

# Gratification through gamification in COVID 19? A Study of Gamification in an Online Virtual Community and Intrinsic Need Satisfaction During the Global Crisis

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## ABSTRACT

- Purpose – To study the enthusiasm & awareness of company's and employees towards gamification and utilizing them in the pandemic times of COVID 19.
- Proposed Design/Methodology/Approach – The proposed methodology here is exploratory research with random sampling and the data was collected through a questionnaire survey from the sample respondents across the companies and employee community of 208 respondents.
- Findings – Globally firms are working virtually and are encountering challenges to recognize the work of their colleagues. This study implies how employees are currently motivated in the COVID 19 times. The companies and employees are not able to fully capitalize on the benefits of online community platforms towards their colleague recognition.
- Practical/Theoretical implications – The study shows that gamification benefits should be measured to see the intrinsic motivations of the employees which will help to know the mindset and motivation. Companies are adopting such a gamification platform and willing to go the extra to have self-driven motivated employees.
- Originality/value – The study demonstrates that both companies and their employees are interested to engage through the gamification platform, especially at the time of COVID 19, since it is not feasible to meet socially.

## Keywords

Gamification, COVID 19, Intrinsic motivation, Online community, Engagement, Persuasive technology, Gen X Y Z, Leaderboard

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## Introduction

In the gamification, major reference is aligning towards the activity's transformation, structure, services to manage and offer gameful maturity to the end-user (Hamari, 2019). Besides the system composition in gamification, the human characteristics, reference of the utilization, and attitude towards the work can operate as a major part in creation, that can eventually drive experience (Hamari et al., 2018) (de Paula Porto et al., 2021). Therefore, game elements tailored towards the individuals could offer a path to advance human experiences in process of interaction in a game-based system, and similarly, it also seems to be the latest direction in the research of gamification (Koivisto & Hamari, 2019) (Klock et al., 2020) (Jahn et al., 2021). Therefore, the reconstruction of the data or altering the strategy in the attempt of reaching individuals could satisfy and meet the human desire and inclination as per their individuals' profile. The other approach such as personalized, accommodating, or recommended could be offered in the gamification plot to encourage the tailored impact. The personalized approach relates to the alteration of personal offerings whereas accommodating refers towards the alteration of communication exchange in similar aspects. Therefore, personalize and accommodating approach offers a certain fulfillment of individual desire with a reasonable fix (Hassan & Hamari, 2020)..

In recent years, gamification has got more attention in the industry, markets, and firms, to offer enjoyment and engagement in different aspects of human life (Xi & Hamari, 2019). Gamification is expanding across the

markets, for an instance, in health industry fitness apps like Runkeeper, My fitness pal, in education learning apps like Udemy, Skillshare, Coursera, in professional networking as Yammer, LinkedIn, Twitter, or in personal social Instagram, Wechat, Youtube, in financial institution apps like google pay, Paytm and therefore they all are getting popularity (Cechella et al., 2021) (Klock et al., 2020). Thus, all these are functioning industry cases of gamification in the current era (Klock et al., 2020). Fundamentally, gamification is determined to use game ingredients, elements, and components to enable a non-game experience for an individual (Klock et al., 2020) (Jahn et al., 2021). In gamification, leader boards exhibit the ranking of a different user in the online social community based on their social interaction and comparison among different users (Deterding et al., 2011) (Esteves et al., 2021). Therefore, this comparison enables competitiveness, and the comparison includes and is not limited to performance, score, ranks, status, etc which enables different users to have social communication among their competitors (Hamari et al., 2014) (Najjar et al., 2021).

Earlier literature has displayed the leader board's effectiveness for sparking user motives with the competition (Hamari et al., 2014). Besides, leader boards act as a key driver in the context of the game design, standing as one of the key elements out of the ten existing, in the context of the game mechanics standing as a primary out of the seven existing and in context of the overall gamification standing as a key driver out of the twelve mostly liked stuff (Nov & Arazy, 2013) (Jahn et al., 2021). On contrary in literature, it is also studied to have a discouraging effect on some

individuals. Also, extroverted users in education are observed using less leader board in comparison to introverts and found using more in the self-information system (Nov & Arazy, 2013). In summary, personality impacts the individual's choice of using the leader board and thus holds different motivation aspects in different realms (Klock et al., 2020) (Hassan & Hamari, 2020).

