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Implementation of Gamification-based Reward and Recognition System to Increase Employee Motivation and Loyalty

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Abstract

This study aims to analyze the effect of gamification-based reward and recognition system implementation on employee motivation and loyalty. Data was collected from 100 respondents in specific industries through questionnaires, and analyzed using multiple linear regression. The results showed that the Challenge element in the gamification system had a significant and positive influence on motivation (B = 0.689, Sig. = 0.000) and employee loyalty (B = 0.208, Sig. = 0.005). The Point, Badge, and Board variables do not show a significant influence on employee motivation and loyalty. The correlation coefficient (R) of 0.839 for motivation and 0.730 for loyalty indicates a strong relationship between the independent and dependent variables. R Square of 0.703 for motivation and 0.532 for loyalty indicates that the model can explain 70.3% of variability in motivation and 53.2% of variability in loyalty. Adjusted R Square of 0.691 for motivation and 0.512 for loyalty indicates the model's good explanatory ability after considering the number of predictors. Based on these results, companies are advised to focus more on developing the Challenge element in gamification-based reward and recognition systems to increase employee motivation and loyalty.

Keywords: Gamification, Reward and Recognition, Employee Motivation, Employee Loyalty, Regression Analysis

Introduction

In a competitive business landscape, employee motivation and loyalty play a critical role in an organization’s success. Traditional reward systems may not have a long-term impact, prompting the exploration of innovative approaches such as gamification (Wangoo Lee ,2024). Gamification, integrating game elements such as points and leaderboards into the work environment, has shown promise in increasing employee engagement and productivity (D. A. S. Rebacca,2024). Research shows that gamified training can improve employee motivation and performance, especially in sectors such as banking (Marcelo Magioli Sereno ,2024). Additionally, gamification has been found to reduce reward sensitivity and perceptions of unfair treatment, contributing to more positive employee experiences and loyalty (Wangoo Lee,2024). By leveraging gamification in reward and recognition systems, organizations can foster a more stimulating and motivating workplace culture, ultimately driving continued employee engagement and loyalty (Inna Balahurovska,2024). In a dynamic business landscape, retaining motivated and loyal employees is critical to organizational success (Angga Setiawan, 2024). Studies emphasize the importance of factors such as a supportive work environment,

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opportunities for professional growth, fair compensation, and effective communication in enhancing employee satisfaction and loyalty (Moh. Sutoro, 2024). Employee loyalty is linked to long-term engagement and has a positive impact on retention rates, highlighting the importance of factors such as employee treatment, job satisfaction, leadership quality, and training and development programs in fostering loyalty (Dr. Harsandaldeep Kaur, 2024). In addition, modern management approaches emphasize the role of leadership in creating a positive work environment and utilizing strategic reward systems to motivate employees and drive performance (Inna Balahurovska, 2024). By aligning organizational strategy with effective reward and recognition systems, companies can foster a culture of motivation, loyalty, and high performance among their workforce. Gamification, the integration of game elements into non-game environments, presents a promising avenue to enhance traditional reward and recognition systems in human resource management by driving increased engagement and motivation (D. A. S. Rebacca,2024). While conventional methods such as financial bonuses and employee of the month awards may lose their novelty and effectiveness over time, gamification offers a dynamic and interactive approach to maintaining employee interest and motivation in the digital age (Mr. Sourabh P,2024). By leveraging game strategies such as reward systems, badge systems, and narrative storytelling, organizations can create more engaging and memorable experiences for employees, ultimately leading to improved performance and job satisfaction (Jitendra Sharma,2024). Implementing gamification principles in HR processes not only increases employee engagement but also aligns with the evolving technological landscape of the modern workplace, providing organizations with a valuable tool to drive sustained motivation and productivity among their workforce (Mr. Sourabh P,2024). Gamification has been identified as a powerful tool for enhancing employee engagement and productivity across sectors, including banking and human resources (D. A. S. Rebacca, 2024). Elements such as reward systems, badge systems, and narrative storytelling play a vital role in fostering engagement, motivation, and learning among employees (Jitendra Sharma , 2024). While gamification has been widely adopted in marketing and HR processes to enhance customer acquisition, loyalty, recruitment, and training, its specific impact on reward and recognition systems in enhancing employee motivation and loyalty remains an area that requires further research and exploration (Verenice Sánchez Castillo , 2024). By combining a gamified approach with points, badges, leaderboards, and challenges, organizations have the potential to create a more engaging and competitive work environment that stimulates employees to achieve goals and actively participate in company activities, ultimately leading to increased motivation and loyalty.

