

Gamification: A Tool To Enhance Employee Engagement And Performance

Abdul Basit¹ Zubair Hassan ² Nisa Omar³ Sharmila Sethumadavan⁴, NZ Jhanjhi⁵

Abstract

The purpose of this research is to examine the impact of gamification on employee engagement and work performance among employees working in IT Multinationals in Malaysia. And to examine the mediating effect of employee engagement on the relationship between gamification and employee performance. Finally, to test the moderating effect of gamification on the relationship between employee engagement and employee performance. Data was collected using a self-rating Likert-Scale questionnaire with a rating scale from 1-5, denoting 1 is strongly disagree, and 5 denotes strongly agree. A Sample of 220 employees were selected using simple random probability sampling of those employees working in IT Multinationals. Data were analyzed using confirmatory factor analysis and structure equation modelling under bootstrapping methods via AMOS22. The result shows that gamification does not directly affect employee performance among the IT Multinational in Malaysia. However, gamification has a significant and positive effect on employee engagement. Also, the result shows that employee engagement is a full mediator and gamification has a moderating effect on the relationship between employee engagement and performance. This study is useful for Human Resource Development intervention through effective training programs to enhance gamification to boost engagement and performance. Through effective gamification with sensitivity, creativity and implemented it within the organization can cultivate highly competitive culture among the staff, resulting in high employee performance through employee engagement. This finding shows that employee engagement is very important to realize the benefit of gamification to foster employee performance.

Keywords— Gamification, employee engagement, performance, Multinationals, Malaysia.

I. INTRODUCTION

Gamification is a concept where gaming elements are being used in a non-game context. The concept has been around since the 1980's. However, it is still uncertain its effectiveness in the business world [18]. Gamification in the business organization begins in the early 2000's, where a company named Bunchball developed a gamified system to improve customer engagement and gain increasing attention recently causes. This trend picked and implemented in various sectors of operations around the globe [18]. Over the years, gamification becomes one of the most popular emerging approach that managers have utilized to increase employee engagement and performance

^{1,2,3,4}Faculty of Business, International University of Malaya-Wales Kuala Lumpur, Malaysia

¹Abdulbasit@iumw.edu.my; ²Nisaomar@iumw.edu.my; ³Zubair@iumw.edu.my; ⁴Sharmila@iumw.edu.my

⁵School of Computer Science and Engineering, SCE Taylor's University, Subang Jaya, Selangor Malaysia
Noorzaman. jhanjhi@taylors.edu.my

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[55, 19, 35, 31, 52]. Additionally, gamification in human resources discipline has increased its popularity since 2010, where the effect and importance of gamification in employee engagement and performance have been frequently conversed [13]. Gamification has gained a foothold with researchers and practitioner's in building a relationship, developing creativity and being extensively used to gain competitive advantage by successfully attracting, engaging, and motivating employees [60]. Also, gamification is increasingly gaining attention due to innate joy of playing employee's human nature [30, 25]. Many organizations adopted the two facets of gamification (internal process and emerging process) to cultivate employee engagement and employee performance [30]. The increasing adoption of gamification as a merging process causes the analysts to predict an annual growth rate of 46.6% with an estimated increase from USD 1.65 billion to USD 11.1 billion by the end of 2020 [21]. This is attributed to gamification's perceived benefits to support employee engagement, environment behaviour, motivation, ethical behaviour, and work performance [52].

Through gamification strategy leaders can promote autonomy, flexibility and learning opportunities in the workplace which are preferred by multi-generational workforce. In the past, experts have demonstrated that organizations and their leaders urge the need to understand and appreciate the opportunities and positive outcomes associated with gamification [74]. Recent report from Qualtrics 2020 showed employee engagement in Malaysia being 54% which topped the other APAC countries like Singapore, Japan and South Korea. However, India had an impressive 79% score and as such Malaysia could gain their competitive advantage by improving employee engagement using appropriate tactics. [53]. In the Malaysian context, companies are still lacking or underutilizing this gamification and until today, most company's top management is still more confident in using traditional approaches as opposed to encouraging innovation and creativity among employees through gamification.

