

GAMIFICATION LINKAGE IN HUMAN RESOURCE MANAGEMENT

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ABSTRACT

Gamification is one of the most prevalent and debatable issues in the current era, where the application of gamification in different organizational processes can be seen as a normal and common factor in firms. Human resource management practices are vital in organizations and even the problem of managing employee satisfaction and motivation has become a significant issue in organizations. To overcome this problem, the application of gamification can be undertaken in the human resource management procedure. In the present study, the identification of gamification in human resource management has been carried out according to previous research. The study has used thematic analysis. 47 research articles have been compiled on the study and with the use of the PRISMA model the selection of research papers is being undertaken. Consequently, the number selected is nine research articles. These works were discussed in depth to achieve the objectives of the study. According to the documents, gamification is helping to improve human resource management practices and helping to improve employee motivation to ensure that the process is carried out optimally. At the same time, the identification of implementation challenges has also been carried out according to the literature survey. Appropriate training and development actions for staff will ensure that recovery is successful in gamification implementations in organizations.

Keywords: *gamification, HRM, PRISMA, thematic analysis*

INTRODUCTION

Human Resource Management (HRM) can be identified as the vital resource among all organisations' resources. The empowerment of human resources is one of the main objectives of companies that have been achieved with gamification (Adeniji & Osibanjo, 2012). Gamification is the process of using actions related to game and fame in origination duties to make the work more attractive. It has been considered that employees' commitment, satisfaction, and motivation is very important to achieve the success of effectiveness and efficient actions in organizations (Armstrong & Landers, 2018). Therefore, it becomes essential to investigate how to allow the human resource to be motivated at work. Gamification may be a better method that can have both sides, positive and negative (Simpson and Jenkins, 2015). Thus, the research study has been carried out in order to understand gamification in HRM and to understand the challenges and recommendations that may arise for the correct implementation of gamification in HRM practices.

Problem Statement

Employee motivation is a serious problem in many organizations. At the same time, the least motivation is due to poor management of human resources and poor management of work practices in employees (Sarangi & Shah, 2015). Standardized work methods can sometimes demotivate and bore employees when maximum performance cannot be achieved. This has been recorded as a common problem in all organizations (Ferrell et al., 2016). This problem needed to be overcome with the possible applications and that is the responsibility of the human resources management department. Thus, applying the different methods to motivate

and cheer employees will be the most appropriate solution where addressing the problem is critical (Cardador et al., 2017).

Research Question

How organizations can link gamification to stimulate user behavior?

Research Objectives

The study's main objective is to identify how the HRM functions of organizations could be improved to change employee behavior through the use of gamification. The secondary objective is to identify the benefits and challenges of integrating gamification into organizational practices and analyze which areas of gamification can better suit the different needs of organizations.

LITERATURE REVIEW

Gamification

Gamification has risen to prominence as a trend in the commercial and marketing sectors in recent years, attracting academics, educators, and professionals from various disciplines. However, gamification is not a new idea; it has its origin in marketing initiatives such as point cards and rewards memberships, educational systems mainly at academic levels, grades and grades, and efficiency in the workplace (Nelson, 2012). The growth (or resurgence) of gamification is attributed to a convergence of variables, including cheaper technology, personal data monitoring, notable successes, and the ubiquity of the gaming medium (Deterding, 2012).

Gamification is a persuasion technique that aims to change user behavior by activating intrinsic motivations through game design features (Petkov et al., 2011). As a result, this method excludes game design, which can be broadly described as the conflict resolution process or artificial rule-based simulations (Deterding et al., 2011; McGonigal, 2011). Therefore, gamification must be weighed against contemporaries such as "serious games" and "games with a purpose." Serious games are associated with a specific learning objective (Simões et al., 2013). For example, IBM Innov8 2.0 is a game designed to introduce users to the benefits of business process management. "Games with a purpose" exemplify a method in which problems that information systems cannot adequately address are converted so that humans can solve them in a game-like way (Von Ahn, 2006). For example, ARTigo7 is a game created at the University of Munich. Two players compete to discover more labels to characterize images from the Art History Institute's digital collection than their opponent.

In contrast, gamification refers to the process of creating "gamified" service packages (Leimeister, 2012). These bundles include a core offering (a product, a service, or an information system) and an IT-based, gamified augmentation service for the core offering (Huotari & Hamari, 2012). The particular use goals for the core offer as specified by core office suppliers serve as the beginning point for developing gamified improving services. Such use goals, for example, might be developed from historical user behaviour research and could define how core offer suppliers want their core offer to be utilised in the future (Blohm & Leimeister, 2013). These goals are translated into suitable game design components, then combined

to create gamified enhancement services. By emulating a game-like experience, these boosting services hope to elicit individual user motivations for the main product, thus promoting its consumption (Huotari & Hamari, 2012). Additionally, combining the core offer with enhancing services necessitates the core offer's adaptation to the enhancing service.

