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THE IMPACT OF GAMIFICATION ELEMENTS ON EMPLOYEE ENGAGEMENT AND EMPLOYEE PERFORMANCE IN THE SERVICE SECTOR IN BANGALORE.

Elizabeth. P. Mathew[1] & Dr. A. Narasima Venkatesh[2]

[1](FPM) ISBR Business School

[2] (Professor and Head of the Department, HRM and General Management, ISBR Business School)

Abstract:

A startup called Bunchball created a gamified system to increase consumer interaction in the early 2000s, gaining a great deal of attention in the process. This trend was adopted and applied in operational areas around the world. Over the years, gamification has been one of the most prominent developing methods that managers have used to boost employee engagement and performance. How to engage and inspire workers to grow and increase their performance in order to share their expertise has become one of the primary strategic objectives of the firm. This research, underpinned by the Flow theory and Kahn's theory of engagement, examined the effect of gamification on knowledge-sharing habits among users. We conducted an online poll with 150 participants from a major firm that introduced social engagement and performance platforms to facilitate internal knowledge exchange. Our research identified significant drivers of employment motivation (rewards-enjoyment, open-mindedness, and training), which resulted in a greater degree of job engagement and performance expectations. This research yields significant insights for practise and theory.

Keywords: Gamification, Engagement, Performance, Training effectiveness, Open mindness

Introduction:

Gamification tries to affect human behaviour by generating motivation via game design (Blohm & Leimeister, 2013). Game mechanics and dynamics are design components (Zichermann & Cunningham 2011; Blohm & Leimeister, 2013). Game mechanics are utilised to gamify an app, whereas game dynamics determine user wants and incentives (Zichermann & Cunningham 2011). MDA (Mechanics, Dynamics, Aesthetics) is a game design framework. This three-level paradigm helps game designers envision the game's dynamics and intended results (Hunicke, LeBlanc &Zubek, 2004).

Engaged workers are the company's top competitive advantage, affecting productivity, absenteeism, profitability, quality, customer satisfaction, and sales success. Gallup's examination of U.S. workplace engagement since 2000 shows that fewer than one-third of Americans work in businesses where most workers feel apathetic about their or the organization's performance. To engage and inspire workers to share their expertise is a major organisational strategic aim. Clear vision, management support, and manager involvement are essential employee engagement driving elements. Gamification, the application of game features in non-game environments, has attracted attention from researchers and the media. The Flow hypothesis proposes that a person undertaking an activity (e.g., playing a game) would experience total and energetic attention with great happiness and fulfilment. Gamification seeks Flow, a state of concentrated motivation. This refers to an employee's devotion, attention, focus, contentment, etc. As flow is a significant reason why people play games, gamification is anticipated to boost employee motivation and engagement.

Scholars have taken some beginning efforts in understanding gamification's impact on the workplace, but little theory or empirical observation accounts for gamification's involvement in knowledge-sharing practises connected to job engagement and motivation. Researchers haven't explored how game design components affect employee work motivation, job engagement, and performance, which effect knowledge sharing. This knowledge gap is acceptable considering that gamification is a new idea in businesses and must be examined over time. Most earlier research failed because of limited sample numbers. There's no evidence that gamification improves performance. It's uncertain whether gamification can affect employee engagement when they need to share information inside the firm.

Kahn says that personal engagement is a situation in which individuals "bring in" their own selves during professional role performances by feeling emotionally connected to their job. Work involvement is a motivator,

This research focuses on the Theory of Flow and Kahn's theory of engagement to develop a theory that places gamification antecedents as key drivers of employee engagement and explains relationships between work training, performance expectancy, and work engagement in the context of gamification implemented in the organisation.

Theory: Gamification and Flow

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Davis and Csikszentmihalyi's flow theory describes intrinsically driven persons engaged in a chosen task. Flow, according to Csikszentmihalyi, is: "totally enjoying an action. Ego disappears. Flying by. Like jazz, every action, movement, and idea follows the last. Your entire being and talents are engaged "less Dancing, athletics, surgery, and music all include Flow. In mountain climbing, the individual does not climb to achieve the peak; instead, he/she climbs to attempt the summit, implying the person is undertaking the action for its own purpose.

Games give the essential input and clear objectives for players to experience Flow. Games may add or change levels, allowing players tasks to balance talents and difficulties. According to, the key to Flow is maintaining the correct balance between training and novelty in tasks. Gamification, anchored on Flow theory, has gained attention from researchers and the media.