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Gamification has been extensively studied in various contexts, demonstrating its potential to enhance employee engagement, productivity, and loyalty. Research has shown that gamified approaches can significantly improve worker productivity and engagement (D. A. S. Rebacca, 2024), while also reducing consumer sensitivity to unfair reward measures and preferential treatment in loyalty programs (Wangoo Lee, 2024). Furthermore, the impact of gamification on training systems has been explored, revealing valuable insights into the outcomes of gamified versus traditional training methods in enhancing employee motivation and job satisfaction (Hyelda Ibrahim Kefas, 2024). Furthermore, the impact of employee satisfaction with HR practices, mediated by job dedication and moderated by gamified incentives, has been highlighted as an important factor in improving job performance in organizations (Sattwik Mohanty, 2024). By understanding these findings, human resource management practitioners can design innovative and effective gamification-based reward and recognition systems to enhance employee motivation and loyalty, ultimately leading to improved organizational outcomes. Gamification-based reward and recognition systems are increasingly recognized as an effective tool for enhancing employee motivation and loyalty (D. A. S. Rebacca, 2024). Studies have shown that gamification strategies can significantly improve employee engagement and productivity in organizations (Puttam Lavanya, 2024). Furthermore, the implementation of gamified approaches in the workplace has been associated with creating a more motivated and productive workforce, ultimately leading to higher levels of employee engagement (D. A. S. Rebacca, 2024). Factors such as the design of gamification elements, integration of rewards, and alignment with organizational goals play a significant role in the successful implementation of gamification in the context of reward and recognition systems (Wangoo Lee , 2024). By analyzing data from various companies that have adopted gamification, this study aims to provide valuable insights into the effectiveness of gamification in enhancing employee motivation, loyalty, and overall engagement levels. Gamification has emerged as a strategic tool in human resource management, offering new insights into enhancing employee motivation and loyalty (Marcelo Magioli Sereno, 2024). By incorporating game-like elements into non-game contexts, organizations can increase employee engagement, job dedication, and ultimately, productivity and job satisfaction (Sattwik Mohanty, 2024). Understanding the impact of gamification on various HR practices, such as recruitment, training, and development, enables the design of more effective reward and recognition programs, leading to a more motivated and productive workforce (Behzad Mohammadian, 2024). This study not only contributes theoretically by exploring the nuances of gamification in HR but also provides practical implications for designing innovative reward and recognition

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systems in organizations, especially in service-oriented sectors such as banking and tourism (Sattwik Mohanty, 2024).

Literature Review

Human Resource Management and the Importance of Rewards and Recognition

Human resource management (HRM) does play a vital role in fostering a productive and harmonious work environment by effectively managing human resources to align with the goals and objectives of the organization (Adeniyi Adebayo Uthman, 2024). HRM functions such as recruitment and selection, training and development, performance management, compensation and benefits, employee relations, employee engagement, and motivation all contribute to improving employee satisfaction, productivity, and retention, thereby promoting organizational success (F. Hidayatulloh, 2024). In addition, prioritizing workplace safety and health practices is essential, as they have a direct positive impact on employee productivity, emphasizing the importance of ensuring adequate safety measures in an organization's strategy to improve employee well-being and productivity levels (Dr C K Gomathy, 2024). By focusing on these aspects, HRM can create a conducive work environment that fosters productivity, employee satisfaction, and organizational effectiveness, which ultimately leads to a harmonious work environment (Sandeep Shinde, 2024). According to Armstrong and Taylor (2014), the reward and recognition system is one of the main components in HRM that aims to increase employee motivation and loyalty. Rewards can be in the form of financial compensation, awards, and other benefits, while recognition includes non-material recognition such as praise and social recognition.