Gamification can be introduced in numerous methods according to different scholars. There is no uniform concept of gamification understood in its entirety, which is why they believe that gamification uses components of fun and the development of recreation plans in environments that are not entertainment (Mollick & Werbach, 2015). The use of game factors and technologies in the organizational process in a significant way can be considered as what is being done in gamification (Kumar, 2013). Gamification is very good with things as they are. "However, focusing on the area of computer games, he argues that gamification" includes the use of the methodology and components of the scheme of computer games of scenarios that are not the same as fun (Seaborn & Fels, 2015).

Benefits of Gamification

Many academics have pointed out the benefits of gamification. Some of the advantages can be pointed out as the improvement of the productivity of the employees, the improvement of the motivation of the employees, the creativity activities are stimulating in the employees, the strengthening of the communication of the people and better results without errors are some of the advantages of gamification (Georgiou, et al., 2019; Armstrong, et al., 2016). Furthermore, fostering innovative skills and

increasing employee satisfaction can also be seen as the main advantages. In addition, the development of soft and hard skills and the development of corporate image can also be identified as advantages (Witt et al., 2011).

Challenges of Gamification

There are also challenges to implementing gamification. When gamification is more money-oriented, demotivation of employees can occur (Kim, 2018). This is a negative factor. At the same time, the initial cost of implementation is also very high. Understanding the costs that are in operations must have the proper understanding (Landers, 2019). Software and hardware needs and employee knowledge are also challenging factors. Training and developments are necessary to ensure that employees do not resist the use of gamification practices (Woźniak, 2015).

Gamification and HRM

Human resource management (HRM) is a critical management discipline. It is individuals and groups that have the greatest impact on achieving goals. HRM focuses on attracting and retaining valuable workers. Modern human resource management solutions are more dynamic and technologically sophisticated, with realistic computer images. All games have one characteristic: computer game players demonstrate their tenacity, perseverance and participation. In concept, the players' motivation could be transferred to the real world and used to solve real problems, even at work. In this way, gamification is emerging as a new management and marketing trend (Blštáková & Piwowar-Sulej, 2019).

Gamification is consistent with the idea of the Industrial Revolution 4.0 (also known as the Cyber Revolution). The adoption of new technologies affects people's attitudes and human resource management procedures (Piwowar-Sulej, 2018). Some HRM ideas align with the Industrial Revolution, such as e-HRM and HRM 4.0. In EHRM, strategies, policies and practices are implemented in companies through the deliberate and directed use of channels based on web technology (Ruel et al., 2006). HRM 4.0 refers to the digitization of all human resources operations (Blštáková & Piwowar-Sulej, 2019).

Gamification in the HRM Process

Gamification is primarily used in human resource management (HRM) sectors such as recruiting and selection, onboarding, training, generally referred to as employee motivators and corporate culture development. The recruitment and selection of applicants is the first area of human resource management where the trends of the fourth Industrial Revolution have been evidenced over a long period (Perinot, 2015).

Modern hiring technologies make it easy to cultivate a contemporary employer image. Gamification can be used to represent various elements of hiring in a company for potential candidates by immersing them in the business of convincing them to apply for or accept a job offer. As the Marriott hotel chain shows in their specially tailored “My Marriott Hotel” game, game-like assessments can be used within the selection processes to find the best candidates for job openings. Poland also has some interesting examples of gamification that are used in the recruitment process. The gamification examples provided by Joy, 2017; Wawer, 2015; indicate that

the implementation of specific game frameworks can contribute to a greater improvement in recruitment efficiency, measured mainly by the quantity and quality of applications received and their acquisition cost, as well as by a shorter recruitment process (Fitz-enzy, 2000).

Gamification can also significantly improve onboarding efficiency by motivating applicants to perform different tasks to receive incentives. Gamified training can motivate new hires to learn more during training, resulting in long-term benefits for both the individual and the company. Onboarding is inextricably linked to employee education. According to Pappas (2015) findings, gamification not only helps in the acquisition of knowledge and skills, but also helps students retain the material and save it in long-term memory for future use.

Gamification can be introduced into the HRM process, making the process more reliable and easier to handle. The most fundamental task of any human resources specialist is to supply and incorporate workers into the organization. They have to guarantee that they have champions over the association (Wanick & Bui, 2019). To do this, they must ensure that the applicant's skills fit well with the organization's needs and culture. When gamification is connected to the human resources procedure, it brings some advantages; the applicant completion procedure is substantially faster as it allows organizations to test particular skills such as time management, inventive and creative reasoning, etc. (Huotari and Hamari, 2017). Organizations must approach genuine diversions based on enrolment and determination uniquely in contrast to the genuine diversions approach to other management forms such as mastering, preparing and

improving. There is a part of the spread to the fun of the fun; Subsequently, an incredible security requirement arises to perform genuine recreations for enlistment purposes (Saha & Pandita, 2017).

