delight. Gamification is a way of integrating game elements into non-game situations such as using a website, team collaboration, team development, and modeling new management systems to increase operational efficiency (Huotari & Hamari, 2017). Since its conceptual beginnings in 2010, gamification has acquired significant popularity and has been utilized in a wide range of fields (e.g., fitness, education, health, marketing) Goal progress/feedback, narrative/story, time pressure, competition, leaderboards, targets, and badges are common gamification scale by Yee (2006) employed in those research with 6 items (Xi & Hamari, 2018). While some attempts at gamifying systems have failed, many have proven good results in terms of performance, enjoyment, satisfaction, and engagement.

Need Satisfaction (NS)

Individuals need autonomy to act voluntarily and endorse their actions and behaviors, need competence to perceive their actions' consequences and interact effectively with their environment, and the need to feel socially connected and cared for by significant others. Among the notions are motivation forms and quality, as well as basic psychological requirements, while several fundamental psychological needs have been proposed (Coxen *et al.*, 2021), only three now meet the concept of a basic need satisfaction framework: *competence*, *autonomy*, and *relatedness*.

The definition as workplace research has combined the needs for autonomy, competence, and relatedness into a single score known as psychological need satisfaction, with a 12 items measurement scale in this study (Standage *et al.*, 2005). According to the well-studied macro theory of human motivation known as the self-Determination Theory, people are more inclined to participate in what they are passionate about, the informational versus controlling aspects of external events are analyzed in order to predict and interpret their effects on basic psychological needs and other closely related internal variables (Olafsen *et al.*, 2021).

Enjoyment (ENJ)

Apart from performance outcomes, enjoyment is the degree to which partaking in an activity is deemed to provide pleasure and satisfaction in its rights, thus the 5-item interest/enjoyment scale by Ryan (1990) is used

(Vyvey *et al.*, 2018). Employee experience, during pandemic influences employee engagement more than any other factor, and the majority of respondents believe it can boost engagement (Chanana & Sangeeta, 2020). Humor as a coping strategy, particularly in stressful jobs, can have a positive effect on perceived stress and overall job enjoyment, and the implications of using employee experience are profoundly positive and significant (Bartzik *et al.*, 2021). Employee experience is regarded as an important source of employee engagement because it is a potentially important pathway to both practical and theoretical gains in the field of people management.

Theoretical Framework

Based on the preceding theoretical thus the conceptual framework for the research model in this study shown in Figure 1.

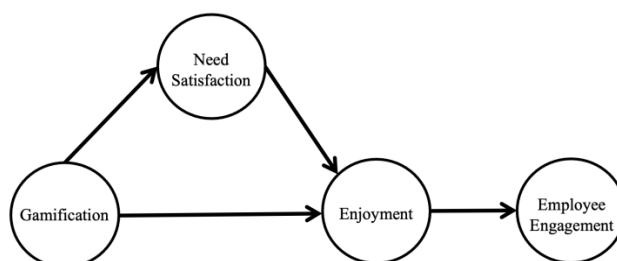


Figure 1: Conceptual Framework

Hypothesis Development

- H₁: The effect of gamification on need satisfaction
- H₂: The effect of gamification on enjoyment
- H₃: The effect of need satisfaction on enjoyment
- H₄: The effect of enjoyment on employee engagement
- H₅: The effect of gamification on employee engagement through enjoyment
- H₆: The effect of need satisfaction on employee engagement through enjoyment
- H₇: The effect of gamification on employee engagement through need satisfaction and enjoyment
- H₈: The effect of gamification on enjoyment through need satisfaction

RESEARCH METHOD

The research model is then organized into online questionnaires, that respondents complete on their own: *Google Forms* format. Convenience sampling is conducted through correlational study in a natural context with minimal researcher interference. With the deductive technique, a hypothesis is formed on the basis of existing theory and then an investigation plan is developed to evaluate the hypothesis. The Likert scale is used as a five-point scale that measures how strongly respondents disagree to agree, and the unit of analysis is employees from various departments within the company who are familiar with the *UlarTangga* game mobile app, with data collection lasting six months beginning in January and ending in June 2022. De Vaus (2014) made recommendation for the equation

95% level of confidence and Z value is 1.96, given the context at an eight percent rate, the minimum sample size should be around 114 returns (Saunders *et al.*, 2019).

The quantitative method was used with nonparametric inferential statistic using outer and inner model test. After cleaning the data and testing assumption using IBM SPSS 26 Statistics, the data will then be analyzed using partial least square structural equation modeling (PLS-SEM) of SmartPLS 3 software. The hypothesis test for this study is a T-test >1.96 value, which is used to discover the effect of the exogenous variables on the endogenous variable studied.