Employee Motivation and Loyalty

Employee motivation is indeed an internal drive that compels individuals to pursue certain goals, which originate from their innate needs and drives (Rea Aprila Sobandi, 2023). This drive is essential to increasing productivity and job satisfaction in organizations, with leadership playing a vital role in fostering a positive work environment that is conducive to motivation (Inna Balahurovska, 2024). On the other hand, employee loyalty relates to the loyalty and dedication that employees show towards their organization, reflecting their commitment and willingness to contribute to its success (Inna Balahurovska, 2024). Management strategies and approaches that prioritize motivation and loyalty are essential to organizational success, as motivated and loyal employees are more likely to be engaged, productive, and willing to go the extra mile for organizational goals (Dicka Kumara Syahlan, 2023). Robbins and Judge (2017) state that employee motivation and loyalty are essential to improving employee performance

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and retention. Motivated and loyal employees tend to have better performance, lower absenteeism rates, and contribute more significantly to organizational success.

Gamification in HRM

Gamification is the application of game elements in non-game contexts to increase user engagement and motivation. Gamification involves integrating game elements into non-game contexts to increase user engagement and motivation (Xiaoshang Wang, 2024). Elements such as reward systems, badge systems, narrative storytelling, integration of teamwork, and the use of game characteristics in educational software have been identified as key components of a successful gamification strategy. By incorporating social, immersive, and achievement components, designers can address users' psychological needs for autonomy, competence, and relatedness, ultimately leading to increased satisfaction and continued usage intentions. The effectiveness of gamification in enhancing learning experiences, promoting behavioral change, and fostering community cohesion has been demonstrated across multiple domains, highlighting its versatility and potential for positive outcomes in diverse contexts. Overall, gamification serves as a powerful tool to inspire individuals, drive engagement, and achieve desired behavioral outcomes. Deterding et al. (2011) define gamification as "the use of game design elements in non-game contexts." In the context of HR, gamification can be used to make work activities more engaging and competitive. Elements such as points, badges, leaderboards, and daily challenges can motivate employees to achieve certain targets and actively participate in company activities.

Gamification Elements

Gamification elements encompass a variety of components that can increase user engagement and motivation. These elements include points, symbols, leaderboards, events, incentives, storytelling, and progression components (Kiran Shashwat ,2024). They are designed to meet users' basic psychological needs such as autonomy, competence, and relatedness, which are critical for continued engagement and satisfaction (Xiaoshang Wang,2024). Gamification elements can be used in educational settings to increase student motivation and performance, as seen in the use of gamified educational resources for learning programming languages such as Python (Nadezhda Kurganova,2023).

Additionally, in the context of foreign language teaching, gamification strategies such as task guidance, content feedback, decision-making opportunities, and peer interaction have been found to promote engagement, while aspects such as content complexity and individual

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collaboration can pose challenges and require careful implementation (A. Tokzhigitova, 2023). Werbach and Hunter (2012) identified several key elements in gamification, namely: Points: Used to measure employee achievement and provide immediate feedback. Badges: Visual awards that indicate specific achievements or skills. Leaderboards: Ranking lists that show the best employees based on their achievements. Challenges: Tasks or missions that employees must complete to earn points or badges.

Implementation of Gamification in Reward and Recognition Systems

Gamification, as explored in various studies, plays a vital role in enhancing reward and recognition systems by infusing game elements into non-game contexts. The art behind gamification involves designing reward systems that cater to audience preferences, motivations, and goals [1]. Additionally, badge systems are critical to recognizing achievements and motivating users, with elements such as symbolic design, customization, and feedback mechanisms contributing to a vibrant badge ecosystem (Jitendra Sharma,2024). Furthermore, gamification has been shown to reduce consumer sensitivity to reward size and unfair preferential treatment, highlighting its effectiveness in loyalty programs (Wangoo Lee,2024). By integrating gamification into systems such as task management, organizations can make work more organized, engaging, and enjoyable, ultimately increasing user engagement and goal achievement (Januponsa Dio Firizqi,2022).