RESEARCH METHODOLOGY

Research Philosophy

There are different research philosophies in the literature, such as positivism, interpretivism, and realism. The research philosophy of realism means that the assumptions in scientific approaches and the author's conclusions are providing the conclusions of the objective achievement (Hirschman, 1986; Tombs & Pugsley, 2020). Therefore, the realism approach is being used here.

Research Design

The systematic review is adopted in this study. It is imperative in the discussion of thematic analysis methods applied in current research activity. The review analyses all possible ways and reproduces the relevant factors to produce new insight into the problems and available situations (Agbo et al., 2019). The appropriate review that is being carried out based on previous research may be called a systematic review. This can be stated as a close writing method in which there are several steps in the process, as explained in the following figure (Munn et al., 2018).



Source: Author created

Figure 1: Systematic Review Process

Study Scope

The scope of the study can be identified here as the application of gamification on human resource management in companies. The study will provide a holistic view of the selected topic and the objectives have been discussed accordingly.

Research Process

The research process consists of the selection of cases on the relevant topic that has been selected here. The selection of research articles and published resources has been carried out using databases such as Wiley Online Library, Science Direct, and Emerald Insight. The articles that have been published on the topic of gamification in human resource management have been searched with the various keywords relevant to the factors.

At the same time, articles that are in the time span from 2010 to 2020 have been selected here for study analysis. The criteria in the data sources selection is provided in table 01.

Table 1: Selection criteria of the data sources

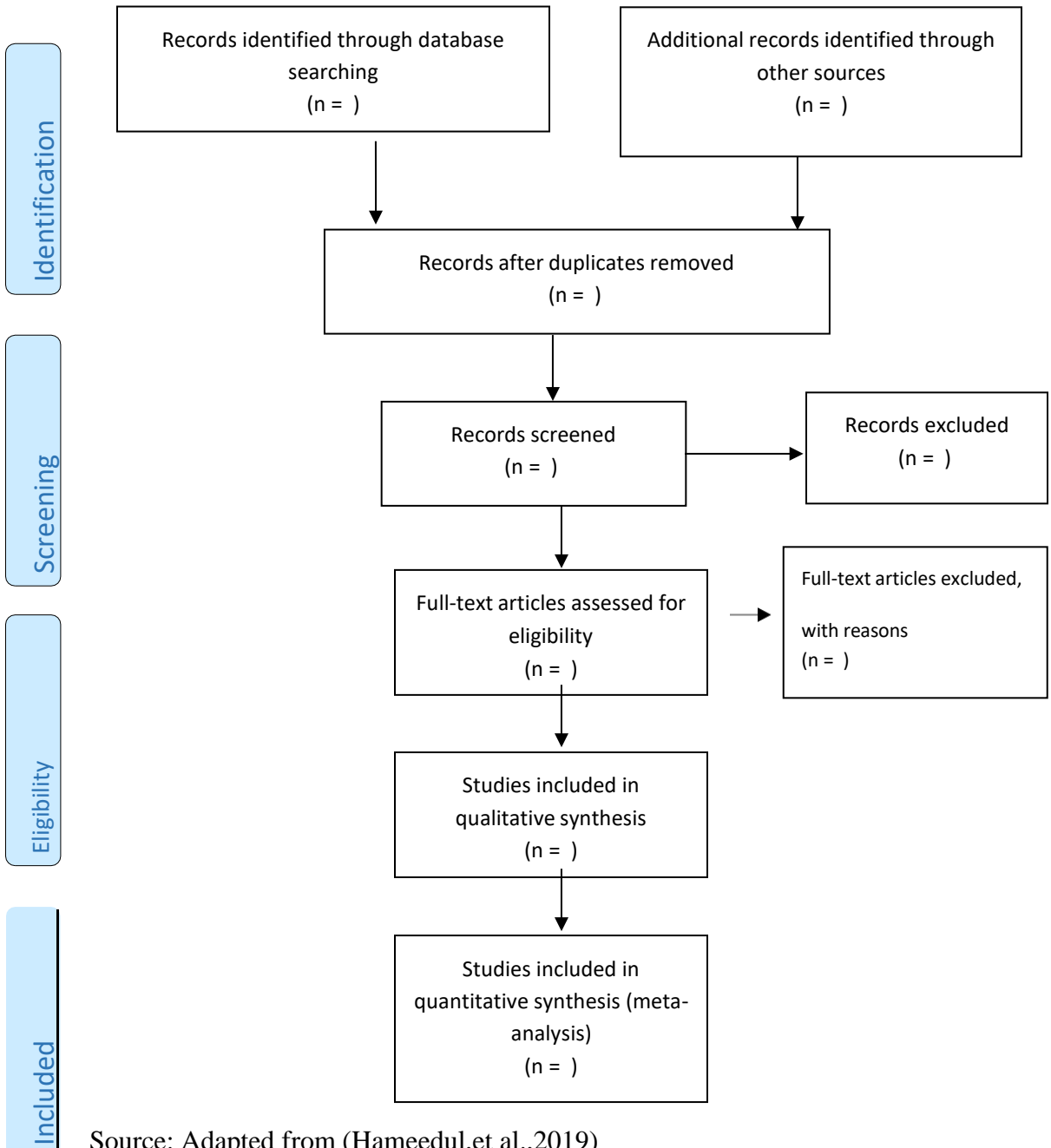
Criteria	Description
Database used in research article searching	Emerald insight Science Direct Wiley Online Library
Type of the sources	Academic journals
Key words used	Gamification Human Resource Management Gamified Human Resource Management
Search expanders	The papers have been examined in the year of 2010 – 2020
Search limiters	Only Peer-reviewed articles