RESULTS AND DISCUSSION

This chapter begins with demographic samples to help understand its composition and representativeness. Following that, direct-effect factors will be assessed. There will also be indirect effects or intervening influences. After removing outliers, the processed results of the data purification provide an overview of the study's data for 129 respondents.

Characteristics of Respondents

This study's respondents come from various departments, age groups, work durations, gender, and frequency using *UlarTangga* game mobile app shown in Table 1.

Table 1: Demographic Profiles

Characteristics		Numbers	Percentage
Gender	Female	38	29.46%
	Male	91	70.54%
Generation	Gen X	57	44.19%
	Millennial	64	49.61%
	Gen Z	8	6.20%
Working Duration	< 10 years	65	50.39%
	> 10 years	64	49.61%
Department	Business Support	22	17.05%
	Engineering	18	13.95%
	Finance	14	10.85%
	Human Capital	16	12.40%
	IT and Development	17	13.17%
	Operations	42	32.56%
UlarTangga Experience	< 1 month	34	26.36%
	1-3 months	47	36.43%
	> 3 months	48	37.21%
Gamification Frequency	Less than once a week	45	34.88%
	Once a week	38	29.46%
	Once a day	46	35.66%

Testing Assumptions

Statistical or graphical approaches measure variable normality using IBM SPSS 26 statistics. Skewness and kurtosis showed that the mean is not in the distribution's center. Kurtosis describes a distribution as overly peaked or excessively flat, indicating that the data was not normally distributed. Below threshold for the rest of the assumptions, so the linearity fulfilled. Heteroscedasticity created by one variable's nonnormality or by one variable's relationship to another, the assumptions are not fulfilled. Multicollinearity is a term for when the differences between the variables are less than 0.5 and the assumptions are met.

Goodness-of-Fit Test

Although PLS-SEM focuses primarily on the interaction between prediction and theory testing, and

results should be validated accordingly, a standardized RMSR was used to assess this study model fit. The SRMR value shown 0.07, which is below 0.08 indicates a minor mismatch for the research model (Hair *et al.*, 2019).

Outer Model Assessment

Indication loadings above 0.708 are recommended (Hair *et al.*, 2019), thus some indicators need to be excluded (e.g., EE4, ENJ4, GAM5, and NS6). Because indicator collinearity was determined to be less than 5, thus several indicators had to be removed. When the Average Variance Score (AVE) value is greater than the recommended value of 0.5, the underlying variables are measured, as shown below in Figure 2, where Gamification is 0.664, Need Satisfaction is 0.653, Enjoyment is 0.794, and Employee Engagement is 0.763.

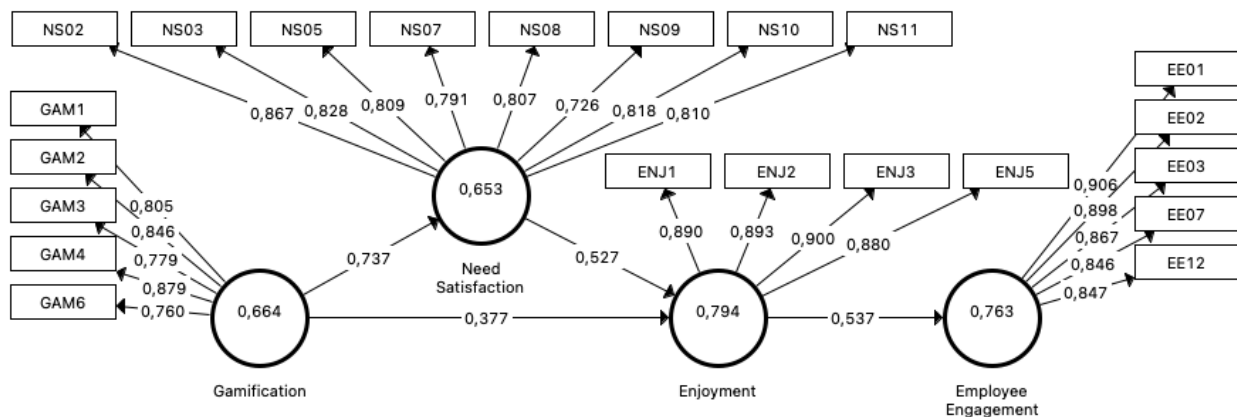


Figure 2: Measurement Model

Convergent Validity

Cronbach's alpha assumes identical thresholds but generates lower results than composite reliability. Examine internal consistency reliability using

composite reliability (CR); 0.70 to 0.90 is "acceptable to good" but higher than 0.95 could lowering construct validity as shown in Table 2. Thus, convergent validity was established for this study.