Gamification has a wider applicability nowadays. The Flow principle says Flow may be obtained in any region, hence it can be applied to any product or service. Gamification is the use of game design features (e.g., challenge, levels, points, and leaderboards) to organisational environment to increase employee job satisfaction and motivation. Gamified activities aimed at achieving Flow should change users' behaviour. Intrinsic or extrinsic motivation may achieve this goal. Intrinsic motivation originates from the job, whereas extrinsic motivation is external (e.g., financial rewards). Extrinsic reasons may have detrimental long-term effects on Flow, but they can be used to ignite Flow.

Gamification provides incentives like badges that have an intrinsic (gathering badges) and extrinsic dimension (e.g., gaining social recognition). Bui, Veit, and Webster [8] categorised gamification into six categories: mechanics, technologies, individual traits, dynamics, results, and aesthetics (e.g., Feedback, Representation, Game advancement, Rewards, Sensory, etc.). The analysis revealed two findings. 1) Most studied publications didn't describe their gamified systems' technology features; 2) Few research analysed individual characteristics (e.g., gender, age, experience). They found that there is a "huge gap in organizationally relevant research...more study is required on workers engaging with group systems resulting in collaborative dynamics and longer-term behavioural effects" [8]. This confirms our claim that gamification has to be implemented over time to change user behaviour.

Engagement Theory

Engagement is "the simultaneous employment and expression of a person's 'preferred self' in task behaviours that foster work-and-others linkages, personal presence (physical, cognitive, and emotional), and active, complete performances". An engaged employee is psychologically present, totally there, attentive, feeling, linked, integrated, and role-focused. Kahn stated that workers in such conditions are open to themselves and others, since they bring their whole selves to work. Kahn's engagement notion is about motivation, since it entails bringing personal resources to the performance and how strongly and consistently they are used. Engagement includes effort, participation, flow, awareness, and inner motivation, according to Kahn. Overall, gamification corresponds to high levels of autonomous motivation achieved through vigour, dedication, and absorption. An individual will reach a state of full absorption leading to the state of Flow, characterised by focused attention, clear mind, mind and body unison, effortless concentration, complete control, loss of self-consciousness, time distortion, and intrinsic enjoyment. While academics have focused on job involvement, it's unclear how gamification affects engagement and motivation.

Review of literature:

Gamification:

Nick Pelling founded Conundra Ltd. in 2003, but it failed owing to an early idea and lack of client interest. In 2006, the firm closed (Pelling 2011). Bunchball started the gamification industry in 2007 with the launch of Nitro, a gamification platform companies could use on their websites, apps, and blogs to encourage and motivate customers. It helped its clients by providing solutions to boost employee development, engagement, motivation, and loyalty. In 2010, academics began writing essays about gamification (Hamari, Koivisto&Sarsa, 2014)

Gamification Practises in Organization

Gamification is part of Human-Computer Interaction (HCI) from the game design viewpoint and its methodologies, able to affect people' engagement, motivation, and productivity and, subsequently, modify their behaviours (eker&zdamli, 2017; Gupta &Gomathi, 2017).

Using game elements, gamification emphasises human impulses including competitiveness, accomplishment, self-expression, and compassion (Dichev&Dicheva, 2017; Gupta &Gomathi, 2017; Piteira, 2017). In gamification settings, participants are immersed in non-game situations, yet game design traits drive another objective and make the action more exciting (Deterding et al., 2011;

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Dichev&Dicheva, 2017; Wangi et al., 2018). This indicates that game design components are employed partly, and all users are required to use the game rules and principles to perform appropriately and accomplish a non-game-related objective (eker&zdamli, 2017; Deterding et al., 2011; Dichev&Dicheva, 2017). In certain cases, game aspects are employed for reasons other than the conventional and anticipated ones, such as entertainment games, and some approaches should be used to reach these ultimate aims (eker&zdamli, 2017; Dichev&Dicheva, 2017; Faiella&Ricciardi, 2015).

Training Effectiveness and Gamification

According to Armstrong and Landers (2018), gamification frequently improves training outcomes while current knowledge transfer methods fall short of expectations. The authors examined the effect of various factors on learning, and found that they have varying behavioural and psychological effects on individuals (Armstrong & Landers, 2018). The impact of these elements is generally positive, but little research has been conducted on their effect on training effectiveness individually. Consequently, care must be taken, and gamification will be most effective when combined with instructional design principles. eker&Ozdamli, 2017; Armstrong & Landers, 2018) assert that merely incorporating game elements into the training environment is unlikely to result in positive learning outcomes.

The majority of studies favour gamified techniques over traditional ones (eker&Ozdamli, 2017; Dichev&Dicheva, 2017). Given the lack of strong and convincing evidence regarding the impact of game features on training effectiveness and employee engagement, it was deemed pertinent to investigate their relationship. Furthermore, as noted by a number of authors (Dichev&Dicheva, 2017; Faiella&Ricciardi, 2015), there appears to be a significant difference in the training effectiveness when gamified techniques are applied versus when they are not.
This concept will be evaluated based on the hypotheses listed below.