Gamification has been implemented in over 40% of the Global Fortune 1000 companies with perceived benefits of improved performance, engagement and job satisfaction in the workplace [65]. More specifically, companies such as European Central Bank, Deloitte, SAP, Samsung [15], Cisco, IBM and IKEA have employed gamification to boost employee behavioural outcomes [65]. However, it is challenging to identify and confirm the effect of gamification on employee engagement and performance due to the varying organizational culture and work practices [15]. Therefore, the research inquiry in the field of gamification is high and challenging for scientific inquiries to confirm the effect of gamification on employee engagement and performance [15]. Also, despite the increasing use of gamification, empirical research on the subject of gamification in employee engagement and performance is still lacking [65]. Similarly, existing studies on gamification and its effects on employee performance and engagement have methodological limitation such as a sample size and analysis techniques [46, 15].

In terms of empirical findings in Malaysia and around the world, gamification has produced mixed results [19, 30, 71]. In the past it was found that gamification has significant and positive impact on performance [76, 16], and engagement [64, 65, 50, 51, 52]. However, that there were some studies that found no significant effect of gamification on employee performance [42, 67] or adverse effect of gamification on employee performance and employee engagement [41]. Based on the available literature it is suggested that the existing work have some caveat. The mixed finding of gamification attributed to the research design and application of gaming features [16]. Surprisingly, only handful of researchers have focused on commercial setting centered behavioural and outcomes of gamification. Furthermore, gamification was not tested for its intervening effect (moderation). With the understanding of proven association between employee engagement and

employee job performance, this study examined gamification's role on the relationship between employee engagement and employee performance. Additionally, based on the reviewed sources, this is the first of this kind in the Malaysian organizational context, particularly in the IT multinationals in Malaysia is used in performing this empirical research.

This research contribution is as, this research aims to examine the effect of gamification to enhance employee engagement and employee performance in the Malaysian context. To achieve this, aim the following objectives are formulated to examine the (1) effect of gamification on employee performance and engagement, (2) mediating effect of employee engagement on the relationship between gamification and employee performance, (3) moderating effect of gamification on the relationship between employee engagement and employee performance.

The research will discuss and find out the causal relationship between gamification, employee engagement and employee performance constructs and we will review the key concepts and then proceed with conceptual framework justification and hypothesis development. In this paper, we examine the direct effect of gamification on employee engagement and employee performance constructs, and examines the mediating effect of employee engagement on the relationship between gamification and employee performance. Additionally, the moderating effect of gamification on the relationship between employee engagement and employee performance examined as well. We employ structural equation modelling using Amos software in this research where data collected via questionnaire. In last, we conclude research findings and significance for organizations along with practical implications, limitations and future forward of the research [46].

II. LITERATURE REVIEW

A. Review of key concepts

One of the most cited definition of gamification states that gamification is about utilizing game elements towards the non-game environment [11, 66]. Similarly, gamification was defined as a process of providing opportunities for gameful experience that would support the overall value creation [24]. Later, they defined gamification as being an enhancing service for gameful experience to support user value creation [25]. Also, recently gamification is perceived as changing people's behaviours into a non-game environment by applying game design principles such as mechanics, dynamics, and emotions [56]. The gamification concept practice boosts employee's morale by creating a transparent and exciting environment that increases problem-solving behaviour [22]. Also, gamification is defined as incorporating game design elements to achieve the targets or system's instrumental functions [36]. Therefore, we define gamification as a process that uses game features in a non-game environment of a commercial setting to increase employee engagement and performance.