Source: Author Created

PRISMA Method

In an evidence base research, the researcher must present the evidence to the readers and in research where previous literature is reviewed, the researcher must present a minimum number of evidence that is most relevant to the study and for that purpose, the PRISMA method can be used (Moher, 2009). PRISMA stands for Preferred Reporting Items for Systematic Reviews and Meta-analyses. It is a reporting method that can be used in systematic reviews. Rather than measuring and reviewing interventions, it focuses on reviewing goals (Moher, 2010). To develop the PRISMA method for any study, the PRISMA flow chart can be used. The PRISMA method uses the QUOROM guidelines to evaluate systematic reviews (Tricco, 2018). In the PRISMA method, the flowchart includes 27 items on the checklist (Tricco, 2018). The PRISMA flowchart process is presented as the “Figure 02” section.

PRISMA 2009 Flow Diagram



Source: Adapted from (Hameedul,et al.,2019)

Figure 2: PRISMA Flow Diagram

Quality Evaluation

The quality has been investigated according to the credibility of the data and the relevance of the data to the study. This is one of the best methods to verify the quality of the evaluation. Therefore, it is essential to have relevant and credible data.

List of Sources

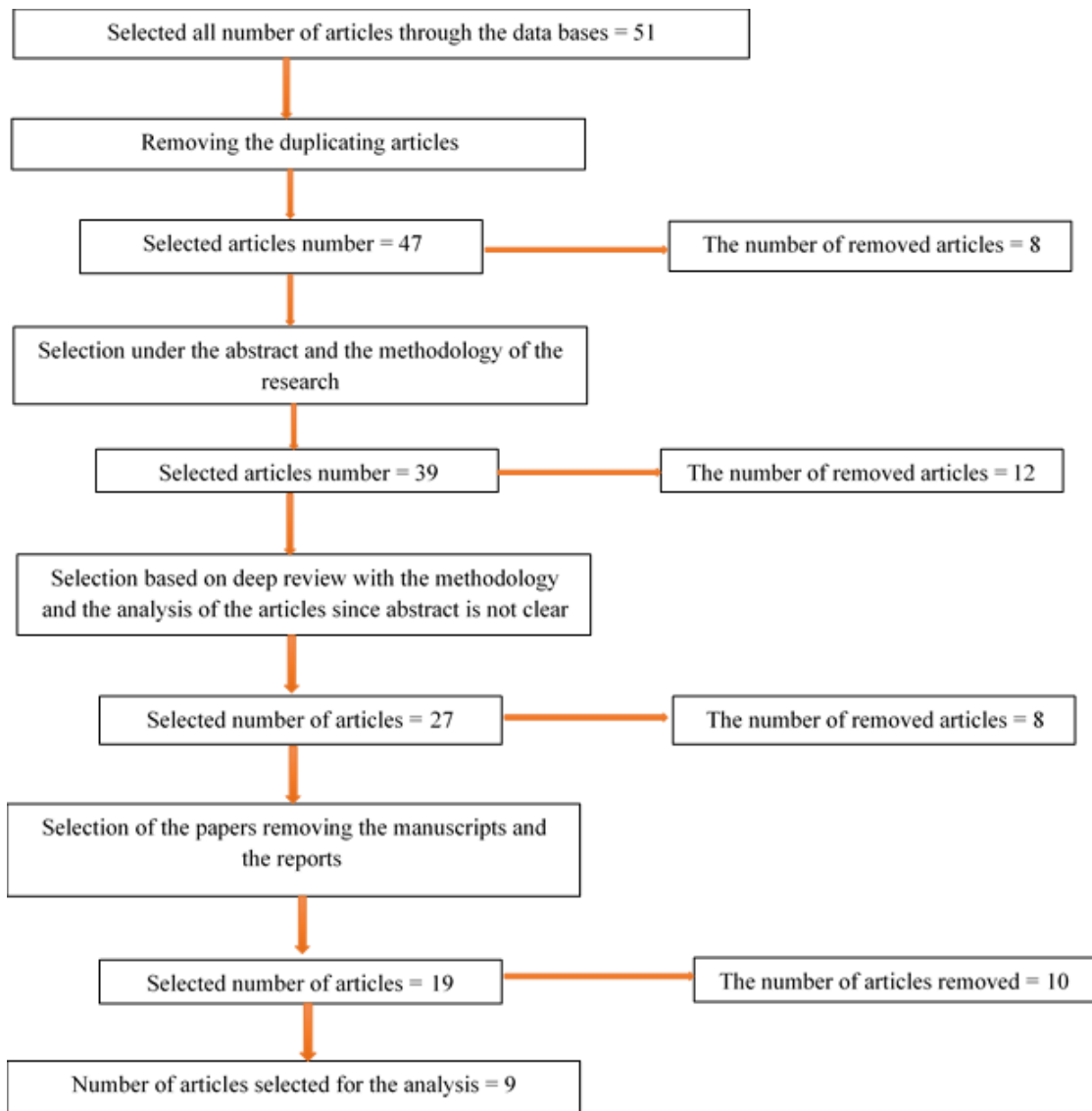
The sources used for the resources are well described using the PRISMA model and the following figure provides an overview of the model. The removal of research articles has been done for a reason and has been clearly explained in figure 3.