H4a: Training Effectiveness mediates the relationship between gamification elements (such as points, badges and avatars) and employee engagement

H4b: Training Effectiveness mediates the relationship between gamification elements (such as points, badges, and avatars) and employee performance

Some game features have been described and researched in the expanding gamification literature (Landers et al. 2017; Sailer et al. 2017; Sailer and Homner 2020; Bedwell et al. 2012; Dicheva et al. 2015; Wilson et al. 2009). We'll discuss gamification elements in this section.
Point-and-level systems are the most prevalent gamification strategy. Points are a quantitative kind of user feedback in gamified and non-gamified situations. Points have several names and are sometimes renamed (for example, "experience points"). Points are sometimes tied to levels, which are cut-offs for additional privileges and/or duties. When a user earns enough points, they gain a level. Levels may convey status beyond the gamified system. Frequent flyer miles are a sort of point, whereas silver, gold, or platinum status in a programme conveys a feeling of social standing.
In gamified systems, leaderboards appeal to a competitive or relational impulse to compare one's progress and successes to others. Leaderboards employ a rating system to show who's doing well in a gamified system. Advancement, levels, points, or performance determine rankings. Participants may utilise these rating systems to see how they're doing compared to their colleagues. Studies show leaderboards boost employee work performance (Landers et al. 2015). Amazon reportedly utilises gamification in its warehouses to boost staff efficiency (Statt 2021). These technologies enable employees to input their shift outcomes into a scoreboard to be rated against other Amazon warehouse workers. Amazon must like these systems, since they're adding them to at least 20 more fulfilment sites (Statt 2021).

These systems also have badge systems for gamification. They're often rewarded for extra-role acts, performance, or behaviour that goes beyond job requirements (Sailer et al. 2017; Hamari 2017). In a college course, a student might acquire a badge for reading a "recommended reading" that reinforced the course's learning goals. Consumer items use badges to enhance engagement. Audible.com's app provides medals for actions like revisiting a book.
Collaboration/competition refers to the competitive or cooperative side of games and gamified systems. Collaboration and competition may coexist. Sporting teams must cooperate to compete (i.e., football, basketball, etc.). In virtual games, teammates and/or opponents are NPCs controlled by game mechanics or AI (AI).
Avatars are graphic representations of gamers. Avatars might be as basic as a Monopoly top hat token or as intricate as a 3D player depiction (Sailer et al. 2017). In certain online contexts, users' avatars may have enormous importance. In Roblox, a popular online game for youngsters, players customise their avatars and buy clothes and improvements. To an outsider, this may seem silly, but for these people, it's like dressing up or grooming before going out. Some individuals believe their avatar's look and mannerisms significant because they reflect their actual or ideal self.
Gamification includes tales and themes. Gamified stories and motifs may add gravity or humour to mundane tasks. Well-written stories may promote involvement and "alter the meaning of real-world

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activities" (Sailer et al. 2017, p. 373). Complexity and depth vary tremendously. A topic may be a horse striving to win a race or a complete universe with interesting origins and history in which players must impact the globe. In both cases, ordinary chores, projects, and jobs are given interesting settings to promote interest and engagement.

Table 1 shows 27 gamification elements found in at least two taxonomies. Literature mentions rewards, goals/objectives, competition, feedback/visible stats, levels/user advancement, and points/scoring system. Nine of the twelve taxonomies included cooperation/collaboration. Rare aspects include Choice, Variation/Novelty, NPCs/Interacting Avatar, Rarity, Renewal/Renovation, and Sensation. Sensation is the utilisation of smell, touch, taste, and classical auditory and visual inputs.

Gamification Element	**Toda et al (2019)**	**Schmidt Kraepelin et al (2018)**	**Schobel & Janson (2018)**	**Hoffmann et al (2017)**	**Hervas et al (2017)**	**Bui et al (2015)**	**Weiser at al (2015)**	**Raftopoulos et al (2015)**	**Herzig et al (2015)**	**Blohm & Leimeister (2013)**	**Hsu et al (2013)**	**Robinson & Buelotti (2013)**
Rewards	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Goals/Objectives	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Competition	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Feedback/Visible Stats	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Levels/User Advancement	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Points/Scoring System	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Cooperation/Collaboration	✓	✓		✓		✓	✓		✓	✓	✓	✓
Avatar/Role-playing		✓	✓	✓	✓	✓			✓	✓	✓	
Narrative/Story	✓	✓	✓	✓	✓	✓			✓			✓
Time Pressure	✓		✓	✓	✓	✓				✓	✓	✓
Economy/Trade	✓			✓			✓	✓	✓	✓		✓
Social Pressure	✓			✓		✓		✓		✓	✓	✓
Socialising/Social Sharing				✓	✓	✓	✓	✓				✓
Reminders/Scheduling			✓		✓		✓		✓			✓
User Guidance/Instruction		✓					✓		✓		✓	✓
Chance/Randomness	✓				✓	✓						✓
Uncertainty/Surprise					✓	✓		✓				✓
Virtual World/Environment				✓				✓		✓		✓
Choice	✓						✓					✓
Puzzles	✓					✓		✓				
Variation/Novelty	✓				✓							✓
Exploration/Discovery					✓	✓						
NPCs/Interacting Avatar			✓	✓								
Aversion		✓			✓							
Rarity	✓											✓
Renewal/Renovation	✓											✓
Sensation	✓					✓						