Overall, the implementation of gamification in reward and recognition systems has proven to be a valuable strategy to drive engagement, motivation, and positive behavioral outcomes across domains. Research by Hamari, Koivisto, and Sarsa (2014) suggests that gamification can increase employee engagement and motivation through more engaging and dynamic reward mechanisms. Gamification-based reward and recognition systems offer a more interactive and competitive approach compared to traditional systems. This study indicates that gamification elements can encourage employees to actively participate in company activities and achieve higher performance.

The Impact of Gamification on Employee Motivation and Loyalty

Gamification has a significant impact on employee motivation and loyalty in various contexts. It increases participation, fosters knowledge, collaboration, and creativity, aligning learning with business goals (Verenice Sánchez Castillo,2024). While the introduction of gamification elements in loyalty programs may not directly affect intrinsic motivation or need satisfaction in a specific online store setting (Zengfeng Zhao, 2024), it can reduce employee

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boredom and improve performance in repetitive work processes by introducing non-monetary loot point rewards, despite fairness concerns (Wangoo Lee, 2024). Furthermore, the gamification-induced reward desensitization effect observed in hotel loyalty promotions suggests that gamification effectively reduces consumers' sensitivity to unfair reward size and preferential treatment, improving customer experience and motivating specific actions (Iryna Varis, 2023). In mobile health applications, gamification strategies have a positive impact on customer loyalty by offering health services in a rewarding and motivating manner, leading to increased user engagement and loyalty (Cansu Toprak . 2024). Several studies have shown that gamification can increase employee motivation and loyalty. Mekler et al. (2017) found that gamification can increase employee intrinsic motivation by making tasks more enjoyable and challenging. In addition, research by Xu (2011) shows that gamification can increase employee loyalty by creating a more engaging and motivating work environment.

Factors Affecting the Success of Gamification Implementation

The success of gamification implementation depends on various factors identified in the study. Factors that influence the effective use of gamification include perceived ease of use, student satisfaction, and perceived usefulness, which significantly impact gamification quality and software engineering intentions (Tri Wahyuningsih, 2024). In addition, motivation, engagement, perceived utility, game design, and student perspectives are important elements for the successful implementation of gamification in Information Systems education at the undergraduate level (Natalia Limantara, 2022). Furthermore, the failure of gamified projects can be attributed to factors such as self-efficacy, immersion dynamics, personalization privacy paradox, and disengagement, highlighting the importance of addressing these issues for the successful implementation of gamification in organizations (Abhishek Behl, 2023). Furthermore, design considerations that focus on pedagogical goals and simulation interactions play a critical role in the success of gamification applications in engineering education, fostering student motivation, commitment, and participation (Omar Chamorro-Atalaya, 2023). The success of gamification implementation in reward and recognition systems depends on several factors, including: Appropriate design: Gamification elements must be designed according to the context and needs of employees (Blohm & Leimeister, 2013). Management support: Support from top management is essential for the success of gamification implementation (Morschheuser et al., 2017). Employee involvement: Active involvement of employees in the gamification process is essential to achieve desired outcomes (Seaborn & Fels, 2015).

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Empirical Research on Gamification in HRM

Empirical research on gamification in Management and Decision Sciences (HRM) has become a growing area of interest in fields such as human resource management, education, and learning analytics. Studies have highlighted the benefits of gamification in improving employee performance, engagement, and training outcomes (Sattwik Mohanty, 2024), as well as in increasing student motivation and participation in mathematics learning (Elmawati Elmawati , 2023). Furthermore, research has focused on understanding user typologies and how they influence the effects of gamification, emphasizing the importance of tailoring the gamification experience to individual needs (Jeanine Krath, 2024). In addition, the use of learning analytics in educational gamification has been explored to assess and improve game experiences, student behavior, and learning outcomes (Ahmed Hosny Saleh Metwally , 2022). These findings collectively underscore the importance of empirical research in exploring the effectiveness and implications of gamification in HRM across domains. An empirical study conducted by Herzig et al. (2015) showed that gamification in HRM can improve employee performance and satisfaction. This study showed that employees who engage in gamification systems tend to have higher levels of motivation and loyalty. In addition, a study by Sailer et al. (2017) showed that gamification elements, such as points and badges, can increase employee engagement in development and training programs.