The term 'employee engagement' refers to "harnessing "employees to their job roles through their physical, cognitive, and emotional involvement [29]. More recently, employee engagement was defined as an employment relationship between employee and employer, where both are mutually benefited [8, 40]. Therefore, we define employee engagement as employee's investment in time and effort on their work task to achieve the organizational goals. Another important key concept, employee performance is defined as an overall achievement of an individual that meets the expectation under a certain period [49]. On the other hand, employee performance considered as the overall outcome of the employee's competencies, abilities, and effort they exert into the task [44]. In last era, many authors established the fact that gamification have direct significant influence on employee engagement and performance around the globe which can be supported by the

following studies [64, 65, 50, 51, 52]. However, there is a lack of studies examining the mediating and moderating effect of employee engagement on the relationship between gamification and performance.

B. Theoretical domains

The underpinning theories are divided into two groups: gamification-oriented theories and behavioural outcome related theories. The adoption of gamification well explained through technology adoption and innovation diffusion theories [50]. As discussed earlier, the success of gamification depends on the acceptance of gamification among the employees. The diffusion of gamification in the workplace depends on the relative advantage, compatibility, complexity, trialability and observability [57]. The degree of diffusion and acceptance is high, the gamification will cause to motivate and drive performance and profitability [2]. It was also argued that gamification offers rewards and social recognition [69]. To incorporate human nature and habits, MDA framework was developed and utilized to ensure gamification at the workplace can be successful. Based on the reviews, the most prominent gamification framework which is consistently cited is Mechanic-Dynamic-Aesthetic (MDA) framework [55, 75, 1, 38]. Gamification mechanics components are rules, goals, and feedback loops with striking features of points, leader boards, levels, challenges, virtual treasures, and badges [33]. The game dynamics play a role in facilitating player interaction with game mechanics such as multiple-choice questions or answer in text into the provided box [1]. The aesthetic component stimulates players in terms of emotions, fun, frustration, fantasy, and friendship especially in multiplayer games [38]. In the last two decades, the MDA framework was modified to fit into various research [56, 59]. For this study, we adopted and modified the MDE framework to develop an instrument measure gamification concept to make it more suitable to the Malaysian context as suggested by previous researchers [56, 38].

Since most of the studies adopted motivation [43, 37] and goal setting theory [72, 16, 15], as two dominant theories in to study the link between gamification with performance and engagement. This study also adopted the motivation and goal-setting theory elements to measure the engagement and performance. As Vroom's Expectancy theory is concerned with behaviour and belief of employee's efforts causes to improve performance depends on the expectation of the reward [5]. Similarly, gamification concerned with employee expectations of efforts will earn points (rewards) at various level of performance implied positive contribution to the organization [4]. Alternatively, goal-setting theory have been utilized in gamification studies as achievement pushes a goal setting function [16]. Goal-setting theory has been tested and it is found that there are four ways which gamification enables to increase in performance and engagement through goal setting [72]. The four ways include attentive to goals, retrying the task, practicing to enhance skills, and finally increasing performance due to motivation [72]. This means gamification could facilitate and enhance engagement and performance.

C. Hypothesis development

According to Biloch and Löfstedt [4], gamification allows monitoring and measuring employees' performance through the feedback function, it will help to visualize tasks that need to be completed which will lead the users to achieve stipulated objectives. It was argued that gamified leaderboard was successful in driving the performance by setting difficult goals that implicit goal achievement through goal commitment [34]. Also, it was found that gamification moderates the relationship between level of stress and performance [71]. Similarly, it was found that narrative gamification has positive and significant effect on employee's sales performance [17]. Also, Silic et al. [65] found that gamification motivates and engage employees to increase performance

expectancy. Another study showed that operator's performance, engagement and motivation were improved through gamification [67]. Therefore, gamified system measures whether the employees have achieved the objectives, and could set appropriate rewards to drive the performance [26]. Alternatively, the Flow theory can create flows mentally to foster motivation to practice the gamified system, leading to higher engagement through competition, challenges, and achievements [61, 65]. Based on the recent five years' studies, we concluded that gamification plays a significant positive role in enhancing employee engagement and performance [12, 27, 48, 47]. However, the moderating role of gamification on the relationship between employee engagement and performance was less emphasized, Hence, the researcher intends to study the following hypothesis:

H1: Gamification has a significant positive influence on employee engagement

H2: Gamification has a significant positive influence on employee performance

H3: Gamification has a positive significant moderating effect on the relationship between employee engagement and performance

Several studies confirmed that employee engagement directly affects employee performance [32, 23, 28, 3, 39]. Furthermore, a higher level of engagement plays a vital role in enhancing productivity, innovation, and performance [28]. The improvement of employee engagement is providing individual employees focused role aligns with himself, which will fulfil personal needs and lead to personal fulfilment and high performance [23]. Those employees who have a higher level of engagement result in better workers and top performers [63]. Findings from the past studies, reveals employee engagement influences employee performance positively [10, 7]. The following hypothesis proposed:

H4: Employee engagement has a positive significant impact on employee performance

In the past, many studies confirmed the direct and significant effect of employee engagement on employee performance [28, 3]. Also, studies have established the mediating effect of employee engagement on performance with behavioural outcomes such as training and development [62], ethical leadership [68], employee rewards [9] and compensation management [23]. However, some of these studies only measured the partial mediating effect of employee engagement on employee performance [62, 23]. Since the empirical studies in the past produced a mixed result, as well as there is less emphasis made to confirm the mediating effect of employee engagement on the relationship between gamification and employee performance, the following hypothesis is formulated:

H5: Employee engagement has a significant mediating effect on the relationship between gamification and employee performance.

III. METHODOLOGY

A. Data collection

To test the hypotheses in this research, we collected data via survey self-administered questionnaire from the employees working in IT MNC's located in Kuala-Lumpur. The chosen target respondents for this research, were selected from two IT MNCs specifically using gamification tools. An online survey questionnaire was administered in this research in which one filtering question included, "Do you use gamification tool currently at your work". The respondents who answer 'yes' only counted in as final participants. Currently in Malaysia from March-2020 to November 2020, the government implemented conditional movement control order (CMCO) and

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advised organizations to apply for work from home policies in this Covid-19 pandemic situation. However, respondents were accessed through the HR departments of two MNC's located at Kuala Lumpur to participate in the survey due to lack of physical access to the organizations in this pandemic period.

B. Sampling and respondent profile

A sample of 273 employees participated and selected using random probability sampling techniques. The fifty-three (53) participants answer to filtering question 'no' was removed from the survey. The most common sample determination rule used in SEM, is the "10-times rule" where minimum 10 respondents were selected per ach item in the construct [20]. In this research total, 20 questions included which indicate that a minimum of 200 sample size is sufficient, as 220 respondents sample size included to proceed to run the final analysis.

Further, the demographic profile of the respondents contains gender, age, and years of experience. Regarding gender, the ratio distribution is nearly equal (Male 50.9: Female 49.1), followed by age group 47.7% are 20-30 age and 52.3% 30-50 age group. Most respondents are 5 years more experience with 62.4% and 10 years more experience 37.6% in this research.

C. Measurements Reliability and Validity

Several studies from 2014-2020 were reviewed in the field, to adapt a suitable validated instrument in this research. The gamification variable (10 items) was adapted and modified from the MDE framework to fit into this research context [56]. The employee engagement contains (5 items), which is adapted from [45] measured at the individual and organizational level. Lastly, the employee performance variable adapted from [49] with (5 items) inclusive with task performance, adaptive performance, and contextual performance.

The five-point Likert scale in measurement is adopted; it is suitable to measure the scale of agreements of the respondents towards the statement given in the questionnaire [70]. Convergent validity and reliability of the measurement model was assessed through factor loading and Cronbach's Alpha as in below Table I. Factor loading through confirmatory factor analysis (CFA) via AMOS 22, shows that all the factors exceed 0.5, confirming the convergent validity as recommended by Hair et al. [20]. The only factor that has loading value less than 0.5 was item G6 with value of (0.143). This was removed from the item construction before proceeds with second order of CFA. The internal consistency is high as all the Cronbach's Alpha values exceeded 0.7 as suggested by Hair et al. [20]. After confirming the validity and reliability of the instrument researcher further evaluate the model fitness and discriminant validity in the research.