Table 1:*Full Table of Gamification Elements from the Literature Review*

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Source: David Upshall: Developing a Taxonomy of Gamification Elements That Facilitate User Motivation, July 2020

Relationship between gamification and training motivation

Training uses both phenomenology and behavioural motivation (Zaniboni et al., 2011). First, the writers explain their wants, interests, engagement in the learning process, and effort to learn and goal-setting. In the last 30 years, numerous training motivation measuring methodologies have emerged (Zaniboni et al., 2011).

Training motivation moderates the link between gamification components and training efficacy.

How motivation is judged in learning situations and how this affects training efficiency is not universal (Bauer et al., 2016; Colquitt, LePine, &Noe, 2000). Bauer et al. (2016) studied how motivation affects learning outcomes (reactions, learning, behaviour, and results) (2013). According to a study, training outcomes are more comparable to motivation types than training outcomes. A multidimensional model should be more revealing due to the many approaches to quantify training motivation (Bauer et al., 2016; Zaniboni et al., 2011).

HR training needs motivated participants to succeed (Mielniczuk& Laguna, 2017; Zaniboni et al., 2011). Studying how motivation affects training efficacy is crucial due to training and development research (Bauer et al., 2016; Colquitt et al., 2000).

H6a: Training motivation moderates the relationship between gamification elements (such as points, badges, and avatars) and employee engagement mediated by training effectiveness

According to Kapp (2012), educational games use gamification to reward good behaviour, boosting motivation and learning (Costa, 2017; Garris et. al, 2002). It's uncertain whether games' incentive improves learning (Garris et al., 2002).

Dichev&Dicheva (2017) relate gamification to learning outcomes and how game design might increase learning. Even No evidence shows gamification inspires individuals. 2017 (Dichev/Dicheva). According to various quoted authors (Dichev&Dicheva, 2017; Mielniczuk& Laguna, 2017), gamification's motivational effects and engagement in the learning process are still a study problem. This research examines training motivation and efficacy.

Training motivation moderates the link between gamification (points, badges, avatars) and employee engagement mediated by training efficacy.

H6b: Training motivation moderates the association between gamification (points, badges, avatars) and employee performance mediated by training effectiveness.

H7: Open-mindedness moderates the relationship between gamification elements (such as points, badges, and avatars) and the training effectiveness

Big Five openness OCEAN framework specifies five personality characteristics (Soto & John, 2017; Srivastava & John, 1999) Openness, conscientiousness, extraversion, agreeability, neuroticism. Open people are interested, inventive, and dynamic. Conscientiousness combines efficiency, order, and absence of laziness and carelessness. Passionate, gregarious, energetic, and adventurous describe extraverts. Agreeableness involves trustworthiness, benevolence, compliance, humility, and thoughtfulness. Neuroticism causes anxiety, unhappiness, impulsivity, and vulnerability.

Soto & John (2017) created BFI-2 to define various aspect attributes based on the initial five dimensions. The writers called neuroticism negative emotionality to avoid associating it with anxiety and loss. The domain openness was renamed open-mindedness to emphasise psychological rather than social traits (Soto & John, 2017). Extraversion, agreeableness, conscientiousness, negative emotionality, and open-mindedness are the five domain scales; sociability, assertiveness, energy level, compassion, respectfulness, trust, organisation, productiveness, responsibility, anxiety, depression, emotional volatility, intellectual curiosity, aesthetic sensitivity, and creative imagination are the fifteen facet scales (Soto & John, 2017).

Open-mindedness affects the interaction between inventive settings, such as gamified ones, and training motivation (Martocchio& Webster, 1992; Soto & John, 2017; Thompson, 2013).

This research will compare open-mindedness to other traits. Authors say this dimension includes intellectual curiosity, creative imagination, and aesthetic sensitivity (Soto & John, 2017).

