Studying the Mediating Effect of Gamification on the Relationship between Psychological Capital and Employees' Creativity in Bahrain

Sarah Emad Eldin Ahmed Aly
ORCID ID: 0000-0003-4296-5655
MBA Student, Istanbul Aydin University

Abstract:- This study aims to study the mediating effect of gamification and measure its impact on the relationship between psychological capital and employees' creativity. On this basis, we conducted an applied study by distributing a questionnaire via the Internet with employees from different companies in the Kingdom of Bahrain. The idea of using an App called Habitica, which is a game to track habits, was presented, as the main goal of it is to transform work-related tasks as part of its game. This proposal came on the basis that some of the employees of these companies had already been using this application for at least two weeks, and the use of this application was mainly as part of the gamification policies that the company was trying to implement recently. The research data were obtained from 115 employees who are using Habitica App for at least 2 weeks and 122 employees who are not using it at all. Psychological capital, employees' creativity, and the relationship between them were measured among the total number of responses which was 237, and then we have compared them. As a result, it has been determined that gamification has a significant and positive effect on both psychological capital and employees' creativity. Besides, This relationship was evaluated in the context of observing the mediating effect of gamification on both of them. It has been determined that gamification has a positive mediating effect on the relationship between psychological capital and employees' creativity.

Keywords:- *Gamification, Psychological Capital, Employees' Creativity.*

I. INTRODUCTION

Today amid of the most recent era of globalization and digital transformation which put all the business world in front of a great challenge, to tackle these challenges companies are seeking out recruiting and retaining the talent needed for growth.

Moreover, the focus on human capital as it's one of the key drivers of corporate success and sustained competitive advantage, that's why the HR function has rapidly become irrelevant because if it doesn't modernize its approach to planning for the future needs in the workforce, the most of pathfinding HR organizations cite identifying the future workforce composition as a strategic priority, they are actively shaping tomorrow's workforce and they need to design an employee experience that mirrors the customer experience. Many studies have focused on studying positive psychological capital and the extent of its positive impact on all aspects of the organization, beginning with organizational behavior, job satisfaction, and the overall performance of the organization. Also, many studies have linked positive psychological capital to the innovative work behavior, however, still, there is no clear understanding of the behavior of employees especially in the middle east countries. Besides, all the studies that have been done in this field were ignoring the latest trends and techniques that could affect their results.

As employees we are not expected to execute efficiently the task that has given to us, we are expected to bring our creativity and entrepreneur to the door and help the business to innovate, so to be successful as an employee in this new reality we have to engage in the mission of the company and make the good decision every day to follow this mission, according to the latest studies about employees' engagement in only about 30 % of employees are engaged to work that means they are psychologically committed to the goals of the organization and willing to make a positive contribution and the majority of the employees around 63 % are not engaged that means they are unmotivated and unwilling to contribute and 24 % are actively disengaged they are unhappy and unproductive. Business leaders are taking a look at these alarming numbers and they are willing to try new ways to engage and motivate their employees and gamification just offers us a new way by questions and assumptions of work and play.

The most studies about gamification are focusing on the impact of gamification in education and how to use gamification as a marketing tool to enhance customer loyalty or customer engagement and there are limited studies regarding studying the impact of gamification in the workplace, even though those studies discussed only the overall impact of gamification but they didn't link this impact with the employees themselves and their behavior and how will this great power help to enhance their capabilities, because it's more than a technique it's a mindset that has the potential to transform the workplace.. Therefore, the problem statement for this study is to study the mediating effect of of gamification on the relationship between psychological capital and employees' creativity by taking the evidence from different sectors in Bahrain.

This study has a desire of creating the consequence of Gamification on the psycological capital of the employees and their creativity at different types of organizations in Bahrain. İts result will be meaningful in the following ways.

- The HR managers of the organizations have an exclusive responsibility to motivate the employees to be more creaitve by using the output of this study to conclude the possible results of the changes.
- The findings of this research may able to help organizations, the management to apply new ways to gain a compatitive advange in the marketplace.
- This research can be beneficial for HR managers those who may want to utilize this research as a base for additional research on a psychological capital on the employees' creativity.
- The results of this study also provide worthwhile insights for understanding of the dimensions of psychological capital altogether and creativity.
- The current research also can provide more valuable insights fort he future studies which should examine the performance outcomes of employees' creativity and the mediating effect of gamification on the relationship between psychological capital and employees' creativity.

II.   LITERATURE REVIEW

Gamification

Gamification and games share many characteristics. For instance, we can say that gamification provides us with a fun activity to do, also it has rules and levels that we need to follow (Bohyun Kim, 2015). Gamification is the approach that has been increasingly used recently to engage users and is also used in the process of changing behavior. It is mainly, as we mentioned earlier, that it refers to the use of elements of games such as points, challenges, and surprises in many other non-game contexts (Nurmi et al, 2020).

Organizational researchers have noted the use of games at work since the 1930s, but evidence suggests that workplace games may have appeared much earlier, and were used to motivate workers in ancient Egypt (Edery & Mollick, 2009).

The concept of gamification is used in various fields of knowledge and by many authors, for example, marketing, psychology, education, tourism, and even public policy. Despite the different strategies and applications used in each field, the goal remains one of using gamification, which is to stimulate and engage users in activities in an enjoyable way. It is a way to change behavior (Washington et al, 2019). Based on this, it becomes clear to us the importance of understanding the concept of gamification well as it contributes to how to determine the appropriate application and use it by the users to be motivated or engaged and interact to create the value to be achieved. Therefore, before talking about different examples of the applications of gamification in various fields, we must first address to talk about motivation, or rather motivation psychology.