Descriptive

Descriptives are very important for understanding the summary of key findings in selected research articles. Figure 3 describes the selected articles with the author, year, title, methodology and findings.

Thematic Analysis

Among the famous analysis types, meta-analysis and thematic analysis are famous and here, thematic analysis has benefited. The selected research articles were analyzed in depth to achieve the articulated objectives.



Source: Adapted from (Moher, et al., 2015)

Figure 3: The excluded and the included articles

DISCUSSION OF FINDINGS

The Systematic Literature Review is explained in Table 2 and followed by the literature on how gamification can be linked to human resource management practices and its advantages and challenges.

Table 2: Systematic review

Num ber	Author and Year	Title of the Article	Methodology	Description in the Findings
1	(Ērgle & Ludviga, 2018)	Use of Gamification In Human Resource Management: Impact on Engagement and Satisfaction	Used data from CAWI interviews and number of respondents is 620. Structural. Equation Modelling (PLS-SEM) method with smartPLS software has been used	A positive relationship and influence have been found between gamification and employee job satisfaction, as well as no impact between gamification and employee engagement. The HR process responded positively to gamification where team building and internal communication showed better results.
2	(Wanick & Bui, 2019)	Gamification in Management: analysis and research directions	The systematic review of 203 papers has been done and the holistic view on the management practices and the gamification impacts has been identified in the management context	Many management areas such as marketing, logistics and supply chain, human resource management and healthcare have been considered here, where employee engagement and motivation has been considered along with training and development, which are having the positive impacts of gamification processes.
3	(Silic, et al., 2020)	The effects of a gamified human resource management system on job	With 398 workers from big and international businesses, a 12-month longitudinal research was utilised to examine the effects and	The results were explaining having significant influences for the application of gamification in HRM actions, where the notable increase in satisfaction and work engagement can be seen. The study suggested that the application of

		satisfaction and engagement	relationships of gamification on job satisfaction and engagement.	gamification will increase the work attitude and balance of employees.
4	(Ferrell, et al., 2016)	Gamification of Human Resource Processes	The key motivational theories and the holistic view on the application of the gamification in the first four stages of the HRM with respect to the different case studies is provided here	The results were explaining that the application of gamification in recruitment, selection, training and performance management is recorded to have positive reactions where the recommendations were made to apply the correct and adequate methodologies in the actions in the organization.
5	(Saha & Pandita, 2017)	Digitalizing human resources through gamification for employee engagement	The systematic review has been undertaken in order to have the holistic idea of the gamification application in HRM by the past literature	The results found that gamification is not only a modern tool but that it can also reduce the cost and time of the HR process and optimize actions in the process. The best HR process insights can be achieved with the joys at work that employees will be motivated to work for.
6	(Armstrong, et al., 2016)	Gamifying recruitment, selection, training, and performance management: Game-thinking in human resource management	A systematic review of the researches has been undertaken as the case study reviews where the gamification has been introduced to get a holistic idea	Implementing gamification in the HR process has been found to have positive impacts on many of the organizations, recommendations for future actions were provided with game thinking applications.

7	(Deterding, 2012)	Gamification: designing for motivation	The systematic review has been undertaken in order to have the holistic idea of gamification and its application for motivation	It summarizes the findings of a variety of theoretical and empirical investigations on gamification from a variety of angles. Integrate the results and compile a list of the fundamental components of gamified systems. The reward mechanisms of gamified systems are designed according to basic theories of motivation.
8	(Huotari & Hamari, 2012)	Defining gamification: a service marketing perspective	A systematic review of the researches has been undertaken as the case study reviews Theory, design, management of gamification.	A new definition of gamification was provided. Most gamification implementations were targeting marketing goals, which brought into the debate the idea that the customer / user is always the last producer of value. The overlap of objectives and methods of gamification and marketing was identified.
9	(Blštáková & Piwowski-Sulej, 2019)	Gamification as an Innovative Idea within Human Resources Management	Main research method used for gamification as an innovative instrument used in HRM is literature studies. A stand-alone review was used to provide an overview and synthesis	The results found that gamification as a new tool in HRM proved to be effective. Gamification is part of Industrial Revolution 4.0. Due to the lack of data on the use of gamification in human resource management, this article describes the idea, the areas where it is applied and the future objectives of the study.