Although gamification in prior years has been part of many deliberations, its demand has been rising to enable and boost individual's encouragement and desire under different surroundings such as organization employee engagement, banking, marketing, and modernization (Hamari et al., 2014) (Whittaker et al., 2021). Gamification intends to motivate, support sensible tasks, thereby enumerating hedonic factors in the actions and catering to the growth, progress, objectives, and excitement with encouragement (Hamari et al., 2014). The principle behind such motives is to endorse individual engagement thereby making and offer game-based participation, with the help of its elements and rationale, which in the similarity of games like, example ranking, badges, points, milestones, leader boards and are not limited for the entertainment purpose (Mekler et al., 2017).

The world has transformed completely post novel coronavirus COVID 19 which was emerged in China in Dec 2019 and further triggered a global pandemic state. On 11 March 2020, the World health organization announced the pandemic situation due to which all countries had to shut, lockdown and people were asked to stay at home keeping almost no social distance from everyone (Google, 2020). During this stage, people were forcibly asked to stay at home by their respective country governments. Consequently, globally companies had to face major hits, leading to several firm shutdowns, job losses, global recession, which also severely impacted the global economic conditions of several countries. In such a middle of the storm, there were few companies, who could persist their business by their employees working from home post-pandemic (Hassan & Hamari, 2020).

The most significant and constructive force trailing to individual behavior is generally known as Intrinsic motivation (Hassan et al., 2019) (Klock et al., 2020). Whereas generally it is inspected that intrinsic motivation usually lacks in employees regarding the different tasks that they must take. Therefore, several organizations, workplaces & enterprises are contending for their employee motivation (Koivisto & Hamari, 2019). For instance, for education, the autotelic towards the study and the intrinsic motivation is treated as the peak of fruitful education (Cechella et al., 2021). In a similar context of the organization, the employee in the work zone who is self-driven appreciates their work and offer constructive work result is recognized as a success by the human resource division of that firm (Hassan & Hamari, 2020).

Gamification techniques are seen to be implements in a different context with the tendency to inspire a positive attitude along with cognitive actions while complementing the scheme to allow desired motives and finally delivering the game-based involvement in the gamic framework (Hamari et al., 2018) (Klock et al., 2020). Currently, motivational affordance is widely getting used in different sectors like education, business, organization,

crowdsourcing, and many others (Morschheuser et al., 2017) (Cechella et al., 2021). Besides the increasing interest in the gamification field and its impact on the innate feelings of individuals there still scope of gamification to get heavily used in the organization. In COVID-19 human social interaction has gone limited which is exactly the boosting factor and motivational affordance in gamification. Humans are generally born with an elemental desire towards playing, which is what gamification offers through its different elements and settings. The existing research has highlighted the ingenious and committed approach which can be applied in different aspects to enable the motivation catalyst and encourage the determination in employees of the organization (de Paula Porto et al., 2021).

The gamification industry is compounding and expected to grow by 27.5%, from USD 9.1 to USD 30.7 billion by the end of 2025 internationally. Therefore, to suffice the existing gap the primary purpose of this research is to examine the relationship between gaming motivation aspects in the online community. As part of this research, the attempt is to study the enthusiasm & awareness of company's and employees towards gamification and utilizing them in the pandemic times of COVID 19. Employees in the global firm are working virtually and are encountering challenges to recognize the work of their colleagues. This study implies how employees are currently motivated in the COVID 19 times. The companies and employees are not able to fully capitalize on the benefits of online community platforms towards their colleague recognition. Therefore, this acted as a motivation for us to consider these aspects as part of this research paper. The later part of this study refers to a deep dive in the literature primary revolving around the gamification aspects. Certainly, a survey research study was conducted to understand the different traces and findings from this study. In this study, we refer to implementation and benefits derive from gamification in the online social community platform which can enable motivational affordance (Hassan & Hamari, 2020).