TABLE I. QUESTIONNAIRE VALIDITY AND RELIABILITY

Item Statements	Factor Loading	AVE >.5	Cronbach's Alpha
G1. I think the gamification app is fun and interesting	.738		
G2. The Gamification app provides me the opportunity to	.699		

keep track of my records and future progression.			
G3. The Gamification app provides me accurate feedback which is helpful to understand my competence and skills.	.655	.707	.903
G4. The Gamification app provides me the function to compare my performance with colleagues.	.684		
G5. A challenging task in a gamification app motivates me.	.584		
G7. Gamification app usage improves communication within my team.	.677		
G8. The Gamification app helps me to coordinate with my team members.	.673		
G9. The Gamification app helps to improve my performance	.816		
G10. I find it exciting to achieve objectives and goals using a gamification app.	.833		

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EE1. At my work, I feel bursting with energy	.618	.731	.852
EE2. I trust my manager and colleagues	.741		
EE3. The organization has a stimulating environment	.768		
EE4. At my job, I always persevere even when things do not go well	.782		
EE5. My job role makes good use of my skills and abilities	.750		
EP1. I maintain a high standard of work.	.820	.792	.892
EP2. I can handle multiple assignments for achieving organizational goals	.813		
EP3. I always complete the duties specified in my job description	.853		
EP4. I believe that mutual understanding can lead to a viable solution in an organization.	.671		
EP5. I fulfil my responsibilities	.804		

required by my job.			
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IV. RESULTS

A. Confirmatory Factor analysis (CFA)

In this research, model fitness was measured by the following primary indices P-Value, Normed chi-square, Root means square error of approximation (RMSEA), and Comparative fit index (CFI).

The first order CFA model does not show model fitness after the removal of G6, whereby the modification indices were carried out to connect e1 with e2 and second order CFA was carried out. According to Hair et al. [20], the p value must be less than 0.05, CFI value must be more than 0.9, RMSEA values must be less than 0.08, and Normed Chi-square must be less than 3 to ensure the model is fit. Since the P-value is 0.000, CFI is 0.931, Normed Chi-Square is 2.097, and RMSEA is 0.071, the second order CFA model in Fig. 1 is considered as a good fit model to proceed with the discriminant validity.

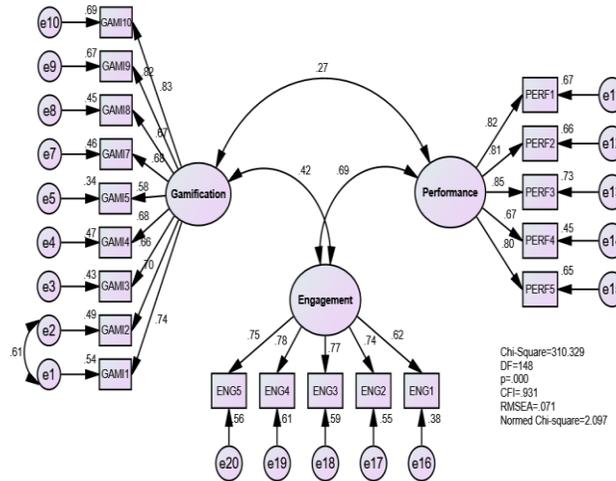


Fig. 1. Confirmatory factor analysis Model Fitness.

B. Discriminant validity

A good discriminant validity should not exceed the 0.85 correlation; similarly, a squared correlation in discriminant validity must be less than <1 [20]. As shown in Table II., all the correlation values are lower than the 0.85 acceptable rule with the highest value .681 to lowest .418, similarly squared correlation values are in an acceptable range lower than 1 as suggested. Discriminate validity can be established by using Average Variance Extracted (AVE), Maximum Shared Variance (MSV), and Average Shared Variance (ASV). In terms of MSV, the values are lower than AVE values of gamification, engagement and performance. The maximum shared squared correlation value is 0.69, which is lower than all the AVE values (0.707 for gamification, 0.731 for engagement, and 0.792 for performance). Therefore, in terms of MSV, the construct has a highly discriminant valid. Similarly, the AVE values of all the variables in the construct are higher than the ASV value (Gamification=0.3175<0.707, Engagement=0.555<0.731, Performance=0.481<0.792,). This suggests that the construct has a high discriminant validity. In

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terms of AVE, all the squared correlation values are less than AVE. This means the items in construct have high discriminant validity.