Motivation psychology

The term motivation is a very popular and widely used term (Kessler E.H., 2010), although it is still poorly understood at all. There are many definitions of the term motivation, but all of them are deficient in one way or another and lack many basic factors that will help to understand this term in a deeper way and the ability to use it in the right way in the appropriate place. Motivation is more than just a term or a concept, it is a psychology and I always see it related in one way or another to the engagement, or in the correct sense of the art of engagement. This art could be applied in any field and to anyone, those could be students, work team, customers, or even it could just be yourself.

What naturally motivates us?

Two types of reinforces can motivate us and they are primary reinforces and conditional reinforces. Primary reinforces what is that nature gives us a dopamine release, which, without any manipulation, the world will still get dopamine releases for doing these things. Mass Low and Maslow created the hierarchy of needs, which is a pyramid on each layer of the pyramid has a different set of needs, and we need to accomplish those things before we can go up to the next level (Acevedo, 2018). As it's shown in the diagram below, the very bottom level is our physiological needs things like food and water, the things that we need to survive. But the next level after that is safety. This is where you want security like a permanent job or a pension, these things that tell us we will have food and water in the future. The next layer above that is love and belonging. This is where we need a community with which we are connected. From that, the next they are above that is self-esteem. The next layer is called Esteem, Man Slow split this into halves. You have got your basic esteem, which is like status and your reputation. This is where people approve of you, and the next they are up from that is your self-esteem. This is where you approve of yourself and you feel comfortable in yourself, that is self-actualization, this is different for everyone. These are very personal to ourselves, and as long as it's not about the status, as long as we might still roll in the hay if people weren't watching, then it's not an esteem thing. It's this thing inside of ourselves where we want to be the best we can. It doesn't matter so much if we are better than other people. It managed that we are achieving all that we can achieve.
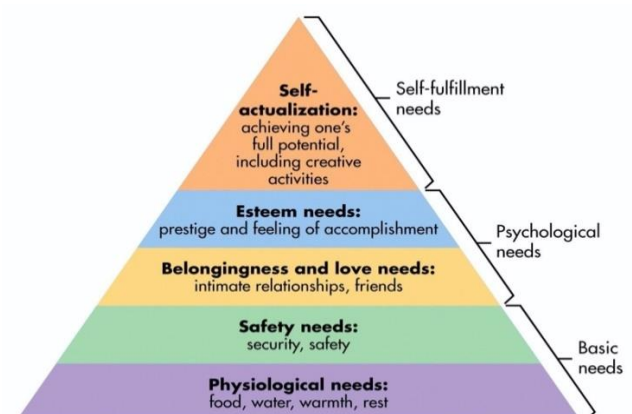

Figure 1: Maslow's Hierarchy of Needs

Intrinsic and extrinsic motivation

When we look closely at those needs, we will find that some of them very much outside of ourselves, they are very physical in the real world. Like for example, food, water, and even job security, but also the lower level of esteem, that status, and that approval all of the other ones above that the self-esteem visits within ourselves. These are internal, that's why we have to make a defined split into two types of rewards intrinsic and extrinsic rewards. Extrinsic rewards are the ones out there in the real world, while intrinsic rewards are inside you (Levesque R.J.R, 2018). The point here that we need to focus on intrinsic rewards, things like contributing to the community, personal growth, deep human relations, and less about things like money, fame, and approval. This is because some of those extrinsic rewards have been proven to get in the way and distract us from these more important intrinsic rewards.

The intrinsic rewards we will keep happily working towards with no damaging detrimental effects to our health or without us damaging any of our other goals. There is a state known as flow. Now the thing with the flow is it's a state that we get into where time seems to stand still and we have all these creative ideas and we just seem to naturally enjoy and be motivated to try to the items we do and be oblivious to all or any those extrinsic things around us and flow is that the ideal hyper state that we want to be ready to get ourselves and people into, and that we can't give people flow. So, if we want to motivate people, we can't just give them that state, but we can create an environment for them to be able to get into it so we can create communities. We can create meaning, and it'll allow people to urge into the flow. But once we create things like status on, we create things like money, it's detrimental to people having the ability to urge into flow air. Dr. Daniel H. Pink, Drive says people oriented toward autonomy and intrinsic motivation have higher self -esteem, better interpersonal relationships, and greater general well-being than those that are extrinsically motivated. Also, MIT it's a college in the united states did an experiment where they gave people 3 different levels of rewards for doing a task and they found the more analytically the task the more involved some kind of creativity and daily there were able to achieve and get in the flow. And they found that the more they paid people the lowest of results. (Legault L, 2020). To sum it up we can say that, extrinsic motivators are short-term and unsustainable, while intrinsic motivators are much more powerful. Daniel H. Pink, Drive said, "humans beings have an innate inner drive to be autonomous, self-determined, and connected to at least one another, and when that drive is liberated, people achieve more and live richer lives". Hence, we will be focusing on the four big intrinsic motivators community, autonomy, meaning, and mastery.

- Community, such as hang out with friends, attend parties
- Meaning, this is why thousands of people contribute to Wikipedia without getting pain they just have the sense that we should share this information and this knowledge and we should build on this thing.
- Mastery means, continuously improving and saying that you are improving this is why people spend hours to learn

how to play the piano beautifully without a desire to be a famous pianist they just want to improve themselves
- Autonomy: is the ability to make some kind of choice. This is the liberty that we all so desperately crave.