## Literature Review

Gamification route the game-based settings into a non-game mode which are tasks or activities planted into the non-game setup (Costa et al., 2013). Its presence is not limited only to education but further broads in other sectors of marketing, education, financials (Hamari et al., 2014) (Cechella et al., 2021) (Klock et al., 2020). The common gamic elements include ranking, points, badges, leader board from the gamification framework (Jahn et al., 2021). Thus, such a gamic setup offers points or ranks to highlight the performance of an individual on certain tasks which can ultimately help to achieve the desired outcome (Jahn et al., 2021). For instance, badges enable the user capacity to scale up the performance and attain mastery (Domínguez et al., 2013) (Najjar et al., 2021). Accumulating points helps to lever the badge earned in the gamic process by the user which can leverage the potential to achieve even short terms objectives which incremental progress the overall capability of an individual (Klock et al., 2020) (Hassan & Hamari, 2020).

### Gamification for intrinsic motivation

Gamification attempts to enable intrinsic motivation which is difficult to attain in the workplace and also considered to be one of the major factors in employees' approach and attitude towards work (Ryan & Deci, 2000). Therefore, at times companies get into a challenging situation to have intrinsically motivated employees to manage their responsibilities and add value to their duties. It is not quite unknown that the self-engaged and self-driven employees are more productive than those who require a push. And hence the industry is attempting to implement gamified engagement in their companies by the plugin in different online platforms which helps globally employees to connect and give them that level of visibility of their recognition and achievements. Employees who relish their job are driven to result in a better productive outcome and this gets in favor of the human resource system of that company, resulting in scaling the company targets (Amabile et al., 1994).

Organizations are attaining to achieve a certain level of gamification implementation in their process or task achievements to encourage their employee performance and give them the social recognition platform in the form of badges, leader board, ranks. There are in-house gamific tools build by different companies like Yammer by Microsoft, Kudos badges by IBM, Road warrior by SAP and all of them are associate with quick and decisive, honor and recognition. Thus, seeing benefits of gamification and in the attempt of staying relevant in the market, some firms have been using these platforms in other departments like sales, marketing, customer service turnaround, etc (Whittaker et al., 2021) (Hassan & Hamari, 2020). Therefore, gamification is the route to the next level of work gamification to encourage employee motivation towards work and task achievement effectiveness by offering engagement and excitement in the gamific journey.

The analytical glass used in gamification comes from the self-determination theory, that postulate from three different satisfaction aspects under intrinsic desire are autonomy, competence, and relatedness that offer an autotelic attitude. In literature, such study is limited that gives insights on the different gamification leagues with intrinsic desire fulfillment (Ryan & Deci, 2000). Moreover, in the study of self-determination theory, the desire for autonomy, competence, and relatedness can easily accommodate the extrinsic motivation that can act to have adequate functioning. As a result, the player gets satisfaction and motivation feelings with such engaged gamific setup and gamified interactions (Ryan & Deci, 2000) (Mekler et al., 2017). And gamification boosts innate desire for individuals by driving such elemental motivation (Klock et al., 2020).

### Gamification element as a leaderboard

Gamification intends to offer a game experience to its players that makes the required activity or task more meaningful and exciting and that will result in a positive attitude shift which will hike the performance (Najjar et al., 2021). Current literature lacks a proper gamification definition based on gamific involvement, besides such involvement encourages the cognitive aspects which are autonomy, competitiveness, mastery, and hedonic motives

(Hamari et al., 2018). Therefore, with such consideration, we offer a gamific environment as the positive participation which will encourage the system used with the purpose of a better experience. Also, we perceive such experience as important for better system use and therefore, the gamific setup and its system usage may vary from user to user. However, the clear conclusion game elements for its design are not existing which can offer a complete gamified experience, instead, the current studies usually refer to game elements in the form of badges, leader board, ranking, points (Hamari et al., 2018).