Open-mindedness moderates the link between gamification components and training efficacy.

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Open-mindedness moderates the association between gamification (points, badges, avatars) and employee engagement mediated by training efficacy.
Open-mindedness moderates the association between gamification (points, badges, avatars) and employee performance mediated by training efficacy.

Training gamification

Armstrong & Landers (2018) say gamification enhances training results whereas conventional methods fail to transmit information. The authors explored the influence of various learning factors on behaviour and psychology (Armstrong & Landers, 2018). Overall, these components have a beneficial influence on training efficacy, although there is limited data on this. Combined with instructional design concepts, gamification is most successful. Adding game aspects to training may not improve learning (Armstrong & Landers, 2018; eker&zdamli, 2017).

(zdamli (2017) and Dichev&Dicheva (2017) favour gamified strategies over traditional ones. Since there is little information on the influence of game elements on training efficacy and employee engagement, their link was studied. According to several writers (Dichev&Dicheva, 2017; Faiella&Ricciardi, 2015), gamified strategies increase training efficacy.

Relationship between Employee engagement and gamification

Employee engagement is the reverse of burnout; someone engaged in a task is full of energy, devoted to it, and willing to meet any expectations (Bakker & Albrecht, 2018; Schaufeli& Bakker, 2004; Schaufeli et al., 2006). Energy, participation, and effectiveness describe job engagement, whereas tiredness, cynicism, and decreasing efficacy constitute burnout (Bakker & Albrecht, 2018; Schaufeli& Bakker, 2004).

The Maslach Burnout Inventory defines job engagement as low tiredness and cynicism and strong professional effectiveness. Due to their absence of antagonism and for research purposes, both names should be regarded separate ideas (Schaufeli& Bakker, 2004). Work engagement is a result of devotion, vigour, and absorption that lasts as an affective-cognitive state (Bakker & Albrecht, 2018; Schaufeli& Bakker, 2004; Schaufeli et al., 2006).

Schaufeli et al., 2004; Schaufeli et al., 2006 classify engagement into three constructs. The first vigour refers to great energy and mental resilience at work, as well as a determination to work hard and continue through adversities. Second, devotion is about importance, excitement, inspiration, pride, and challenge at work. Third, absorption occurs when someone is entirely absorbed in work and cannot be disconnected from it.
Individuals' organisational commitment should boost training's usefulness (Colquitt et al., 2000). According to the writers, research shows that commitment motivates people to learn, sense self-worth, and be involved in the organisation (Colquitt et al., 2000).

H1: Gamification elements (such as points, badges and avatars) have a positive effect on employee engagement

Relationship between Performance and Gamification

Biloch and Löfstedt say gamification enables monitoring and assessing employee performance via feedback, which helps visualise tasks to be accomplished and leads users to attain goals. Landers et al. said gamified leaderboards drove performance by establishing challenging objectives that implicitly required goal accomplishment. Tennakoon et al. 2020 also discovered that gamification moderates the stress-performance link.
Grobelny observed that narrative gamification boosts sales performance. Gamification encourages and engages people to boost performance, according to Silic et al. Gamification boosted operators' performance, engagement, and motivation [Small, 2017]. According to recent research, gamification improves employee performance [Eikelboon, 2016; Hussian, 2018; Passalacqua, 2020; Pereira2018]. This research measures gamification's impact on employee performance.

H2: Gamification elements (such as points, badges and avatars) have a positive effect on employee performance

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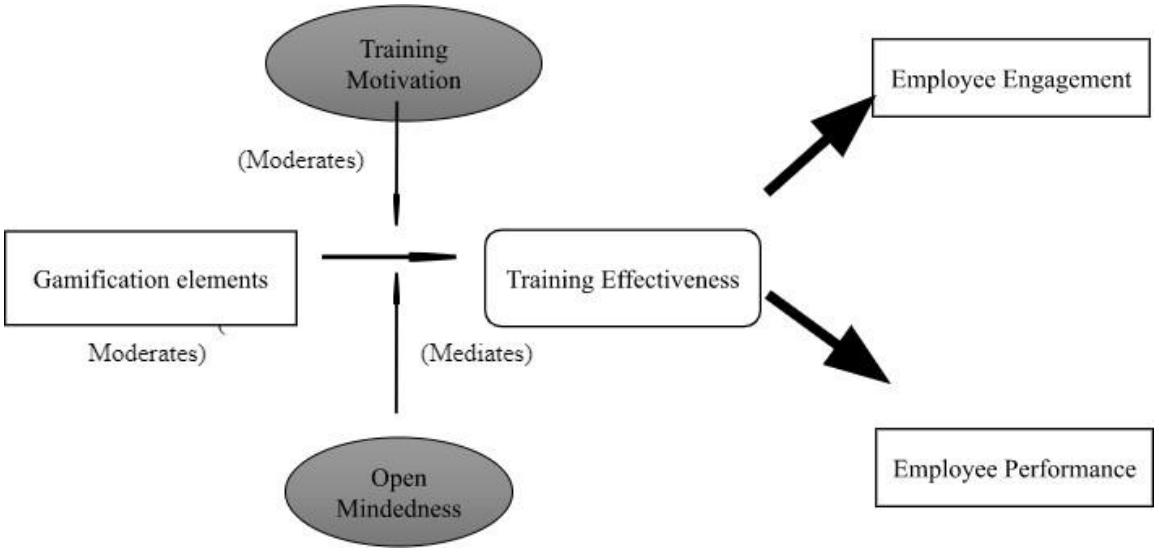
Research Methodology