TABLE II. DISCRIMINANT VALIDITY MEASUREMENT

Constructs	Gamification	Employee Engagement	Employee Performance
Gamification	1.00	.418	.271
Employee Engagement	.174	1.00	.691
Employee Performance	.073	.477	1.00

C. Structural equation modelling

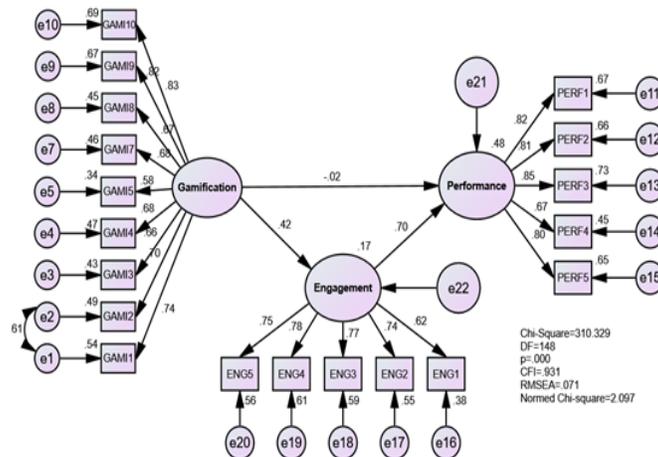


Fig. 2. SEM-Causal effect of gamification on employee performance and engagement

To test the hypothesis, we analyze the effect of gamification on employee performance mediated by employee engagement using structural equation modelling as in Fig. 2. We compare model fitness indices of CFA and SEM as shown in Table III. below to ensure the validity of the model.

TABLE III. MODEL FITNESS COMPARISON

Fit Indices	Level of Acceptance	CFA Model	SEM Model
(p-Value)	< 0.05	.000	0.000
Comparative Fit Index (CFI)	> 0.9	.931	.931

Root Mean Square Error of Approximation (RMSEA)	0.03 - 0.08	.071	.071
Normed Chi-Square	< 3	2.097	2.097

It can be seen from the above Table III., all the indices values in CFA and SEM model with no changes in both model values indicates validation of the SEM model (Hair et al, 2011). We proceed with SEM path analysis to test the five (5) hypotheses suggested in this research.

From the Table IV, the result indicated that gamification has a negative effect (coefficient = -0.022) but do not have any significant ($p=0.713$) of employee performance as p-values are more than 0.05 [20]. However, the result showed that gamification has a positive and significant effect on employee engagement with a Coefficient of 0.418 with a p-value of 0.000. This means when 1 unit of gamification increases, it will cause to increase the employee engagement with 0.418 units. Similarly, employee engagement was found to have a direct effect on employee performance with a Coefficient value of 0.701 with a p-value of 0.000 suggesting that when 1 unit of employee engagement increase, it will cause to increase 0.701 units of employee performance. Similarly, employee engagement has a significant mediating effects on the causal impact of gamification on employee performance. This means gamification has a significant indirect on employee performance with a Coefficient value of 0.293 with a p-value of 0.001. This means when 1 unit of gamification increases, it will cause to increase the employee performance by 0.293 ($0.418 \times 0.701=0.293$) by increasing employee engagement by 0.418 units. Therefore H1, H4 and H5 are accepted while H2 was rejected.