In the literature, recent attempts are observed in the growing ability of gamification, where it has transitioned from the basic query of what, why towards more on the how, when questions (Nacke & Deterding, 2017). Therefore, recent studies in the literature are attempting theoretical pursuit of empirical analysis on the elements of the game architecture along with the advancement of a methodical scheme in the gamific system, resulting to interpret the user's system realm (Mekler et al., 2017) (Jahn et al., 2021). In research, studies have highlighted the importance and value of the gamific environment and therefore it indicated the offering interesting task that enables improving better outcomes and that raise user motivation towards the task to reach exceptional user engagement (Landers et al., 2017) (Jahn et al., 2021). And, not necessary that gamification instruments would naturally offer results such as Omnicare gamification was inspected as invasive by its employees which resulted in a decline in client satisfaction culminating in a high staff turnover percentage. And hence later for success, Omnicare changed the design for better fitment (Liu et al., 2017). Therefore, even in enterprise systems, it is necessary to have legitimate design settings to enable proper outcomes from gamification. A recurrent discussion is considered in the gamific design which could be a result of different gamific settings for instance user types or gamification procedures. In literature its seen that players have divergent thinking for leader boards, conclusively can also result in non-optimistic results in attitude.

The leader board is one of the demanding elements from the different offerings from gamification in the industry (Koivisto & Hamari, 2014) (Jahn et al., 2021). Unlikely other gamification elements like crowdsourcing, which aims to attain consistent tasks which are usually used in leader board-placed gamific designs (Morschheuser et al., 2017). In the leader board design setup, all the participants and groups are listed based on their proportionate progress and therefore it offers the evaluation on them. Leader board attempt to grant the display of the player's success, goal setting and then let the player perform on those goals which will generate ranking on the leader board (Landers et al., 2017) (Hassan & Hamari, 2020). Therefore, the leader board acts as an encouraging tool to boost competition (de Paula Porto et al., 2021). The Expectancy theory formulates around three primary aspects from players' motivation perspective that relates among attempt and achievement, among achievement and result, and among charisma of the output. There is a different category of performers as high and low, where high achievers choose to attempt and achievement with achievement and result as substantially decisive on the other hand low achievers category have a preference where such connections are not strong (Vroom, 1964).

**Gamification competition on the online virtual community as a leaderboard**

In literature, the social comparison theory suggests that human holds innate desire to assess own selves while competing and comparing with others in different aspects, such as mindset, capability, and quality. Therefore, the social comparison can be upward or downward, where upward refers to comparing own selves with a competitively better crowd, and downward refers to comparing own selves with a less competitive crowd (Festinger, 1954) (Esteves et al., 2021). This theory recommends that data on colleague progress can encourage boost self-performance (Najjar et al., 2021) (Klock et al., 2020). Therefore, social competitiveness and comparison can benefit the individual progress towards their objectives which in turn assist the organization to improve the overall performance (Najjar et al., 2021). And is not limited to employee’s comparison of their current but can also provide an opportunity to track and understand the past achievements (Festinger, 1954). Therefore, globally intranet offers social comparison on their growth, capacity and offers a chance to demonstrate the performance on their platform (Najjar et al., 2021). Usually, in the work environment, such progressive growth could be challenging.

The usage of the leader board in an organization is become more frequent to restore employee motivation, which offers goal-setting theory and behavioral change in the employees which inspire them to accelerate the difficult task (Landers et al., 2017). The major role of the leader board is to encourage and strengthen a culture of healthy competition through communal comparison. The existing research of gamification is observant in different markets and domains for example fitness app, social networking on LinkedIn. The existing literature lacks to cover different aspects of the leader board towards social motivation. As part of this research paper, we offer a study based on a survey, that offers to understand its acceptance and outcomes in the organization. Where the choice of using a leader board can differ from organizations, hierarchy levels, personality, and their role in their company. In this study, the result demonstrates the respondent’s acceptance of the leader board and its impacts on their motivation level.