Gamification as a motivation and an engagement tool

The concept of gamification simply is about turning the tasks into a game, to get this game feel, the players will be more motivated to complete it (Bardwell & Tina, 2019). According to Kapp (2012), that motivation and interest can be increased by focusing on game-based mechanics. Most studies point to gamification as a very effective method of motivation and participation. Some literature has mentioned this effect, but with different names, such as incentives approach or incentive mechanisms, which include badges or points that the user gets after completing the tasks required of him (Anderson et al., 2013).

Gamification authors argue that companies, schools, an deven governments, use this strategy to motivate people (Bardwell & Tina, 2019). Given Domínguez et al. (2013) where a questionnaire was used on the participants in the use of the site and levels of motivation, and the results strongly support an increase in the user's motivation when using Blackboard and a higher motivation towards learning with an achievement structure (Domínguez et al., 2013). Likewise, Frith (2014) found when looking at the Foursquare app, that participants interacted and engaged in their surroundings differently, and that participants indicated increased levels of motivation and engagement due to this app (Paul Wolff, 2017). By looking at The self-Determination Theory (SDT), which examined the relationship between motivation and social context, it was noted that many of the basic components of this theory such as, compete with others, work with others, and make their own decisions about things, can be found within gamification (Deci & Ryan, 2015).

Gamification and games

According to Kapp (2014), it clarifies the difference between Gamification and Gaming; Explaining that gamification is the use of some elements of the game. As the main idea here is not the game itself, but the goal is to join activities that include the elements of the games such as overcoming the challenge or receiving badges for completing missions or earning points. Hence, the difference is where the games have a beginning and an end, but gamification is the players' realization that they are participating in the in-game activity and at the end, there is a win situation.

There are some who condemned gamification to failure, and this was due to a misunderstanding of this term, as care must be taken to understand it in a good way, especially when designing a system for gamification, it must be in accordance with the correct instructions so that we can guarantee the success of this system and obtain the best results. (Cugelman, 2013).

Kiryakova (2014) summarizes some of the advantages that games have and play an important role in gamification as follows (Al Kahwaji, 2019):

- Users are involved – students, customers, or employees.
- Challenges/tasks that users achieve and develop towards specific goals.
- Points that are collected as a result of carrying out tasks.
- The levels that users rise according to points.
- Badges that help as rewards for completing actions.
- Ranking of users according to their achievements.

Game elements

We have previously referred to a set of features that characterize the games and that play an effective role in the gamification policy, but for further clarification and after reviewing the literature, it was found that there is a set of specific and main game elements. It has been observed that these elements are present in modern video games and the gamification policy is based primarily on re-employing these elements outside of video games and in all areas of real and practical life (Paul Wolff, 2017).

Among the most common game elements that have been identified through the literature review are:

- Awards or achievement: are mainly the digital rewards for completing a task or series of tasks within a system (Chapman & Rich, 2017; Dale, 2014; Dickey, 2007; Hamari et al., 2014; Rapp, 2017; Sailer, Hense, Heinz, & Klevers, 2013, Seaborn & Fels, 2015, Zichermann & Cunningham, 2011).

- Points: a digital scale defines some actions within a system. Its primary purpose is to track the progress within a gamified system (Chapman & Rich, 2017; Dickey, 2007; Hamari et al., 2014; Maan, 2013; Rapp, 2017; Sailer et al, 2013; Seaborn & Fels, 2015; Zichermann & Cunningham, 2011).

- Badges: They are very similar to awards as they are awarded after completing the task, but the only difference is that badges are distinguished by being permanent as they are displayed repeatedly on the nameplate or in some other manner to convey status (Chapman & Rich, 2017; Seaborn & Fels, 2015; Deterding et al., 2011; Hamari et al., 2014; Maan, 2013; Zachermann & Cunningham, 2011).

- Progress bars: it's simply a visual representation of a users' progress as that one at Linked in that shows how much did you finish your profile (Chapman & Rich, 2017; Dale, 2014; Dicky, 2007; Hamari et al., 2014; Sailer et al, 2013; Seaborn & Fels, 2015).

- Levels: Digital standards that convey expertise, skill, or competence in a domain of the system. Where usually, progress in these levels is achieved by accumulating a specified number of points or upon completion of a specific task (Chapman & Rich, 2017; Deterding et al., 2011; Dickey, 2007; Hamari et al., 2014; Maan, 2013; Rapp, 2017; Seaborn & Fels, 2015; Zichermann & Cunningham, 2011).

- Quests: This includes the task or a series of tasks that the users perform within the system. Often these tasks represent a form of narrative structure as part of a larger progression model (Blohm & Leimeister, 2013; Chapman & Rich, 2017; Dale, 2014; Dickey, 2007; Rapp, 2017; Sailer et al, 2013; Zichermann & Cunningham, 2011).

- Leaderboards: It is an ordered list of usernames within a system based on some measure. Its purpose is to enhance the feeling of competition within a gamified system (Chapman & Rich, 2017; Deterding et al., 2011; Hamari et al., 2014; Mann, 2013; Sailer et al, 2013; Seaborn & Fels, 2015; Zichermann & Cunningham, 2011).