TABLE IV. DIRECT EFFECT AND MEDIATION ANALYSIS

Effect	Coefficient	S.E	C. R.	Sig
Gamification → Engagement	.418	.064	4.951	.000
Engagement → Performance	.701	.108	7.108	.000
Gamification → Performance	-.022	.056	-.328	.743
Gamification → Engagement → Performance	.293	.062	-	.001

In order to analyze whether H3 can be accepted, the whole SEM model was tested using observed variables. The Fig. 3, shows the coefficients of each path after adding the interaction

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variable to test the moderating effect of gamification on the causal effect of employee engagement on employee performance.

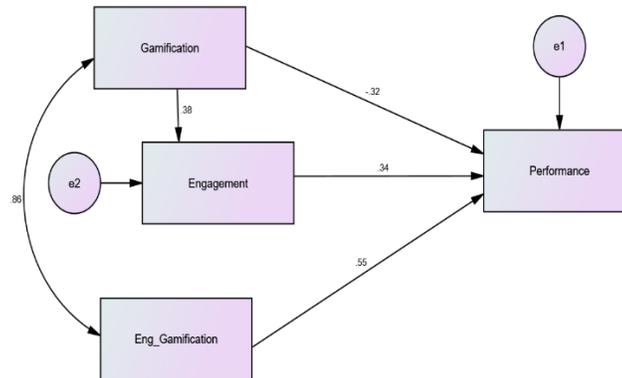


Fig. 3. Moderating effect of gamification

In below Table. V, gamification has a direct negative but significant effect on employee performance with Coefficient value of -0.317 with p-value of 0.006 ($p < 0.05$). Also, employee engagement has a significant and positive effect on employee performance. The interacting variable Eng_Gamification has a positive and direct significant effect on employee performance with a Coefficient value of 0.553 with p-value of 0.000. Since the moderator and the independent variable (employee engagement) and the interacting variable have significant effects on employee performance, gamification has a moderating effect on the relationship between employee engagement and employee performance. Therefore, H3 is accepted.

TABLE V. MODERATING EFFECT

Effect	Coefficients	S.E.	C.R.	P
Gamification→Engagement	.379	.062	6.069	.000
Gamification→Performance	-.317	.090	-2.756	.006
Engagement→Performance	.339	.050	5.395	.000
Eng_Gamification→Performance	.553	.014	4.918	.000

V. DISCUSSION/ANALYSIS

Based on the above results, out of five (5) hypotheses, H1, H3, H4 and H5 are accepted in this research but H2 is rejected. In results of the first hypothesis, gamification is found to have a significant positive effect on employee engagement (H1). This result is supported by Biloch and Löfstedt [4] state gamification as a tool in the organization can enhance employees' engagement in the workplace as it has an interactive element that results in their excitement in completing the task. Some of the basic activities one can experience when playing a game would be to face new challenges, problem-solving, and strategic thinking, to name a few. Every game has an objective and users' engagement relies a lot on their experiences and motivation to reach the final goal. This is how gamification in the workplace can increase employees' engagement. They will be more immersive and interactive with the tasks and possibly with each other. In addition to that, this results it also supports past authors who found positive significance of gamification on employee engagement [56, 60, 54, 31, 67, 27, 18, 65].

As for the result of the second hypothesis, the gamification effect on employee performance was found negative and not significant in this research (H2). However, most of the studies in the past found gamification has significant and positive effects on performance [12, 34, 17, 65]. Additionally, it was highlighted that proper feedback and reward given to the employee at the right time is vital to the outcome of the gamified system. Supported by Buell et al. [6], gamification relation with employee performance was identified to be inconsistent based on different settings and it can have a positive role in some work settings and negative in another. In parallel to the result of this study, gamification was found to have a significant effect on employees' engagement, it does not necessarily assure positive work performance. The design of the content should be aligned to what organization need to achieve, or else, it will be a waste of employee engagement as it only leads to enjoyment without tangible benefits to their work tasks or the company's goal. The key findings that were highlighted are that gamification and employee engagement are beneficial only if they manage to enhance the performance in the organization [6].