**Research Methodology**

Attempting to align the study as per the objective of our research, we proposed here exploratory research with random sampling, and respondents were required to fill the online question survey. The participant's background was from the workforce community of 156 counts and organization representative of 52 counts. This study focused on the gamified virtual community question that maps with the intrinsic satisfaction aspects which were challenging to satisfy for the organization in the COVID 19 pandemic. In a pandemic, it is challenging to keep one’s motivation high which was the real challenge for the organization, and this is what our survey study was trying to understand.

To measure the survey questions, the tool of the five-point Likert scale is used, where 5 is standing as high and further lowering down to 1 as the minimum score. Further,

statistical analysis is conducted for data analysis purposes using all the measurement items as part of the questionnaire survey. In conclusion the higher the score is the higher is an indicator of gamic engagement followed in their organizations. The study demonstrates that both companies and their employees are interested to engage through the gamification platform, especially at the time of COVID 19, since it is not feasible to meet socially.

**Participants**

The survey was respondents were 208 in number among the working staff community, with female responses of 25%, followed by male responses of 75% as indicated in the below table. The respondent’s participants ages were among the different generations, where maximum participation is from generation Y as 50%, followed by generation X 38% and generation Z 13%. Also, after further studying on the survey responses, the maximum participation was from the IT/ITES department leading with 88% from the other departments. Moreover, the employment level of participants was identified leading by middle management as 50% and further followed by senior management as 25%, entry and support level as 13% respectively.

**Figure 1 – Demographic profile from the responses**

	No.	Per		N	Per
<b>Gender</b>			<b>Employment level</b>		
Male	156	75	Entry Level	26	13
Female	52	25	Support Functions	26	13
			Middle Management	104	50
			Senior Management	52	25
<b>Generations</b>					
Generation Z	26	13			
Generation Y	104	50	<b>Department</b>		
Generation X	78	38	IT/ITES	182	88
			Marketing/Sales	26	13

Figure a – Demographic profile from the responses

**Objectives**

Intrinsic motivation is challenging for any firm to attain for its employees. And this had been a challenge during the time of the novel coronavirus pandemic 2019. Gamification not only offers to mediate the intrinsic aspects of motivations whereas it also offers different game setups in the non-game environment which helps to boost the user motivation and excite them. Here, in this study, we propose to have user innate desire satisfaction on the virtual online gamic platform to boost different intrinsic factors. Similar engagement becomes one of the best offerings from the companies to their employees in such a global catastrophe situation. The biggest challenge itself for an individual in the current distracted world is to keep focused and keep going in their goal, where motivation at times may vary. And this is what gamification is offering to bring the goals setting, motivations, and need satisfaction to trigger the excitement at work and give a valuable contribution to towards their company growth.

**Hypotheses**

In literature studies, the innately motivated mindset is usually referred to between the gamification and intrinsic motivational aspects that are mentioned in the self-determination theory (Ryan & Deci, 2000). Lately, technology has started playing important role in global

connectivity and offering different gamified online virtual platforms that can help to boost individual productivity to encourage and excite the users (Davis, 1989). In this study, we have identified different hypotheses to test the relationship among the gamified online virtual community and different intrinsic satisfaction aspects such as autonomy, competence, and relatedness which are studied during the global pandemic of the 2019 novel coronavirus.

H<sub>01</sub> – There is no significant relationship between the gamified online community and intrinsic need satisfaction in the employees towards freedom during the COVID-19 pandemic.

H<sub>02</sub> – There is no significant relationship between the gamified online community and intrinsic need satisfaction in the employees towards autonomy during the COVID-19 pandemic.

H<sub>03</sub> – There is no significant relationship between the gamified online community and intrinsic need satisfaction in the employees towards recognition during the COVID-19 pandemic.

H<sub>04</sub> – There is no significant relationship between the gamified online community and intrinsic need satisfaction in the employees towards competition during the COVID-19 pandemic.

H<sub>05</sub> – There is no significant relationship between the gamified online community and intrinsic need satisfaction in the employees towards achievement during the COVID-19 pandemic.

H<sub>06</sub> – There is no significant relationship between the gamified online community and intrinsic need satisfaction in the employees towards competence during the COVID-19 pandemic.