Conceptual Research Model :

The Impact of Gamification Elements on Employee Engagement and Employee Performance in the Service Sector in Bangalore



Analysis of Results and Findings:

Demographic Analysis:

Category	Sub division	Frequency	Percentage
Gender	Male	90	60
	Female	60	40
Age	20-25 Years	28	19
	26-30 Years	42	28
	31-35 Years	58	39
	Above 35 years	22	15
Academic Qualification	Under Graduate	54	36
	Post Graduate	72	48
	Ph. D	24	16
Working Sector	Banking	23	15
	IT - Human Resource, Finance, Marketing	54	36
	Educational & Research	58	39
	Other Service Based Sector	15	10
Experience	Less than 1 year	26	17
	1-3 year	46	31
	3-5 Years	55	37
	More than 5 Years	23	15
Gamified Knowledge & Experience Level	High	29	19
	Medium	76	51
	Low	45	30

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Descriptive Statistics:

Descriptive Statistics								
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis	JarqueBera
Training Motivation	150	1.0000	5.0000	2.131111	.6644345	2.137	7.077	1428.876
Open Mindedness	150	1.0000	5.0000	2.475000	.5941981	.449	2.266	6.468332
Training Effectiveness	150	1.0000	4.5000	2.161630	.5689243	1.631	4.314	309.3175
Employee Performance	150	1.0000	4.0435	1.933043	.5452496	1.687	4.802	410.4587
Employee Engagement	150	1.1000	3.0000	1.703333	.2850684	1.026	2.715	48.53782
Gamification Elements	151	1	2	1.35	.479	.631	-1.624	6.599619
Valid N (listwise)	150							

The descriptive statistics is shown in the above table where in the No. of respondents is 150 out of which 70 are male respondents and remaining are female respondents. The mean value is represented for the variables considered for the study, with Std deviation and SkenessAcceptable values of skewness fall between − 3 and + 3, and kurtosis is appropriate from a range of − 10 to + 10 when utilizing SEM (Brown, 2006).and kurtosis is calculated The values for asymmetry and kurtosis between -2 and +2 are considered acceptable in order to prove normal univariate distribution (George &Mallery, 2010). Hair et al. (2010) and Bryne (2010) argued that data is considered to be normal if skewness is between - 2 to +2 and kurtosis is between - 7 to +7.withJarqueBera Value, The Jarque-Bera testis a goodness-of-fit test that determines whether or not sample data have skewness and kurtosis that matches a normal distribution. The test statistic of the Jarque-Bera test is always a positive number and if it's far from zero, it indicates that the sample data do not have a normal distribution.

Correlations							
		Gamification Elements	Training Motivation	Open Mindedness	Training Effectiveness	Employee Performance	Employee Engagement
Gamification Elements	Pearson Correlation	1	-0.09	-0.024	-.166*	-0.036	-.176*
	Sig. (2-tailed)		0.272	0.773	0.042	0.661	0.032
	N	151	150	150	150	150	150
Training Motivation	Pearson Correlation	-0.09	1	.589**	.458**	.513**	.359**
	Sig. (2-tailed)	0.272		0	0	0	0
	N	150	150	150	150	150	150
Open Mindedness	Pearson Correlation	-0.024	.589**	1	.513**	.174*	0.16
	Sig. (2-tailed)	0.773	0		0	0.033	0.051
	N	150	150	150	150	150	150
Training Effectiveness	Pearson Correlation	-.166*	.458**	.513**	1	.504**	.333**
	Sig. (2-tailed)	0.042	0	0		0	0
	N	150	150	150	150	150	150
Employee Performane	Pearson Correlation	-0.036	.513**	.174*	.504**	1	.522**
	Sig. (2-tailed)	0.661	0	0.033	0		0

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	N	150	150	150	150	150	150
Employee Engagement	Pearson Correlation	-.176*	.359**	0.16	.333**	.522**	1
	Sig. (2-tailed)	0.032	0	0.051	0	0	
	N	150	150	150	150	150	150
*. Correlation is significant at the 0.05 level (2-tailed).							
**. Correlation is significant at the 0.01 level (2-tailed).							