- Avatars: Digital representations of self within a gamified system (Blohm & Leimeister, 2013; Chapman & Rich, 2017; Deterding et al., 2011; Sailer et al, 2013).

- Rules: They are the rules that govern the general structure of the application and their function is to define the processes within the system (Chapman & Rich, 2017; Deterding et al., 2011; Maan, 2013; Zichermann & Cunningham, 2011).

- Bosses: These are difficult levels or obstacles that require effort to achieve them (Chapman & Rich, 2017; Hamari et al., 2014; Zichermann & Cunningham, 2011).

- Real-time feedback: it can be through both audio and visual indicators after reaching a level, or an achievement (Chapman & Rich, 2017; Deterding et al., 2011; Hamari et al., 2014; Zichermann & Cunningham, 2011).

Gamification at the workplace

As mentioned earlier, evidence indicates that games appeared in the workplace in the past and that they were also used as a motivational tool for workers (Edery & Mollick, 2009). Upon reviewing all the definitions that researchers use for the concept of gamification, we found that they all fit the methods used in the past to motivate workers despite the different nature of games in the workplace over the years, as games are systems in which players participate in an artificial competition (either alone or against players). Others). This is according to specific rules (Salen, 2004; Zimmerman & Salen, 2005). In contrast to previous studies that considered gameplay as a waste of time and especially for management (Roy, 1953; 1954), Burawoy (1979) in his study pointed out the many benefits of games and at the same time very important for management as Burawoy (1979) saw games as an important method. In which management exercises control over workers, Burawoy (1979), based on another positive perspective in which workers are transformed into a side struggle with each other through play, in the form of competition, rather than uniting against management. After Burawoy's research (1979), employees began to search for games in various forms in a variety of settings, whether in the form of contests or classes. And then games were of interest by managers as well, rather than merely tolerating games that developed naturally (Reeves & Read, 2009). This was in the spirit of reducing the intensity and pressure of work and trying to satisfy the employees and make this work more enjoyable. His assumption was based mainly on the motivation principle, which prompted managers to incorporate games into the work environment (Mollick & Rothbard, 2014).

The companies that implement the concept of gamification are divided into two main categories: the first category is services, consumers, and their marketing and loyalty programs, and the second category mainly focuses on employees and trying to motivate them to improve their performance at work (Dale, 2014).

(Deci & Ryan, 1985; Grant, 2008'a) indicates that there is a kind of pleasure that is considered as an internal stimulus, and this type is very important in a work environment. In addition to the research conducted on the games themselves, I found that the positive effect is very high, especially if the participants engage in a favorite activity for them, and here the pleasure is linked to the positive effect after the game (Przybylski, Weinstein, Murayama, Lynch and Ryan, 2012). After reviewing many pieces of literature, it was revealed that there is a research conducted on AET (Weiss & Cropanzano, 1996) which defines the emotional event as a work event in which the employee has an emotional reaction (Weiss & Cropanzano, 1996; Bash & Fischer, 2000) where the results of this research were completely consistent. With the idea that games at work can improve positive impact and performance. Although the research in AET did not examine games as sources of emotional reactions per se, games by their very nature are designed to trigger emotional events (Mollick & Rothbard, 2014). As we mentioned earlier, we talked about the elements of the game such as rewards, challenges, and the spirit of competition, which must be put in a good and thoughtful way, as it gives the participants a sense that they are constantly achieving success in the world of the game (Coaster, 2004; Von Ann and Dabish, 2006; Ye, 2006; Reeves and Reed, 2009). Moreover, games provide a much greater sense of accomplishment than is possible in a real workplace (Davis, 1959; de Man, 1928; Edery & Mollick, 2009; Schell, 2008). Hence the positive effect of an individual in response to playing the game (Reeves & Read, 2009; McGonigal, 2011).

The effects of Gamification at work

Through a review of previous literature on studying the impact of gamification at work, it was noticed that the results were mostly mixed between the negatives and the benefits, as it was found that approximately 39% of the studies had mixed results (Cramer et al, 2011). The reason for this mixing is due to many factors, including small sample sizes, as well as simple research designs, and from here it appears that there is a gap between practice and research. But if we look closely at modern human resource management practices, we find that they contain, to a very large extent, gamification strategies under other names, including motivation and engagement. However, there has been a noticeable increase in recent years in studies on the impact of gamification in the work environment (Hosseini & Haddara,2020), including with regard to efficiency and motivation in the context of work gamification (Warmelink et al., 2020). According to (Selleck et al., 2020), the endeared human resource outcomes have had positive effects on employee satisfaction and engagement, in addition to Larson 2020's conclusion in the context of corporate learning, on actual positive results of some successful applications. Despite this, more research is still needed that measures actual results in the same specific organizational contexts. Therefore, we found numerous calls for research by (Cardador et al., 2017; Ferreira et al., 2017; Hamari et al., 2014).

Habitica

Habitica is an application in the form of an online role-playing game to track habits and its main goal is to comically motivate users to reach their goals. According to the statistics on the app's website, Habitica has been downloaded more than 2.5 million times with about 250,000 active users (Habitica.com). Employees in Bahrain have been targeted from this active community who play this game for at least two weeks and use it to play work-related tasks. Through this approach to selecting a successful game, we can investigate the impact of gambling of business on companies in the Kingdom. At the same time, this approach allows us to measure the mediating effect of gambling on the relationship between psychological capital and creativity among employees in Bahrain.

Habitica is a free app and can be used for any type of task.