Table 2: Cronbach's Alpha, and CR

Variables	Cronbach's Alpha	CR
Employee Engagement	0.922	0.941
Enjoyment	0.913	0.939
Gamification	0.873	0.908
Need Satisfaction	0.924	0.938

Discriminant Validity

Traditional metrics suggest that the AVE of each construct should be compared to the squared inter-construct correlation of the same construct and all other reflectively measured constructs in the structural model as shown in Table 3. The cross-loading of all items is also stronger on the underlying construct to which they

belong, rather than the other constructs. The HTMT is the mean item correlation across constructs relative to the (geometric) mean item correlations for the same construct (Hair *et al.*, 2019). High HTMT causes discriminant validity issues, which should be lower than 0.90 as depicted in Table 4. Hence, strong support is provided for establishing discriminant validity.

Table 3: Fornell-Larcker Criterion

	EE	ENJ	GAM	NS
Employee Engagement	0.873			
Enjoyment	0.537	0.891		
Gamification	0.593	0.766	0.815	
Need Satisfaction	0.564	0.805	0.737	0.808

Note: Bold values represent the square-root of AVE

Table 4: Heterotrait-Monotrait (HTMT)

	EE	ENJ	GAM
Enjoyment	0.576		
Gamification	0.658	0.852	
Need Satisfaction	0.594	0.867	0.806

Inner Model Assessment

Collinearity difficulties can emerge even with VIF values as low as 3-5, the inner VIF values should be no more than 3, the highest score is 2.19. The strength of each structural path is determined by the R² value for the dependent variable; NS is 0.543, ENJ is 0.714, and EE is 0.289, guidelines of 0.75 and 0.5 considered substantial and moderate, while 0.25 is considered weak as shown in Figure 3. The f² effect

sizes of GAM->ENJ 0.227, ENJ->EE 0.406, NS->ENJ 0.443, and GAM->NS 1.189 used to explain the presence of mediation; values 0.15 and 0.35 represent medium and large. Small differences between predicted and original values increase by Q² value; NS is 0.343, ENJ is 0.557, and EE is 0.209, indicating higher predictive accuracy, where values above 0, 0.25, and 0.50 indicate small, medium, and large (Hair *et al.*, 2019). Hence, the predictive capability is established.

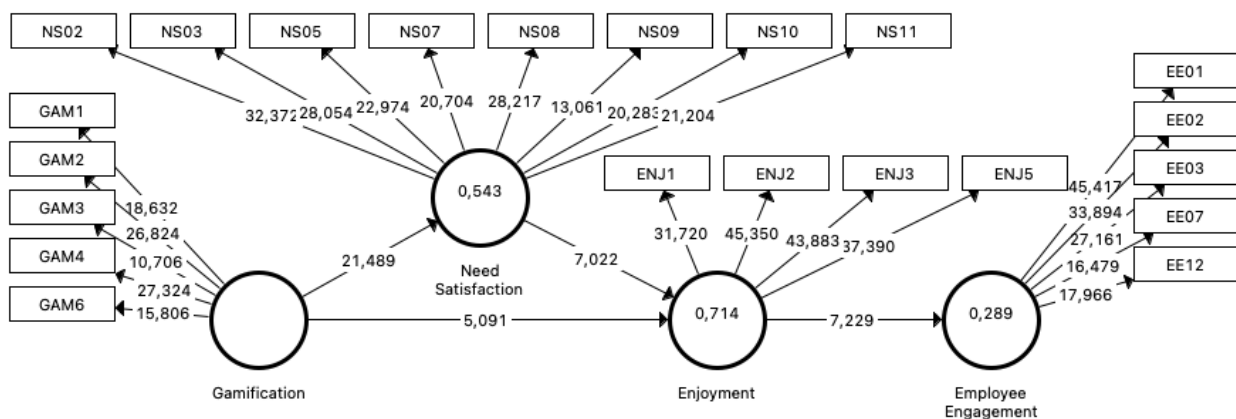


Figure 3: Structural Model

Hypothesis Testing Results

Following a discussion for direct and indirect effect below; the model was bootstrapped 5,000

samples of the hypothesis development testing results for the path coefficients, standard deviation, and conclusions.