Source: Authors created

The discussion can count on the evidence with the achievement of the objectives articulated in the study. The key objective was to identify the use of gamification and the benefits of gamification in Human Resource Management in organizations. This objective has been achieved by identifying the past literature in depth where human resources have been reported as the most important resource in companies (Ferrell et al., 2016). In addition, employee motivation, satisfaction and work commitment can be increased with gamification actions. At the same time, the productivity of companies with higher individual productivity of employees can also be achieved with gamification procedures in companies (Georgiou et al., 2019). Another advantage is identifying the best practices in the HR process that have been explained by many of the researchers and especially, the selection, recruitment, training and performance evaluation are being brought to the fore. Thus, it is clear that gamification provides many advantages in human resource management (Saha & Pandita, 2017).

Furthermore, the study focused on identifying the challenges of implementing gamification in human resource management practices. The main challenge that academics have identified is the misuse of gamification by decision-makers. This will lead to many of the downsides (Armstrong et al., 2016). The over-justification of gamification is also a challenge for human resource management processes and will lead to wrong actions (Edson et al., 2016). The application of gamification can ruin employee motivation if the application is based on money. Therefore, there needs to be a clear understanding on the part of the implementers. The cost of implementation (cost of software and hardware, training and equipment) is another challenge that many companies face and must overcome. The setup game needs further investigation before implementation, which is time-consuming and expensive (Ferrell et al., 2016). These challenges have been well understood by many of the researchers.

Additionally, the study identified recommendations for implementing gamification in human resource management practices. Most researchers have provided recommendations to overcome implementation challenges that follow this (Armstrong et al., 2016). For example, detailed and descriptive research is vital before initiating gamification actions in companies, which will lead to fewer errors (Mollick & Werbach, 2015). Another recommendation is the training sessions for the respective employees and decision-makers

on gamification applications. The investment and return plan must be clear and error-free, which is another way to overcome challenges and successfully implement gamification practices (Silic et al., 2020). At the same time, many academics have pointed out that hiring experienced staff in the implementation process will be beneficial for companies to overcome many obstacles.

CONCLUSION

The study has been carried out in order to identify gamification in human resource management practices in organizations. The systematic review has been carried out here where the selection of past literature and in-depth research has allowed the study objectives to be achieved. At the same time, the analysis has shown that gamification is widely used in HRM for various employee developments and the organization. In this sense, the challenges have also been identified and their overcoming is vital. Thus, recommendations have been identified to overcome the challenges.

Furthermore, this study demonstrates how contemporary human resource management is defined through the use of gamification. This involves using game mechanics to solve real-world workplace problems. Gamification in HRM was found not to be a very popular topic in high-impact scholarly publications. None of the articles constitutes quantitative research in the field of gamification in human resource management. It is worth emphasizing that gamification, like any other HR approach, must be applied with care. The game setting must be well considered, the technology must be sufficiently developed, and workers must not feel overloaded with excessive incentives. In addition, special attention should be paid when designing a system that incorporates gamification features. Finally, the system must be carefully tested and validated; when combined with the characteristics of contemporary technology, any mistake can result in an unfavourable reputation that quickly spreads among recipients.

Gamification has gained popularity among young people. Studies have highlighted the importance of creativity, flexibility, and a positive work environment as necessary prerequisites for successful play methods in the business environment. The notion of the game allows for multivariance in the formulation of the most rational choices and their implementation. The study clearly explains that gamification increases employee satisfaction, motivation and productivity alongside efficient and effective entrepreneurship. Therefore, proper training and development and awareness actions are significant and necessary for employees to ensure that the proper use of gamification is taking place.

REFERENCES

- Adeniji, A.A. and Osibanjo, A.O., 2012, 'Human resource management: theory and practice'. *Pumark Nigeria Limited*.
- Agbo, C.C., Mahmoud, Q.H. and Eklund, J.M., 2019, 'Blockchain technology in healthcare: a systematic review'. *Healthcare*, Vol. 7, No. 2, pp 56.
- Armstrong, M.B. and Landers, R.N., 2018, 'Gamification of employee training and development'. *International Journal of Training and Development*, Vol 22, No 2, pp.162-169.
- Armstrong, M.B., Ferrell, J.Z., Collmus, A.B. and Landers, R.N., 2016, 'Correcting misconceptions about gamification of assessment: More than SJTs and badges'. *Industrial and Organizational Psychology*, Vol 9, No 3, pp.671-677.
- Armstrong, M.B., Landers, R.N. and Collmus, A.B., 2016, 'Gamifying recruitment, selection, training, and performance management: Game-thinking in human resource management'. *Emerging research and trends in gamification*, pp. 140-165
- Blohm, I., Leimeister, J.M. and Krcmar, H., 2013, 'Crowdsourcing: how to benefit from (too) many great ideas'. *MIS Quarterly Executive*, Vol 12, No 4, pp.199-211.
- Blštáková, J. and Piwowar-Sulej, K., 2019, 'Gamification as an innovative idea within human resources management'.