Methods

This study will use a quantitative approach with survey methods and statistical analysis to evaluate the implementation of a gamification-based reward and recognition system in increasing employee motivation and loyalty. The quantitative approach was chosen to measure the influence of gamification elements objectively and to obtain data that can be analyzed statistically. This study will use an explanatory research design to understand the relationship between the variables studied, namely the implementation of a gamification-based reward and recognition system (independent variable) and employee motivation and loyalty (dependent variable). Population, Employees from various companies that have implemented a gamification-based reward and recognition system. The sample will be taken using a purposive sampling method to ensure that respondents have experience with the gamification system. The number of samples taken will be determined based on the Slovin formula with a 5% error rate.

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Results and Discussion

Descriptive Analysis

Demographic Characteristics of Respondents in this study include, Age of respondents, <25 years: 20%, 25-34 years: 40%, and 35-44 years by 25%, while, >45 years as much as 15%, while the gender of respondents involved in the study included Male: 55% and Female: 45%, with a duration of work <1 year: 15%, 1-3 years: 30%, 3-5 years: 25% and >5 years: 30%.

Interpretation:

Shows that the majority of respondents have a positive perception of the gamification elements in the reward and recognition system. Most respondents also showed high levels of motivation and loyalty. The diverse demographic distribution provides a representative picture of the wider population, so that the results of this study can be considered valid to conclude the impact of gamification implementation on employee motivation and loyalty

Reliability and Validity Test

The validity test was conducted using the confirmatory factor analysis (CFA) method. Validity Criteria:

• Bartlett's Test of Sphericity: Significance <0.05 indicates that the correlation between items is significant

Table 1. Validity Test

Correlations

		Point	Badge	Board	Challenge	Motivation	Loyalty
Point	Pearson Correlation	1	,924**	,770**	,590**	,592**	,687**
	Sig. (2-tailed)		0,000	0,000	0,000	0,000	0,000
	N	100	100	100	100	100	100
Badge	Pearson Correlation	,924**	1	,733**	,572**	,564**	,665**
	Sig. (2-tailed)	0,000		0,000	0,000	0,000	0,000
	N	100	100	100	100	100	100
Board	Pearson Correlation	,770**	,733**	1	,658**	,574**	,607**
	Sig. (2-tailed)	0,000	0,000		0,000	0,000	0,000
	N	100	100	100	100	100	100
Challenge	Pearson Correlation	,590**	,572**	,658**	1	,827**	,596**
	Sig. (2-tailed)	0,000	0,000	0,000		0,000	0,000
	N	100	100	100	100	100	100
Motivation	Pearson Correlation	,592**	,564**	,574**	,827**	1	,583**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000		0,000
	N	100	100	100	100	100	100
Loyalty	Pearson Correlation	,687**	,665**	,607**	,596**	,583**	1
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	
	N	100	100	100	100	100	100

**. Correlation is significant at the 0.01 level (2-tailed).

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Based on the results of statistical data processing SPSS, it was found that all items have factor loadings > 0.05, indicating that the instrument in this study is valid.

Reliability Test

Reliability Criteria:

• Cronbach's Alpha value > 0.7 indicates that the instrument has good internal consistency.

Table 2. Reliability Test.