In Habitica, a person can turn all the tasks of his daily life into an increase in the game on the application, where the user plays with a fictional character. There is a special design for the game that includes points, levels, and special rewards (for example, fictional character items). A person can also gain experience and level increase or lose health, and thus decrease in level for not completing missions.

There are several options for using Habitica including habits, dailies, tasks, and rewards. Habits are designed to create and maintain habits that users want to lose or want to establish. Daily newspapers and assignments are designed to set goals. Users can create checklists for their tasks, which are then represented as time tasks with an expiration date. In this context, they have a function that serves as a reminder to the users. Daily newspapers are repayable tasks that users perform at regular intervals. The rewards are intended to support the motivation of the users. They get points and special rewards like weapons or pets when they reach their goals by succeeding - completing their quests and dailies completely or maintaining their habits. If users do not complete their tasks, they lose Health Points. It is also possible to participate in challenges, as users dare to hit special goals together.

Psychological Capital

Psychological capital is a fundamental concept in positive psychology (Luthans, Avolio, Walumbwa & Li, 2005), as it contains capabilities that all share the ability to achieve goals and continuous pursuit in addition to the capacity for internal control, flexibility and efficiency. The psychological capital is characterized by optimism. Self-efficacy, hope, and flexibility (Luthans, Youssef, & Avolio, 2007, p. 542). It also gives consideration and importance to studying different circumstances and their impact on the individual and how to deal with them, all of which leads to achieving success from a positive perspective that depends primarily on continuous effort. (Luthans, Youssef et al., 2007, p.550) Hence, we can conclude that positive psychological capital refers to positive psychological resources through optimism, hope, self-efficacy, resilience, the ability to endure and bounce back further to achieve

success (Luthans, Youssef et al., 2007, p. 3). There are several studies that have linked positive psychological capital with work participation and employee satisfaction (Luthans, Youssef et al., 2007). The results indicated that employees who have high psychological capital are able to a great extent to adapt to the work environment and feel satisfied (Luthans, Avey, Avolio, Norman, & Combs, 2006). The following are descriptions of the building blocks of psychological capital: optimism, self-efficacy, hope, and resilience.

Optimism

Optimism is simply a personality trait that depends on the positive circumstances surrounding the person, as it interprets it, but on the basis of long-term personal factors, while you interpret negative conditions on the basis of short-term external factors (Yusef and Lothan, 2007). According to (Carver and Scheer, 2002) optimism consists of two main factors, proliferation and persistence, and they generally summarize people's view of events. In the sense that individuals who have an optimistic outlook have the ability to welcome obstacles as they view them as opportunities for success and challenges and here emerges perseverance (Luthans et al., 2005), Thus there is a close positive correlation between optimism and job engagement (Arakawa & Greenberg, 2007; Medlin & Faulk, 2011).

Self-Efficacy

Self-efficacy refers to a person's view of himself and his belief that he has the ability to perform the work tasks required of him in certain circumstances (Bandura, 1997). Both (Avi and others, 2009; Hayek, 2012) referred to self-efficacy as the ability of the individual to perceive and interpret events and how the individual uses to perceive these events, and this in turn deals with the individual's ability to face challenges. Also (Stajkovic & Luthans 1998) they referred to self-efficacy and described it as the individual's confidence in himself to push cognitive resources or show behavioral patterns to perform some tasks and succeed in them.

Hope

Hope is the emotion that increases a person's enthusiasm for success while performing a task (Avey, Wernsing, Luthans, 2008). Therefore, in its structure, it is multidimensional. We can say that hope is the "power of the will" and also the "road force" of the individual (Avey, Luthans & Jensen, 2009; Clapp-Smith, Vogelgesang, Avey, 2009; Snyder, 2002). Whereas, willpower refers to bearing short-term temptations in order to achieve long-term goals, and this simply means delaying satisfaction, and willpower also refers to the ability to plan and think in the presence of obstacles (Snyder, Irving, & Anderson, 1991). Snyder (2002) indicated that hope gives an effect that protects against inability to control and weakness and also gives the ability to predict correctly; Therefore, maintaining hope among employees has a very high impact on employee well-being. Moreover, a positive relationship has been found between hope and job engagement according to (Adams et al., 2002; Othman & Nasurdin, 2011; Youssef & Luthans., 2007).

Resilience

Resilience refers to the individual's ability to adapt in the presence of setbacks, and it also indicates the person's ability to arrange his life and affairs (Luthans, 2002a). (Rutter 1987) defined it as the ability of the individual to deal with success and ease with events in order to face obstacles in a similar context. Luthans (2002b) defined resilience as the ability to recover in light of adversity (Luthans, 2002b). Personalities with high resilience are able to return to their normal life path even after exposure to stressful events and adversities. Therefore, flexibility indicates the extent of an individual's strength and capabilities to solve problems and deal with adversity (Baumgardner & Crothers, 2010). Also, a positive relationship was found between flexibility and engagement in work (Luthans, Avolio et al., 2007; Youssef & Luthans, 2007).

Creativity

The creative behavior of employees is a competitive advantage necessary to ensure the survival of the company (George, 2007). Creativity in general refers to the ability to generate new ideas with the aim of creating a competitive advantage and helping to explore opportunities and even create them (Anderson, Potocnik and Zhou (2014), as creativity is closely related to finding appropriate solutions to problems and obstacles. The definition of creativity varies in general in the literature, but All definitions of creativity refer to the ability and focus on producing new and even unique ideas that help the organization gain a competitive advantage in the market (Choi, Anderson, and Veillette (2009). Organizations should have their first and last focus on designing creative environments in order for them to help improve employee performance and improve performance and productivity in general (Anderson et al., 2014).