- Cardador, M.T., Northcraft, G.B. and Whicker, J., 2017, 'A theory of work gamification: Something old, something new, something borrowed, something cool?'. *Human Resource Management Review*, Vol 27, No 2, pp.353-365.
- Deterding, S., 2012, 'Gamification: designing for motivation'. *Interactions*, Vol 19 No 4, pp.14-17.
- Deterding, S., 2019, 'Gamification in management: Between choice architecture and humanistic design'. *Journal of Management Inquiry*, Vol 28 No 2, pp.131-136.
- Deterding, S., Dixon, D., Khaled, R. and Nacke, L., 2011, 'Game design elements to gamefulness: defining "gamification"'. *Proceedings of the 15th international academic MindTrek conference: Envisioning future media environments*, pp. 9-15.
- Edson, M.C., Henning, P.B. and Sankaran, S. eds., 2016, *A guide to systems research: Philosophy, processes and practice*, Vol. 10. Springer.
- Ērgle, D. and Ludviga, I., 2018, 'Use of gamification in human resource management: impact on engagement and satisfaction'. *10th International Scientific Conference, Business and Management 2018*.
- Farhangi, S., 2012, 'Reality is broken to be rebuilt: how a gamer's mindset can show science educators new ways of contribution to science and world?'. *Cultural Studies of Science Education*, Vol 7, No 4, pp.1037–1044
- Ferrell, J.Z., Carpenter, J.E., Vaughn, E.D., Dudley, N.M. and Goodman, S.A., 2016, 'Gamification of human resource processes.' *Emerging research and trends in gamification*, pp. 108-139. IGI Global.
- Fitz-Enz, J., 2000, *The ROI of human capital: Measuring the economic value of employee performance*. AMACOM Div American Mgmt Assn.
- Georgiou, K., Gouras, A. and Nikolaou, I., 2019, 'Gamification in employee selection: The development of a gamified assessment'. *International journal of selection and assessment*, Vol 27, No 2, pp.91-103.

- Haq, H., Khan, R.A. and Yasmin, R., 2019, 'Healthcare needs of the muslim patient community in the undergraduate medical curriculum—Are we there?'. *Pakistan journal of medical sciences*, Vol 35, No 3, p.836.
- Hirschman, E.C., 1986, Humanistic inquiry in marketing research: philosophy, method, and criteria. *Journal of marketing Research*, Vol 23 No 3, pp.237-249.
- Huotari, K. and Hamari, J., 2012, October. 'Defining gamification: a service marketing perspective'. *Proceeding of the 16th international academic MindTrek conference*, pp. 17-22.
- Huotari, K. and Hamari, J., 2017, 'A definition for gamification: anchoring gamification in the service marketing literature'. *Electronic Markets*, Vol 27, No1, pp.21-31.
- Huub, J.M., Ruel, T.V. and Velde, B.M., 2006, 'The contribution of e-HRM to HRM effectiveness'. *Employee Relations*, Vol 29, No 3, pp.280-291.
- Joy, M.M. and Assistant, J., 2017, 'An investigation into gamification as a tool for enhancing recruitment process'. *Ideal Research*, Vol 3, No 1, pp.56-65.
- Kim, T.W., 2018, 'Gamification of labor and the charge of exploitation'. *Journal of business ethics*, Vol 152, No 1, pp.27-39.
- Kramar, R., 2014, 'Beyond strategic human resource management: is sustainable human resource management the next approach?'. *The international journal of human resource management*, Vol 25, No 8, pp.1069-1089.
- Kumar, J., 2013, July. 'Gamification at work: Designing engaging business software'. *International conference of design, user experience, and usability*, Springer, Berlin, Heidelberg, pp. 528-537.
- Landers, R.N., 2019, 'Gamification misunderstood: How badly executed and rhetorical gamification obscures its transformative potential'. *Journal of Management inquiry*, Vol 28, No 2, pp.137-140.
- Leimeister, J.M., 2012, *Dienstleistungsengineering und-management*. Berlin, Heidelberg: Springer Berlin Heidelberg.