Reliability Statistics	
Cronbach's Alpha	N of Items
0,913	6

F Test Model 1

Tabel 3. F Test

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	499,710	4	124,927	56,300	,000[b]
	Residual	210,800	95	2,219		
	Total	710,510	99			

a. Dependent Variable: Motivation

b. Predictors: (Constant), Challenge, Badge, Board, Points

The F value of 56,300 indicates the strength of the regression model in explaining the variation in the dependent variable (Motivation). Significance (Sig.): The Sig. (p-value) of .000 indicates that the overall regression model is very significant. This value is much smaller than $\alpha = 0.05$, so we can reject the null hypothesis (H0) which states that all regression coefficients are simultaneously equal to zero.

F Test Model 2

Table 4. F Test Model 2

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	270,669	4	67,667	27,019	,000[b]
	Residual	237,921	95	2,504		
	Total	508,590	99			

a. Dependent Variable: Loyalty

b. Predictors: (Constant), Challenge, Badge, Board , Point

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F-Statistic: The F value of 27.019 shows the strength of the regression model in explaining the variation in the dependent variable (Loyalty). The Sig. (p-value) of .000 shows that the overall regression model is very significant. This value is much smaller than α = 0.05, so we can reject the null hypothesis (H0) which states that all regression coefficients are simultaneously equal to zero.

T-test model 1

Table 5. T-test model 1

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5135,852	2	3057,725	75,320	,000[b]
	Residual	3750,788	77	40,732		
	Total	9285,840	77			

a. Dependent Variable: Performance

b. Predictors: (Constant), Training, Inclusive Leadership

The constant value (intercept) of 3.492 shows the average value of employee Motivation when all independent variables are zero. The t value of 3.599 with sig. 0.001 shows that this constant is significant at the 0.05 level, meaning that this constant is significantly different from zero.

T-test model 2

Table 6. T-test model 2

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3,364	1,031		3,263	0,002
	Point	0,273	0,154	0,349	1,773	0,079
	Badge	0,181	0,220	0,152	0,826	0,411
	Board	0,060	0,147	0,049	0,407	0,685
	Challenge	0,208	0,073	0,271	2,862	0,005

a. Dependent Variable: Loyalty

The constant value (intercept) of 3.364 indicates the average value of employee loyalty when all independent variables are zero. The significant t value (p = 0.002) indicates that this constant is significantly different from zero.

Coefficien determinan

Tabel 8. Coefficien determinanMotivation

Model Summary

Model	*R*	*R Square*	*Adjusted R Square*	*Std. Error of the Estimate*
1	*,839[a]*	*0,703*	*0,691*	*1,490*

a. Predictors: (Constant), Challenge, Badge, Board , Point

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The correlation coefficient (R) of 0.839 indicates a strong relationship between the independent variables (Challenge, Badge, Board, Point) and the dependent variable (Loyalty). This R value indicates the strength of the linear association between the variables in the model

Tabel. 9. Coefficient Deterninan Loyalty

Model Summary

Model	R	*R Square*	*Adjusted R Square*	*Std. Error of the Estimate*
1	,730[a]	*0,532*	*0,512*	*1,583*

a. Predictors: (Constant), Challenge, Badge, Board , Point

The correlation coefficient (R) of 0.730 indicates a strong relationship between the independent variables (Challenge, Badge, Board, Point) and the dependent variable. This R value indicates the strength of the linear association between the variables in the model. This value indicates that there is a significant relationship between the gamification factors and the dependent variable

Based on the results of the ANOVA test, it can be concluded that the regression model involving the predictors Challenge, Badge, Board, and points has a significant effect on employee Motivation. The high F value and very low Sig. value ($p < 0.001$) indicate that this regression model significantly explains the variation in employee Motivation. Therefore, it can be concluded that the gamification elements (Challenge, Badge, Board, points) together make a significant contribution to increasing employee Motivation.

This supports the hypothesis that the implementation of a gamification-based reward and recognition system has a significant effect on employee Motivation.