Table 5: Hypothesis Testing Results

Path	Coefficient	Std Dev	T-Statistics	P-Values	Conclusion
GAM -> NS	0.737	0.034	21.489	0.000	H ₁ accepted
GAM -> ENJ	0.377	0.073	5.091	0.000	H ₂ accepted
NS -> ENJ	0.527	0.074	7.022	0.000	H ₃ accepted
ENJ -> EE	0.537	0.075	7.229	0.000	H ₄ accepted
GAM -> ENJ -> EE	0.203	0.053	3.837	0.000	H ₅ accepted
NS -> ENJ -> EE	0.283	0.056	5.079	0.000	H ₆ accepted
GAM -> NS -> ENJ -> EE	0.209	0.043	4.911	0.000	H ₇ accepted
GAM -> NS -> ENJ	0.388	0.056	6.885	0.000	H ₈ accepted

Gamification has been shown to have a significant impact on need satisfaction. It shows that a rise in gamification would lead to a 73.7% rise in need satisfaction on average. Higher t-values of 21.489 imply a big difference between the two sample sets. And large t-scores imply group differences and gives the understanding that ranking lists are easily found, implying the importance of interacting rankings within the user when employee uses the app, it is because they want to use it for the ranking list. Therefore, putting *UlarTangga* as nongame context activity helps human resource management, campaign idea to create a gamified design fulfilling the basic need. Gamification has also shown a positive and significant impact on enjoyment. Despite having the lowest mean in both variables, it is brave to assert that the material contents based on learning needs, exhibiting the importance of engaging in customizing, correspond with the respondents' imaginations for fun and excitement driven by gamification

Need satisfaction has a positive and significant impact on enjoyment. This illustrates that a gain in need satisfaction would, in turn, result in a boost in enjoyment of 52.7%. When participants are free to play, it gives the idea that the e-learning system atmosphere is fun for them. According to the findings, gamification implemented in work environment produce varied game dynamics such as rewards, competitiveness, altruism, and self-expression (Gerdenitsch *et al.*, 2020). Sustainable gamification design should deliver advantages that are relevant to and valued by employees.

Enjoyment has a positive and significant impact on employee engagement. It demonstrates that an increase in enjoyment will result in a 53.7 percent rise in engagement. When the employment portrait of the e-learning system in *UlarTangga* piques the interest of each respondent while they are at work, they will concentrate an incredible amount of attention on their task. It provides several answers to critical questions concerning how firms and organizations may use gamification to positively influence employee behavior.

Mediation occurs when both the direct and indirect effects are considerable, which indicates that mediation occurred to some degree. Enjoyment fully mediates the influence of need satisfaction on employee engagement. The effect of gamification on employee engagement is completely mediated by enjoyment as a result of this and the fact that gamification has no direct impact. Consequently, it is only via enjoyment that need satisfaction has any influence on employee engagement. Therefore, enjoyment acts as a complete mediator of the relationship between need satisfaction and employee engagement. When the respondents use the app, they get the sense that they are valued in comparison to others; in particular, when their creativity is encouraged by utilizing the e-learning system, they feel proud of the work that they do, which indicates that they are using the app correctly. When both the direct effect and the indirect effect are considerable, this indicates that mediation took place to some extent. As a result, the effect of gamification on employee engagement is mediated in full by need satisfaction and enjoyment.

Need satisfaction partially mediates the effect of gamification on enjoyment. The indirect effect of gamification on enjoyment is significant, and the direct effect likewise is also significant. Hence, a portion of the effect of gamification on enjoyment is mediated by need satisfaction, yet gamification still explains a portion of enjoyment that is independent of need satisfaction. It may also demonstrate that when respondents are content with their own performance while using *UlarTangga*, it is easy to conclude that the use of an e-learning system is enjoyable for them.

CONCLUSION

This study concluded that gamification had a significant impact on enjoyment through need satisfaction to enhance employee engagement. Need satisfaction found partially mediates the role of gamification on enjoyment, and thus enjoyment has a positive effect on increasing employee engagement.

Employee satisfaction gained through gamification is an effective way to motivate employees

to participate in activities; thus, SOEs managers should encourage employees to participate actively. The company could provide them with a sense of purpose, satisfaction, and enjoyment in their work in exchange for non-monetary compensation. This non-gaming learning environment can also be used as part of a competency development program for employees. Other Indonesian SOEs should embrace gamification to improve employee engagement through team-building games. So, management is encouraged to invest in the professional growth of employees and make sure that everyone knows what is expected of them.

RECOMMENDATION

Future research could investigate how different generations react to gamification in the workplace. Then, in order to optimize the performance and efficiency of a state-owned firm, we could examine the financial impact of gamification on employee engagement. More research on employee behavior in the aftermath of the Covid19 outbreak is required to better understand the effects of the post-pandemic working environment on employee engagement.

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