In term of the moderation effect of gamification on the relationship between employee engagement and employee performance, it confirmed that gamification moderator. Therefore, H3 is accepted. In the previous studies, gamification was tested as a moderator between level of stress and employee performance [71]. Also, gamification moderates the effect of intrinsic motivation variables [73] and customer engagement and service development [58]. Since gamification arouses motivation, competition and goal achievement through emotional attachments, it may positively facilitate to increase performance indirectly. This study confirms that gamification has an indirect effect on employee performance. Therefore, our finding confirms gamification has significantly moderating effects on the relationship between employee engagement and employee performance.

In terms of employee engagement effects on employee performance, H4 is accepted as we found employee engagement has positive and significant effects on employee performance. This is similar to most of the previous studies as it was found that employee engagement causes to improve employee performance [32, 23, 28, 3, 39]. The contexts of gamification consist of high engaging elements such as challenges, rewards, leader board, and many others have the capability to increase motivation where it then sets the direction towards achieving the expected goal. It is about getting recognize through a reward system or the possibility of bragging rights if one were to be placed on a leader board. Furthermore, a higher level of engagement plays a vital role in enhancing productivity, innovation, and performance [28]. This result is also supported by past findings that found a positive significant effect of employee engagement on employee performance [10, 7, 14].

The H5 is accepted as we found the full mediation effect of employee engagement on the relationship between gamification and employee performance. In the past, most of the studies found partially mediated effects of employee engagement on performance [62, 28, 3], while we found full mediation effect of employee engagement. We confirmed that gamification does not directly affect employee performance; rather, gamification influences performance through engagement and other intervention. Additionally, for gamification to work, the employee must first be engaged with the system and the content must be aligned with work performance. According to Ulliyani [74], a gamification is a useful tool for enhancing employee engagement, and the implementation of it as part of the performance management system will be beneficial to the organization. According [75] gamification can help in learning as well. It is about using a more innovative approach in managing work culture with positive energy and creativity among employees.

VI. CONCLUSION

This research investigates the use of gamification as a tool for performance management systems at the workplace. Using SEM analysis, the research objectives were analyzed and discussed. The first objective of examining the effect of gamification on employee performance and engagement was partially achieved. The conclusion is that increasing gamification will cause to impact employee engagement but not on performance. The second and third objective was fully achieved as we found employee engagement has a full mediation on the relationship between gamification and employee performance. Therefore, we concluded that increasing the work gamification will cause to enhancement to employee engagement. This will result to in an increase employee performance.

This study empirically confirmed that gamification is one of the key determinants of employee engagement through various reward systems and other motivational variables. Also, this study contributes to the motivation theories as well as determining employee performance. This study confirms that gamification has indirect effects on performance through engagement suggesting that in the Malaysian context, gamification, and employee engagement are two key determinants of employee performance. This novel theoretical contribution is ahead of the currently available theoretical linkages of gamification in non-gaming context such as IT multinationals in Malaysia. The practical implication of this study includes that the finding of this study would enable human resource managers to design effective training programs by incorporating gaming features. Also, to improve employee engagement, managers can incorporate gaming features carefully into the performance improvement programs.

VII. LIMITATION AND STUDY FORWARD

The finding of the study cannot be generalized as the data were collected from two IT multinationals. This means the data might be subjected to certain bias as the data was about the employee perception than the original reality of gaming elements in the workplace. This means in future researches should cover a wider scope of IT multinational or even include other industry employees to generalize the findings across Malaysia. Second the gamification, employee engagement and performance construct can be further enhanced by segregating or including further elements of gamification in the workplace. This will ensure the collected data have incorporated most of the critical areas of gamification that exists in the workplace. Also, the finding is only limited to employee engagement and performance rather than other elements such as motivation, stress, commitment, employee turnover intention. Future researches can include more organizational related concepts such as organizational change and resistance to change. Also, this study has the limitation of using only quantities data. In the future, it is important to use narrative case evidence through interviews to support the empirical evidence analyzed in the research to give a coherent picture of the study.

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