H<sub>07</sub> – There is no significant relationship between the gamified online community and intrinsic need satisfaction in the employees towards mastery during the COVID-19 pandemic.

H<sub>08</sub> – There is no significant relationship between the gamified online community and intrinsic need satisfaction in the employees towards progress score during the COVID-19 pandemic.

H<sub>09</sub> – There is no significant relationship between the gamified online community and intrinsic need satisfaction in the employees towards social relatedness during the COVID-19 pandemic.

H<sub>10</sub> – There is no significant relationship between the gamified online community and intrinsic need satisfaction in the employees towards social satisfaction during the COVID-19 pandemic.

### Results & Analysis

To further verify the hypotheses formed in this research study, a statistical analysis is performed using Chi-Square with the help of the SPSS. Where first the hypotheses were identified to perceive and then in detail understand the comprehensive aspects between the hypothesis's framework in the scope of gamified online virtual community and intrinsic motivation in the employees.

H<sub>01</sub> – There is no significant relationship between the gamified online community and intrinsic need satisfaction in the employees towards freedom during the COVID-19 pandemic.

**Table 1 – Test result of H<sub>01</sub>**

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	74.880 <sup>a</sup>	3	.000
Likelihood Ratio	100.227	3	.000
Linear-by-Linear Association	61.473	1	.000
N of Valid Cases	208		

In the process of statistical analysis and further attempting the Chi-Square test of independence, which resulted in P-Value 0.000 to reject the null and accept the hypotheses. Indicating the significant relationship of the gamified online virtual community accelerates the intrinsic need satisfaction of freedom in the employees during the global pandemic of 2019 novel coronavirus.

H<sub>02</sub> – There is no significant relationship between the gamified online community and intrinsic need satisfaction in the employees towards autonomy during the COVID-19 pandemic.

**Table 2 – Test result of H<sub>02</sub>**

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	74.880 <sup>a</sup>	3	.000
Likelihood Ratio	100.227	3	.000
Linear-by-Linear Association	61.473	1	.000
N of Valid Cases	208		

In the process of statistical analysis and further attempting the Chi-Square test of independence, which resulted in P-Value 0.000 to reject the null and accept the hypotheses. Indicating the significant relationship of the gamified online virtual community accelerates the intrinsic need satisfaction of autonomy in the employees during the global pandemic of 2019 novel coronavirus.

H<sub>03</sub> – There is no significant relationship between the gamified online community and intrinsic need satisfaction in the employees towards recognition during the COVID-19 pandemic.

**Table 3 – Test result of H<sub>03</sub>**

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19.413 <sup>a</sup>	2	.000
Likelihood Ratio	28.140	2	.000
Linear-by-Linear Association	15.000	1	.000
N of Valid Cases	208		

In the process of statistical analysis and further attempting the Chi-Square test of independence, which resulted in P-Value 0.000 to reject the null and accept the hypotheses. Indicating the significant relationship of the gamified online virtual community accelerates the intrinsic need satisfaction in the employees by getting recognized during the global pandemic of 2019 novel coronavirus.

H<sub>04</sub> – There is no significant relationship between the gamified online community and intrinsic need satisfaction in the employees towards competition during the COVID-19 pandemic.

**Table 4 – Test result of H<sub>04</sub>**

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	134.044 <sup>a</sup>	2	.000
Likelihood Ratio	175.914	2	.000
Linear-by-Linear Association	127.738	1	.000
N of Valid Cases	208		

In the process of statistical analysis and further attempting the Chi-Square test of independence, which resulted in P-Value 0.000 to reject the null and accept the hypotheses. Indicating the significant relationship of the gamified online virtual community accelerates the intrinsic need satisfaction in the employees of competition during the global pandemic of 2019 novel coronavirus.

H<sub>05</sub> – There is no significant relationship between the gamified online community and intrinsic need satisfaction in the employees towards achievement during the COVID-19 pandemic.