Employees Creativity

Creativity is the skill of creating new ideas along with the ability to analyze and solve problems in creative ways and obtain tangible results (Swati Metal, Rajab Lukan Dahar, 2015). This skill requires certain characteristics, including the determination to face challenges, whether organizational or environmental (Bandora, 1986), (Mittal, Transformational Leadership and Employee Creativity, 2015, p. 5). In the time of globalization and the speed of change, which was a major reason for creating a continuous atmosphere of challenge, creativity became the preoccupation of all organizations, but rather it is the only and ideal solution to survive. For the employee to have a feature of creativity, several attributes of this employee must be available, for example, excessive critical thinking skills while solving problems are not a feature of creativity, as excessive critical thinking does not stimulate curiosity and imagination, which are two basic requirements for creativity. Creativity is the ability to create or bring something out of nothing, while problem solving is the ability to fix or get rid of something (Hacker, Stephen; Roberts, Tammy, 2004, p.73). Therefore, experience and a high capacity for innovation is an essential factor in increasing the capacity for creativity (Cekmecelioglu & Gunsel, 2013, p.264). Psychological empowerment has also

been mentioned as another feature of creativity according to (Martins & Terblanche, 2003, p.64). Psychological empowerment lies in its achievement through four dimensions or factors (destiny, influence, meaning, and efficiency), as fate refers to independence, and influence is simply the employee's ability to positively influence his job, and the meaning here is related to the employee's belief in his job, its importance and sense of its significance, as for efficiency refers to To self-efficacy, which was previously mentioned in Positive Psychological Capital of Employee (Spreitzer, 1995, p. 1442).

Accordingly, there is a close relationship between the psychological empowerment of the employee and his productivity as it greatly affects their preparation and qualification for the innovation stage (Zhang & Bartol, 2010, p.107). Therefore, employee creativity is a factor in organizational success.

III. METHODOLOGY

The approach used in this research is a quantitative approach using survey research methods. The implicit population of the research is all employees in Bahrain who are using Habitica application for at least two weeks and who are not using it at all, to compare between of them. However, data was collected from different types of private companies in the Kingdom of Bahrain. Simple and random sampling technique is used in order to collect data. Since the most agreed number for minimum sample size is 100 in order to get significant results, i decided to choose 115 employees who are using the app and 122 employees who are not using it, so the total sample was 237 employees from different companies in Bahrian. Hypothesis testing is done by using regression analysis techniques. The variables in this study are gamification, psychological capital, and employees' creativity.

Conceptual framework
The following is the conceptual model of the study connecting between the variables:
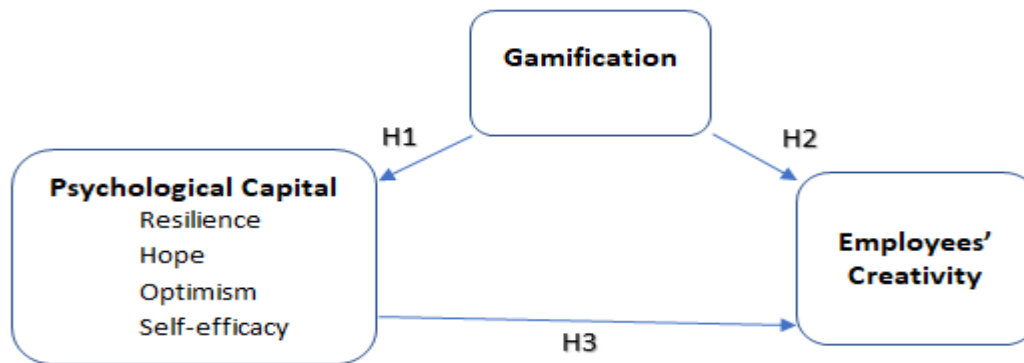
IV. RESULTS

Reliability findings
Table 1 displays the internal consistency coefficients (Cronbach's Alpha) of the scales.

Table 1: Reliability analysis

Number of Items	Variable	Alpha
3	Efficacy	.911
4	Hope	.866
3	Resilience	.890
2	Optimism	.747
13	Creativity	.942

Descriptive analysis:
Four dimensions of psychological capital of employees were measured. Table below (Table 4) displays the descriptive findings regarding psychological capital variable with its dimensions and creativity as well.

Table 2: Descriptive statistics for psychological capital with four dimensions and creativity.

	N	Mean	Std. Deviation
Self Efficacy	237	4.3854	1.07208
Hope	237	4.0970	1.00004
Resilience	273	3.8284	1.05302
Optimism	237	4.0021	1.10325
Psychological Capital	237	4.0782	.89274
Creativity	237	3.5771	.76899
Valid N(listwise)	237		

Correlation analysis:
Table 3 below presents correlations between variables of the study. Correlation is significant at the 0.01 level (2-tailed).