- Liberati, A., Altman, D.G., Tetzlaff, J., Mulrow, C., Gøtzsche, P.C., Ioannidis, J.P., Clarke, M., Devereaux, P.J., Kleijnen, J. and Moher, D., 2009, 'The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: explanation and elaboration'. *Journal of clinical epidemiology*, Vol 62, No 10, pp.1-34.
- Marei, H.F., Donkers, J., Al-Eraky, M.M. and van Merriënboer, J.J., 2017, 'The effectiveness of sequencing virtual patients with lectures in a deductive or inductive learning approach'. *Medical teacher*, Vol 39, No12, pp.1268-1274.
- McGonigal, J., 2011, *Reality is broken: Why games make us better and how they can change the world*. Penguin.
- Moher, D., Shamseer, L., Clarke, M., Ghersi, D., Liberati, A., Petticrew, M., Shekelle, P. and Stewart, L.A., 2015, 'Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement'. *Systematic reviews*, Vol 4, No 1, pp.1-9.
- Mollick, E. and Werbach, K., 2015, Gamification and the enterprise. *The gameful world: Approaches, issues, applications*, Vol 439.
- Munn, Z., Peters, M.D., Stern, C., Tufanaru, C., McArthur, A. and Aromataris, E., 2018, 'Systematic review or scoping review? Guidance for authors when choosing between a systematic or scoping review approach'. *BMC medical research methodology*, Vol 18, No 1, pp.1-7.
- Nelson, M.J., 2012, October, 'Soviet and American precursors to the gamification of work'. *Proceeding of the 16th international academic MindTrek conference*, pp. 23-26.
- Perinot, C., 2016, *Gamification in the field of human resource management. Gamified solutions for recruitment*, Bachelor's thesis, Università Ca'Foscari Venezia.
- Petkov, P., Köbler, F., Foth, M., Medland, R. and Krcmar, H., 2011, 'Engaging energy saving through motivation-specific social comparison'. In *CHI'11 Extended Abstracts on Human Factors in Computing Systems*, pp. 1945-1950.

- Piwowar-Sulej, K., 2018, *Human Resources Management in the Industrial Revolution 4.0: General and Polish Perspective*.
- Saha, D.D., 2017, 'Digitalizing human resources through gamification for employee engagement'. *Asia Pacific Journal*.
- Sarangi, S. and Shah, S., 2015, 'Individuals, teams and organizations score with gamification: Tool can help to motivate employees and boost performance'. *Human Resource Management International Digest*.
- Seaborn, K. and Fels, D.I., 2015, 'Gamification in theory and action: A survey'. *International Journal of human-computer studies*, Vol 74, pp.14-31.
- Silic, M., Marzi, G., Caputo, A. and Bal, P.M., 2020, 'The effects of a gamified human resource management system on job satisfaction and engagement'. *Human Resource Management Journal*, Vol 30, No 2, pp.260-277.
- Simões, J., Redondo, R.D. and Vilas, A.F., 2013, 'A social gamification framework for a K-6 learning platform'. *Computers in Human Behavior*, Vol 29 No 2, pp.345-353.
- Simpson, P. and Jenkins, P., 2015, *Gamification and Human Resources: an overview*. Brighton: Brighton Business School.
- Sohrabi, C., Franchi, T., Mathew, G., Kerwan, A., Nicola, M., Griffin, M., Agha, M. and Agha, R., 2021, 'PRISMA 2020 statement: What's new and the importance of reporting guidelines'. *International Journal of Surgery*, Vol 88
- Tombs, M. and Pugsley, L., 2020, 'Understand Research Philosophies and Paradigms in Medical Education'. *How To Series*.
- Tricco, A.C., Lillie, E., Zarin, W., O'Brien, K.K., Colquhoun, H., Levac, D., Moher, D., Peters, M.D., Horsley, T., Weeks, L. and Hempel, S., 2018, 'PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation'. *Annals of internal medicine*, Vol 169, No 7, pp.467-473.
- Vivek, R. and Nanthagopan, Y., 2020, 'Gamification in Human Resource Management'. *Journal of HRM Perspectives*, Vol 5, No 1, pp.44.

- Von Ahn, L., 2006. 'Games with a purpose'. *Computer*, Vol 39, No 6, pp.92-94.
- Wanick, V. and Bui, H., 2019, 'Gamification in Management: a systematic review and research directions'. *International Journal of Serious Games*, Vol 6, No 2, pp.57-74.
- Wawer, M., 2015, Grywalizacja–nowy trend w rekrutacji kandydatów. *Studia i Prace WNEiZ US*, Vol 39, No 3, pp.219-230.
- Witt, M., Scheiner, C.W. and Robra-Bissantz, S., 2011, 'Gamification of online idea competitions: insights from an explorative case'. *GI-Jahrestagung*, pp. 392.
- Woźniak, J., 2015, 'The use of gamification at different levels of e-recruitment'. *Management Dynamics in the Knowledge Economy*, Vol 3, No 2, pp.257-278.
- Wright, P.M. and McMahan, G.C., 2011, 'Exploring human capital: putting 'human' back into strategic human resource management'. *Human resource management journal*, Vol 21, No 2, pp.93-104.