From the Table above, the correlation coefficient should always be in the range of -1 to 1. we have to determine the significance level. In most of the cases, it is assumed as .05 or .01. At 5% level of significance, it means that we are conducting a test, where the odds are the case that the correlation is a chance occurrence is no more than 5 out of 100. After determining the significance level, we calculate the correlation coefficient value. The correlation coefficient value is determined by '*' sign.

Factor Loadings

KMO and Bartlett's Test[a]

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.650
Bartlett's Test of Sphericity	Approx. Chi-Square	367.540
	df	15
	Sig.	.000

a. Only cases for which Gamification Elements = 1 are used in the analysis phase.

	Initial	Extraction	P value (Anova)
Training Motivation	1	0.849	0.002
Open Mindedness	1	0.763	0.03
Training Effectiveness	1	0.579	0.04
Employee Performance	1	0.816	0.01
Employee Engagement	1	0.759	0.03
Extraction Method: Principal Component Analysis.			
a. Only cases for which Gamification Elements = 1 are used in the analysis phase.			

The KMO Value represented is greater than 0.5 proving the consistency of the database considered for the analysis, P value = 0.00 with factor loading Training motivation 84% impacting the gamification elements, open mindedness towards Gamini faction elements is impacting 78%, Training effectiveness is impacting 57%, Employee performance has improved or impacted 87% with gamification elements, Engagement has increased 78% with gamification. The Annova values are also proving the significance value for Motivation with regards to gamification is less than 0.05, proving the significance level, all the other variables are also proving the significance goodness of fitness.

Validity Construct:

Construct	Training Motivation	Open Mindedness	Training Effectiveness	Employee Performance	Employee Engagement
Training Motivation	0	0.84	0.53	0.48	0.61
Open Mindedness	0.48	0	0.64	0.58	0.62
Training Effectiveness	0.54	0.62	0	0.42	0.67
Employee Performance	0.46	0.68	0.58	0	0.59

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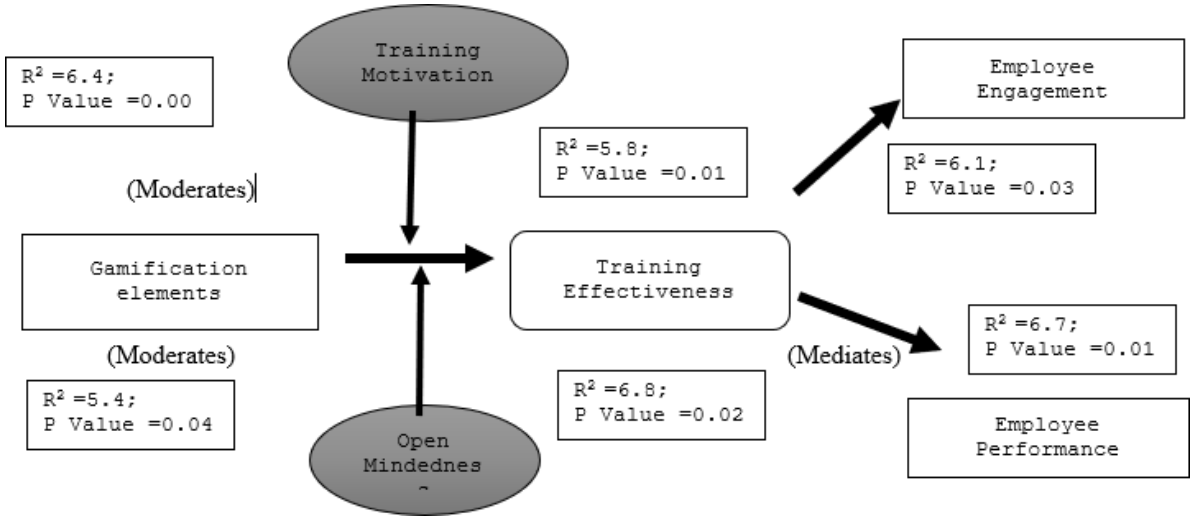
Employee Engagement	0.49	0.51	0.56	0.53	0

Validity Construct proves the reliability consistency of the data considered for the study and the below diagram shows Estimated regression values for the variables considered for the study,