Table 3: Correlations

	Hope fac 2	Self-Efficacy fac 1	Resilience fac 3	Optimisim fac 4	Psy Cap	Creativity	Used Habitica (Gamification)
Hope fac 2	1	.648**	.643	.614**	.854**	.536**	.506**
Self Efficacy fac 1	.648**	1	.606**	.613	.850**	.576**	.531**
Resilience fac 3	.643**	.606**	1	.586**	.838**	.457**	.675**
Optimism fac 4	.614**	.613**	.586**	1	.838**	.511**	.531**
Psy Cap	.854**	.850**	.838**	.838**	1	.616**	.665**
Creativity	.536**	.576**	.457**	.511**	.616	1	.420
Used Habitica (Gamification)	.506**	.531**	.675**	.531**	.665	.420**	1

Regression analysis:

Table 4: Models' summary

Model Summary[d]					
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**	**Durbin-Watson**
1	.576[,a]	.332	.329	.62975	
2	.614[b]	.377	.372	.60921	
3	.628[c]	.395	.387	.60185	2.003
a. Predictors: (Constant), Self_Efficacy_fac_1					
b. Predictors: (Constant), Self_Efficacy_fac_1, Hope_fac_2					
c. Predictors: (Constant), Self_Efficacy_fac_1, Hope_fac_2, Optimism_fac_4					
d. Dependent Variable: Creativeness					

Model 1 incorporates efficacy as the predictor of creativity. Results show that efficacy relates positively to creativity (β =.413, p<.001). The R-squared of this model is .332, which means the model explains 33.2% of the variance in creativity. The associated statistic reveals that the explained variance is statistically significant (F= 116.595, p<.001).

Model 2 features efficacy and hope as the predictors of creativity. Results show that efficacy and hope relate positively to creativity (β =.283, p<.01) and (β=.323, p><.001) and (β =.215, p<.01) and (β=.323, p><.001). The R-squared of this model is 0.377, which means the model explains 37.7% of the variance in creativity. The associated statistic reveals that the explained variance is statistically significant (F= 70.856, p<.001).

Model 3 incorporates efficacy, hope, and optimism as the predictors of creativity. Results show that efficacy, hope,

and optimism relate positively to creativity (β =.235, p<.001), (β =.164, p= .003) and (β =.125, p = 0.01). The R-squared of this model is .395, meaning the model explains 39.5% of the variance in creativity. The associated statistic reveals that the explained variance is statistically significant (F= 50.653, p<.001).

Mann-Whitney test

Table 5 displays the ranks values for each factor for the employees who are using Habitica (Dataset1) and the employees who are not using Habitica (Dataset2). For the self-Efficacy fac1 the mean rank for the employees who are not using Habitica is 83.09, while the mean rank fort the employees who are using Habitica is 157.10. For the other factors there is a big differences too between the mean ranks for the employees who are using Habitica and the employees who are not using it. Therefore, we can say that this indicates the impact of using Habitica which represents Gamification on the factors.

Table 5: Rank values for the factors

Ranks	Used_Habitica	N	Mean Rank	Sum of Ranks
Self_Efficacy_fac_1	0	122	83.09	10137.00
	1	115	157.10	18066.00
	Total	237		
Hope_fac_2	0	122	84.92	10360.50
	1	115	155.15	17842.50
	Total	237		
Resilience_fac_3	0	122	73.98	9026.00
	1	115	166.76	19177.00
	Total	237		
Optimism_fac_4	0	122	83.91	10236.50
	1	115	156.23	17966.50
	Total	237		
Psychological_Capital	0	122	74.71	9114.50
	1	115	165.99	19088.50
	Total	237		
Creativeness	0	122	86.27	10525.50
	1	115	153.72	17677.50
	Total	237		

Then, we applied Mann-Whitney test to evaluate that there is a significance difference between the Mean Rank Values of the factors. Table 6 below shows that the significance value was less than 0.05. Thus we can say that there is an exist significance difference for the factors for the employees who are not using Habitica and who are using it.

Test Statistics[a]						
	Self_Efficacy_fac_1	Hope_fac_2	Resilience_fac_3	Optimism_fac_4	Psychological_Capital	Creativity
Mann-Whitney U	2634.000	2857.500	1523.000	2733.500	1611.500	3022.500
Wilcoxon W	10137.000	10360.500	9026.000	10236.500	9114.500	10525.500
Z	-8.352	-7.909	-10.458	-8.199	-10.244	-7.574
Asymp. Sig. (2-tailed)	.000	.000	.000	.000	.000	.000
a. Grouping Variable: Used_Habitica						

Table 6: Test statistics

Hypotheses testing

This study proves what is being presented in section 4, Table 7 represents the findings of examining the hypotheses.

Table 7: Hypotheses testing findings

Hypothesis	Statement	Result
H1	Gamification has a significant impact on psychological capital	Supported
H2	Gamification has a significant impact on employees' creativity	Supported
H3	Psychological capital is positively associated with employees' creativity	Supported
H3a	Resilience is positively associated with employees' creativity	Not Supported
H3b	Hope is positively associated with employees' creativity	Supported
H3c	Optimism is positively associated with employees' creativity	Supported
H3d	Self-efficacy is positively associated with employees' creativity	Supported
H4	Gamification has a mediating impact on the relationship between psychological capital and employees' creativity	Supported

V. CONCLUSIONS

This research tests the mediating impact of gamification on the relationship between psychological capital and employees' creativity. Although there have become many studies that acknowledge the effect of gamification in many areas, especially education and marketing, there is still a need to study the impact of gamification in the field of work directly (Cardador et al., 2017; Ferreira et al., 2017; Hamari et al., 2014; Rapp et al., 2019). This study aims to explore the effect of gamification at work, in addition to its relationship to the employee's psychological capital and level of creativity. Additionally, we looked at the peculiarities of the work context by exploring frontier influences. To verify this, we had to apply our study to two samples of employees. The first sample is employees who are already rotating their work-related tasks using the Habitica gaming app for more than two weeks at least. The second sample was represented by employees who had not used the application before or any similar application. On this basis, the relationship between psychological capital and creativity was measured on both samples. Based on this, the research hypotheses have been developed as follows: -

H1: Gamification has a significant impact on psychological capital.