**Table 5 – Test result of H05**

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	152.533 <sup>a</sup>	3	.000
Likelihood Ratio	203.123	3	.000
Linear-by-Linear Association	45.080	1	.000
N of Valid Cases	208		

In the process of statistical analysis and further attempting the Chi-Square test of independence, which resulted in P-Value 0.000 to reject the null and accept the hypotheses. Indicating the significant relationship of the gamified online virtual community accelerates the intrinsic need satisfaction of achievement in the employees during the global pandemic of 2019 novel coronavirus.

H<sub>06</sub> – There is no significant relationship between the gamified online community and intrinsic need satisfaction in the employees towards competence during the COVID-19 pandemic.

**Table 6 – Test result of H06**

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	50.844 <sup>a</sup>	2	.000
Likelihood Ratio	58.948	2	.000
Linear-by-Linear Association	17.743	1	.000
N of Valid Cases	208		

In the process of statistical analysis and further attempting the Chi-Square test of independence, which resulted in P-Value 0.000 to reject the null and accept the hypotheses. Indicating the significant relationship of the gamified online virtual community accelerates the intrinsic need satisfaction of competence in the employees during the global pandemic of 2019 novel coronavirus.

H<sub>07</sub> – There is no significant relationship between the gamified online community and intrinsic need satisfaction in the employees towards mastery during the COVID-19 pandemic.

**Table 7 – Test result of H07**

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	124.800 <sup>a</sup>	2	.000
Likelihood Ratio	158.245	2	.000
Linear-by-Linear Association	101.618	1	.000
N of Valid Cases	208		

In the process of statistical analysis and further attempting the Chi-Square test of independence, which resulted in P-Value 0.000 to reject the null and accept the hypotheses. Indicating the significant relationship of the gamified online virtual community accelerates the intrinsic need satisfaction of mastery in the employees during the global pandemic of 2019 novel coronavirus.

H<sub>08</sub> – There is no significant relationship between the gamified online community and intrinsic need satisfaction in the employees towards progress score during the COVID-19 pandemic.

**Table 8 – Test result of H08**

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	208.000 <sup>a</sup>	2	.000
Likelihood Ratio	275.210	2	.000
Linear-by-Linear Association	159.686	1	.000
N of Valid Cases	208		

In the process of statistical analysis and further attempting the Chi-Square test of independence, which resulted in P-Value 0.000 to reject the null and accept the hypotheses. Indicating the significant relationship of the gamified online virtual community accelerates the intrinsic need satisfaction of score progression in the employees during the global pandemic of 2019 novel coronavirus.

H<sub>09</sub> – There is no significant relationship between the gamified online community and intrinsic need satisfaction in the employees towards social relatedness during the COVID-19 pandemic.

**Table 9 – Test result of**

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	60.089 <sup>a</sup>	2	.000
Likelihood Ratio	76.618	2	.000
Linear-by-Linear Association	42.815	1	.000
N of Valid Cases	208		

**H09**

In the process of statistical analysis and further attempting the Chi-Square test of independence, which resulted in P-Value 0.000 to reject the null and accept the hypotheses. Indicating the significant relationship of the gamified online virtual community accelerates the intrinsic need satisfaction of social relatedness in the employees during the global pandemic of 2019 novel coronavirus.

H<sub>10</sub> – There is no significant relationship between the gamified online community and intrinsic need satisfaction in the employees towards social satisfaction during the COVID-19 pandemic.

**Table 10** – Test result of H10

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	119.253 <sup>a</sup>	3	.000
Likelihood Ratio	145.106	3	.000
Linear-by-Linear Association	11.291	1	.001
N of Valid Cases	208		

In the process of statistical analysis and further attempting the Chi-Square test of independence, which resulted in P-Value 0.000 to reject the null and accept the hypotheses. Indicating the significant relationship of the gamified online virtual community accelerates the intrinsic need satisfaction of social satisfaction in the employees during the global pandemic of 2019 novel coronavirus.