Based on the results of the ANOVA test, it can be concluded that the regression model involving the predictors Challenge, Badge, Board, and points has a significant effect on employee Loyalty. The high F value (27.019) and very low Sig. value ($p < 0.001$) indicate that this regression model significantly explains the variation in employee Loyalty. Therefore, it can be concluded that the gamification elements (Challenge, Badge, Board, points) together contribute significantly to increasing employee Loyalty. This supports the hypothesis that the implementation of a gamification-based reward and recognition system has a significant effect on employee Loyalty.

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From the results of the regression analysis, the Challenge variable has a significant and positive effect on employee Motivation. This means that an increase in the Challenge element in a gamification-based reward and recognition system significantly increases employee Motivation.

On the other hand, the Point, Badge, and Board variables do not have a significant effect on employee Motivation. Although Point has a positive coefficient, its effect is not statistically significant. The Badge and Board variables even have negative coefficients, but their effects are also not significant. Overall, these results indicate that the Challenge element is the main factor influencing the increase in employee Motivation in the context of a gamification-based reward and recognition system.

From the results of the regression analysis, the Challenge variable has a significant and positive effect on employee Loyalty. This means that an increase in the Challenge element in a gamification-based reward and recognition system significantly increases employee Loyalty. In contrast, the Point, Badge, and Board variables do not have a significant effect on employee Loyalty at the $\alpha = 0.05$ level. Although Point shows a positive effect approaching significance, its p-value (0.079) is still higher than $\alpha = 0.05$, so it is not considered statistically significant.

Overall, these results indicate that the Challenge element is the main factor influencing the increase. The regression model tested shows a strong and significant relationship between the independent variables and the dependent variable. R^2 of 0.703 indicates that the model can explain about 70% of the variation in employee Loyalty. The slightly lower Adjusted R^2 value (0.691) indicates that this model also considers the number of predictors well. With a standard error of the estimate of 1,490, this model has quite good prediction accuracy.

Overall, the regression model involving the Challenge, Badge, Board, and Point elements provides a good explanation of the variation in employee Loyalty and can be considered an effective model to explain the influence of these variables on Loyalty. The regression model tested shows a strong relationship between the independent variables (Challenge, Badge, Board, Point) and the dependent variable. The R^2 of 0.532 indicates that the model can explain about 53% of the variation in the dependent variable. The slightly lower Adjusted R^2 value (0.512) indicates that the model takes into account the number of predictors well. With a standard error of estimate of 1.583, the model shows moderate prediction accuracy. Overall, although the model does not explain all the variation in the dependent variable, it still provides a significant

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explanation and can be considered an effective model for understanding the influence of gamification elements on the dependent variable analyzed..

Conclusion

Relationship and Strength of the Model

The correlation coefficient (R) of 0.839 for the Motivation model and 0.730 for the Loyalty model indicates a strong relationship between the independent variables (Challenge, Badge, Board, Point) and the dependent variables (Motivation and Loyalty). The R Square value of 0.703 for Motivation and 0.532 for Loyalty indicates that the model can explain 70.3% of the variation in employee Motivation and 53.2% of the variation in employee Loyalty. This indicates that the model has good explanatory power for Motivation and moderate for Loyalty.

Influence of Independent Variables

Motivation: The Challenge variable has a positive and significant influence on employee Motivation (B = 0.689, Sig. = 0.000). This shows that increasing the Challenge element in the gamification-based reward and recognition system significantly increases employee Motivation. - The Point, Badge, and Board variables do not have a significant effect on employee Motivation, although Point shows a positive effect approaching significance (B = 0.203, Sig. = 0.166). - Loyalty: The Challenge variable also has a positive and significant effect on employee Loyalty (B = 0.208, Sig. = 0.005). This shows that increasing the Challenge element in the gamification system also increases employee Loyalty. The Point variable has a positive but insignificant effect on Loyalty (B = 0.273, Sig. = 0.079), and the Badge and Board variables do not show a significant effect.

Predictive Power and Model Accuracy

Adjusted R Square of 0.691 for Motivation and 0.512 for Loyalty indicates that the model still has good explanatory power after considering the number of predictors. The standard error values of the estimates of 1.490 for Motivation and 1.583 for Loyalty indicate moderate model prediction accuracy.

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