Regression Values: SEM Estimated Values

H1: Gamification elements (such as points, badges and avatars) have a positive effect on employee engagement with R^2 =6.4; P value 0.00 and H2: Gamification elements (such as points, badges and avatars) have a positive effect on employee performance R^2 =5.4; P value 0.00 and H3: There is a difference between training effectiveness for gamified trainings and training effectiveness for non-gamified training with mean difference of 2.1 and H4a: Training Effectiveness mediates the relationship between gamification elements (such as points, badges and avatars) and employee engagement R^2 =5.4; P value 0.04 and H4b: Training Effectiveness mediates the relationship between gamification elements (such as points, badges, and avatars) and employee performance and H5: Training motivation moderates the relationship between gamification elements (such as points, badges, and avatars) and training effectiveness R^2 =5.4; P value 0.04and H6a: Training motivation moderates the relationship between gamification elements (such as points, badges, and avatars) and employee engagement mediated by training effectiveness R^2 =6.8 ; P value 0.04and H6b: H6b : Training motivation moderates the relationship between gamification elements (such as points, badges, and avatars) and employee performance mediated by training effectiveness R^2 =6.8 ; P value 0.04 and H7: Open-mindedness moderates the relationship between gamification elements (such as points, badges, and avatars) and the training effectiveness R^2 =6.7; P value 0.04H8a: Open-mindedness moderates the relationship between gamification elements (such as points, badges, and avatars) and employee engagement mediated by training effectiveness R^2 =6.8 ; P value 0.04 and H8a: Open-mindedness moderates the relationship between gamification elements (such as points, badges, and avatars) and employee performance mediated by training effectiveness R^2 =6.1 ; P value 0.01

Implications to the conceptual research model

In this paper, significant theoretical contributions are made. First, we identified major antecedents of work motivation, hypothesising that reciprocal benefit, recognition, and pleasure contribute to increased job motivation. This supports our original idea that gamification would increase employee motivation. In the context of knowledge-sharing activities, it seems that workers are more motivated to share their information when they may gain from doing so. In

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addition to being rewarded for their knowledge-sharing activities, workers' motivation is affected by having fun and enjoying themselves. Indeed, literature emphasises the significance of motivation, whereby the provision of incentives affects knowledge sharing. Second, we discovered a robust correlation between motivation, performance expectations, and work engagement. This is a significant study since it implies that the incorporation of game design features impacts employee engagement and performance expectations. According to a research conducted by Danish and Usman, incentives, rewards, and recognition have a significant influence on employee engagement. In our environment, knowledge-sharing practises seem to be favourably affected by the motivational component, in which workers tend to be more involved with their work due to various incentive drives. Intriguingly, social Q&A sites are already leveraging gamification to encourage their users to provide more information. Third, we discovered that performance expectation impacts work engagement in the context of information sharing in a direct and beneficial manner. This shows that a motivated employee who is acknowledged likes the activity, has fun, obtains a benefit from utilising the system, and performs better as a consequence of increased knowledgesharing practises would perform better as a result of increased knowledgesharing practises. Ultimately, this will impact employee engagement. In addition, when workers are rewarded to cooperate with others, they are more likely to share their expertise. Overall, our research provides novel insights into employee job engagement and the influence of gamification aspects based on Theory of Flow and Kahn's theory of engagement.

Conclusion

Researchers also provide some useful inputs. Our research indicates that introducing a gamification system might improve an employee's organisational performance practises. In other words, workers see an advantage from using a gamification system when they are acknowledged by their peers or supervisors. The motivational factor is also a potential area of interest within the framework of the organisation. The incentive of workers to remain engaged and achieve greater performance is a problem for firms. Approaching this subject using game design components seems to have a favourable effect on employee behaviour. Therefore, corporations might use the gamification system to better tailor it to their knowledge-sharing methods. In the end, this would not only lead to an increase in performance expectations but also in work engagement.

Limitations of the study

Our research is constrained by the fact that we conducted it solely in Bangalore-based companies. It would be interesting to include additional companies in various places in order to see what other variables (such as organisational culture) may influence the overall findings. In addition, while we did have a control group of workers who had never used the gamification system, some of these employees may have heard about it, which might have had an impact on the outcomes of the control group. Another disadvantage is that we did not measure any actual knowledge-sharing practises. Lastly, despite the longitudinal nature of our research, a six-month period may not be optimal for analysing the impacts of gamification. We recommend more study that investigates how job happiness is affected by various motivational factors and, ultimately, the connection between job satisfaction and work engagement.

Scope for Future Research

The process of work and employee management is different in different sectors, this research is purely focused on IT, Software employees, hence the research results are projected only with regards to IT Sector, understanding the impact of diverse game design aspects: how and to what degree these elements affect (in a good or negative manner) long-term work engagement, motivation, and job satisfaction is an additional fascinating avenue in other sectors like manufacturing, educational, etc.for future research.

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