## Discussion

The purse of engagement approach in gamification, not only expands the attitude of the championship, whereas it also further poke the response through emotions and behavior and making the relationship among emotional dynamics, experiences, and engagement (Whittaker et al., 2021). Internationally companies where employees are online working from home are facing situations where they are unable to recognize their work fellows. While in the non-pandemic times there was a situation where the companies conducted several rewards ceremonies, functions, etc. That is where the gamified online virtual community offers a platform to cherish the accomplishment of employees of their colleagues and boost their motivation levels (Klock et al., 2020). This study relates the gamified virtual online community with the intrinsic satisfaction factors where autonomy, competition, and social feelings were tested and addressed in Table 1 to 10 where the significant relationship is found as  $p < 0.5$ .

### 7.1 Theoretical contributions

This study adds to the existing literature to highlight the leaderboard as a gamification element in the employee's online virtual community. In the literature, its seem to exist a gap of study that contributes to the intrinsic factors under global catastrophe (Xi & Hamari, 2019) (de Paula Porto et al., 2021). The new normal has taught companies and their employees to work and adapt to the pandemic by supporting them virtually. The attempt of this study is to primary focus on the motivation aspects in the COVID 19 times where to be motivated itself has become a challenge. Since, many companies are focusing primarily on their business, whereas there are companies who genuinely care about their employees and trying to identify and implement such alternate ways to boost their employee morale and recognize their support. Based on this study it is identified that companies are showing interest to implement gamification aspects whereas some are already ahead of the race. A properly engaged mind can be mainly consumed with the cognitive, emotional, and social aspects, and they become the driver (de Paula Porto et al., 2021) (Hassan & Hamari, 2020). Certainly, this study analysis adds to the future researchers in the field of gamification.

### 7.2 Practical implications

The study shows that gamification benefits should be measured by the companies to know the mindset and motivation level of employees and utilize this to enable the recognition culture among employees during this COVID 19 situation. Companies are showing willingness and adopting gamification platform by their encouraging their employees to increase employee motivation. Therefore, from the practical context, this research study highlights the relationship of gamefic virtual community and intrinsic motivation in the employee community. The other outlook of this study is to inspire companies and employees to implement a gamic virtual community in different departments of the company to cherish the global connectivity. Technology has been offering such gamified settings that are targeted to increases the internal productivity of the employees of different departments and bridge the feelings of social connections, self-efficacy, and competitiveness.

## Conclusion And Recommendations

The gamic elements and gamification are catching interest from the organization and are instrumented in the form of IT applications or software to better the intrinsic motivation of their employees and enlighten their attitude towards their work (de Paula Porto et al., 2021). The global COVID-19 pandemic has been challenging for all the companies irrespective of their domains and therefore leveraging such a gamic platform will not only open the future doors to handle such similar challenges if gets occurred. Technology is offering no limitations and thus companies are using such opportunities and shall use them in the future to open different gateway for employees' motivations (de Paula Porto et al., 2021). This study also highlights the purpose of using the gamic platform to address the hidden motivation challenges in the disrupted world where the attention and motivation of employees are a challenge. The COVID-19 pandemic had been very stressful for all working individuals and it is identified to be worse than world war II mental stress and it also considered that its mental impact will not vanish soon. And therefore, gamification opens a lot of motivation aspects that be used in the proper settings. This study offers and recommends the usage of the gamified virtual online platform which is like a leaderboard. A change is not easy to adapt and therefore any attitude or behavior level change would require a considerable amount of time. Gamification actions and poke such a shift in users and further, it attempts to raise the user standards for acting and driving them to fulfill their longstanding objectives.

## Limitations And Future Scope

In the attempt of trying to cover different aspects of this study, it has limitations that allow future researchers to study this research in more detail. This study is in the Indian employee context and hence it does not cover the employees of other nations which can open the interesting factor for future analysis and thus it cannot be generalized which is the primary weak factor of this study. The other aspects which limit the study are the duration of the gamefic virtual community and therefore longitudinal research can enlighten and contribute to other aspects in the gamification

settings in the non-game-based framework. The gamification element study is focused on the leader board in the virtual online gamic platform and therefore it limits the study of other gamic elements considering the vast scope of gamification framework settings. Furthermore, the survey questioning is self-reported for data collection and may be biased trigger issues. Lastly, a future detailed study on the demographic and personality of participants could add more value to the existing gamification literature.

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