H2: Gamification has a significant impact on employees' Creativity.

H3: Psychological Capital is positively associated with employees' Creativity.

H3a: Resilience is positively associated with employees' Creativity.

H3b: Hope is positively associated with employees' Creativity.

H3c: Optimism is positively associated with employees' Creativity.

H3d: Self-efficacy is positively associated with employees' Creativity.

H4: Gamification has a mediating impact on the relationship between psychological capital and employees' Creativity.

Our study yielded three main results, that gamification has a significant impact on psychological capital and on its four dimensions (hope, optimism, resilience, and self-efficacy), gamification has a significant impact on employees' creativity, and psychological capital is positively associated with employees' creativity including its four dimensions except for resilience.

Because of the speed of development in all fields, there has become a constant urgent need for creativity to achieve and achieve organizational goals, and this increases pressure on organizations in general and employees, in particular, to be more creative to keep up. Therefore companies are always keen to search for the latest methods to encourage and motivate their employees to gain a competitive advantage. On this basis, we must consider the psychological capital of the employees in the first place and take into account the motives of each employee.

According to the regression analysis, a significant relationship between self-efficacy and creativity exists. According to Stankovic and Luthans (1998), self-efficacy refers to the conviction that an individual has regarding mobilizing resources necessary to achieve success with a given task. This goes by this research where it is pointed out that self-efficacy is positively associated with creativity. The regression analysis shows that there is a relationship exists between hope and creativity. According to Duggleby, Cooper, and Penz (2009), research has shown that hope contributes to improved job performance among employees.

According to the regression analysis, we have found that there isn't a statistically significant relationship between resilience and creativity. However, we have found a moderate correlation but, the resilience wasn't able to explain much of the variance in creativity. As Baumgardner and Crothers (2010) allude to, resilience portrays the strengths and coping resources that individuals possess and can be used to overcome tumultuous situations. Luthans, Avolio, Avey, and Norman (2007) further point out that extensive research has made efforts to associate resilience with improved performance of employees at the workplace.

According to the regression analysis, there is a relationship between optimism and creativity. A significant group of studies has also proved a correlation linking both optimism and improved performance among employees in the workplace (Youssef and Luthans, 2007). In organizational contexts, optimism is regarded as an important resource capacity of employees because their optimism to overcome challenging situations can contribute to a positive impact in terms of achieving defined goals of their respective organizations (Youssef and Luthans, 2007).

The effect of the new HR policies and techniques like gamification and its impact on the positive psychological capital. Therefore, organizations in Bahrain could nurture and put more focus on implementing new techniques to motivate the employees and increase their positive psychological capital for creativity to enhance the productivity of the organizations.

VI. LIMITATIONS AND FUTURE STUDIES

Gamification, in general, is one of the latest techniques used to influence the behavior of a person in general, as the concepts of gamification are closely related to motivation and encouragement, and since it has a clear and directly related effect on the human psyche, therefore, gamification at work is an emerging field in the practice of human resources.

There are some limitations to the research, including that the data were collected based on self-reports, which may present many biases (Podsakoff et al., 2003; Podsakoff et al., 2012). Therefore, we recommend in future studies to use more objective measurements and to delve deeper into the elements of the game used, which are represented in the achievements, badges obtained, and the like. Research can also start from the basis of game design (Mekler et al.,

2013), or elements that are applied in the course of work such as points, levels, badges, leaderboards, and character sheets (Cardador et al., 2017). As some studies have proven that different elements of gamification also have different effects, in terms of motivation (Sailer et al., 2017).

Another limitation is that the data in this study were collected from only one game and the results were generalized based on it. Thus, we recommend that future studies use many different games or applications so that the results can easily be generalized. However, the focus on Habiticia as a single tool used by employees across organizations came from the standpoint of deviating from the norm and out of the company's control by imposing certain or specific mechanisms as all employees whose results were measured were already using this application of their own free will and without any pressure from the administration. It is recommended to take this research further in terms of focusing on organizational behavior in Bahrain. This research can be implemented and taken further at a group and an organizational level since the performance and creativity of employees can be affected by the behavior of the employees. Other factors of creativity can be analyzed and studied in Bahrain to have a full view of the behavior of a Bahraini employee.

Additional studies should continue to investigate the purpose as well as the nature of activities that workers choose for gamification and compare them with results from other applications of gamification (Hamari and Kovisto, 2015; Suh et al., 2017) This should lead to an increased understanding of work activities appropriate to gamification. Also, it is recommended to research the same topic during a stable period and compare the results of both studies.

Practical implications

We have shown in this research the beneficial effects of gamification at work concerning the psychological capital of employees and their motives as well as their ability to be creative, which leads to increased productivity and efficiency in general. These findings can guide designers when considering both the emotional and informational components of work play and can provide recommendations for personalizing work gamification in terms of professional roles. Finally, this research has contributed to providing insights into the purpose of using action games. We have found indications that monitoring, self-regulation, use of reminders, and self-motivation are central reasons for people to play around with work-related tasks.

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