THE SIGNIFICANCE OF AFFORDANCES APPROACH IN GAMIFICATION RESEARCH FOR HUMAN RESOURCE MANAGEMENT

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Abstract

The contemporary organizational work landscape is becoming more and more digital and experiencing changes in workforce and work management. Productivity, flexibility and collaboration become the essence of the workplace. This leads to the consequence that motivation plays a pivotal role in the success and efficiency of many organizations. Moreover, organizations are facing challenges in how to inspire, energize and keep employees motivated. In response to this challenge, gamification, which is well-known as the application of game elements and principles for non-game purposes in a business context, emerges as a strategic instrument, to incentivize and motivate employees toward predetermined goals, objectives and behaviours. The goal of gamification applications is not only to enrich the usual work environment with game elements but also to create affordances that would serve as stimuli to promote employee motivation by satisfying psychological needs and encouraging employees to achieve goals. Hence, successful gamification application experiences in organizations have led to the fact that now gamification is one of the most common motivation tools in contemporary modern organisations. This study aims to explore the importance and relevance of the affordances approach in gamification research for Human Resource Management (HRM) as well as its implications in organisational contexts. To achieve this aim, the databases of Web of Science, Wiley online library, Scopus, and EBSCO host were searched for relevant articles for this systematic literature review. It includes 35 articles with empirical results, relevant to the field of business and management. This research focuses on peer-reviewed studies published in the English language from 2015 to 2023. Methods used for presenting and synthesizing results included conducting a systematic literature review based on PRISMA reporting guidelines. Furthermore, the systematic literature review was conducted using the digital qualitative data analysis tool MaxQDA and Mendeley reference manager for importing bibliographic data. For the contribution of the field, themes related to affordances theory have been identified and the findings have been structured to demonstrate the interrelationships between these concepts and their relevance in the HRM context. This study reveals that affordances can vary depending on the environment and can be influenced by social dynamics, contextual factors, organizational practices, or individual perceptions. The comparison of the studies allowed the identification of research gaps and areas for future research on gamification in HRM. Furthermore, the review emphasizes the significance of the affordances approach in understanding how gamification can influence employee psychological and behavioural outcomes in HRM contexts.

KEY WORDS: gamification, affordances approach, employee experience, HRM

JEL classification: M12, M54, O15

Introduction

The contemporary organisational work landscape is becoming increasingly digital and experiencing rapid evolution and dynamic transformation. HRM practices are changing significantly through the lens of technology: E-HRM and self-service portals, user-friendly interfaces, personalized learning platforms, and mobile applications provide employees with easy access to HR services and resources. In response to these changes, gamification emerges as a strategic instrument, leveraging game elements within non-game contexts to incentivize employees toward predetermined objectives, behaviours, or initiatives within the corporate setting.

Researchers' interest in the application of gamification in work contexts is evident in studies exploring gamification potential, opportunities and challenges (Morschheuser and Hamari 2019), development of gamified assessment for employee recruitment and selection (Georgiou et al. 2019; Georgiou 2021), research on employee engagement (Hammedi et al. 2021, Gupta et al. 2021; Girdauskiene et al. 2022), the relationship between gamification and innovation (Patricio et al. 2018), gig-workers motivation and engagement (Pereira et al. 2022; Behl et al. 2022), employee creativity (Ikhide et al. 2022), gamification effectiveness in crowdsourcing (Morschheuser et al. 2017), motivation (Liu et al., 2018;

Herranz et al. 2019; Miri and Macke 2021), gamification ethics and legitimisation in HRM (Kim 2018; Butler and Spoelstra 2024), to name a few. While gamification is widely used in organisations, it is explored in different fields of science but in HRM, it is less researched (Koivisto and Hamari 2019; Hammedi et al. 2021; Ikhide et al. 2022). Moreover, current studies have shown that gamification outcomes are highly context-dependent and user-dependent (Patricio et al. 2022; Bitrian et al. 2023; Chang et al. 2023). Furthermore, these research results are sometimes contradictory. Thus, further research in diverse contexts and business sectors is needed (Patricio et al. 2022; Wibisono et al. 2023).

A general overview of gamification studies reveals that the researchers are exploring gamification by selecting certain practical gamification design mechanisms (elements, mechanics etc.) or analysing gamification in terms of affordances. The affordances approach takes a research focus on the interaction between employees and gamification. Although the analysis of gamification research shows that the affordances approach is significantly less used in HRM, recent workplace gamification research shows the increasing popularity of this approach. Theoretical conceptual papers on the gamification of affordances approach in organisational contexts include gamification value in production and logistics (Warmelink et al. 2020), and gamification

affordance for creativity (Ikhide et al. 2022). Empirical studies include gamification contribution to knowledge management Suh and Wagner (2017), and engagement (Hammedi et al. 2021) but there are too few to see the big picture. In addition, researchers focusing on gamification affordances used the term motivational affordances, viewing them as a distinct type of gamification affordances linked to motivational needs (Huotari and Hamari 2017; Suh and Wagner 2017; Warmelink et al. 2020).

The embracing of the affordance approach to gamification studies in HRM helps improve insights into how gamification can be applied to enhance employee engagement, motivation, and performance by focusing on the interaction between employees and gamified environments, emphasising psychological outcomes and tailored experiences. There was an apparent contradiction in the empirical results of the existing studies. Researchers were discussing that gamification outcomes are highly context-dependent, so the possibility of focusing more on the gamification-employee interaction using the affordances approach may be an excellent opportunity to gain further insight into the phenomenon of gamification. Moreover, this can lead to an improved understanding of how gamification affects different individual, collective or organisational needs in the HRM context.

Although literature reviews on gamification in HRM have been conducted Mohanty and Christopher (2024), they have not highlighted and discussed the representation and importance of the affordances approach. Furthermore, it is not clear how the affordances approach is more advantageous than the game elements or mechanics approach to gamification in HRM. Also, the considerations behind the choice of this approach are vague. To improve understanding and application, more comprehensive reviews are needed to identify the potential of this approach in gamification HRM research and to identify directions for further studies. A literature review is needed to determine the prevalence, research specificities and progress of the affordances approach for researchers and practitioners to have a broader perspective in HRM. Thus, it is important to explore what is already known about the affordance approach in gamification in HRM and its potential in future studies. To answer this objective, the following research questions are raised:

1. What are the arguments for using the affordance approach in studying gamification in HRM contexts?

2. What theories and models are used to explore the affordances of gamification in HRM?

3. What is known about how gamification motivates looking through the lenses of affordances in the field of HRM?

The review's findings highlight areas where research knowledge is well-established, identify gaps requiring further investigation, and suggest future research directions to advance understanding of the topic.

Background of the study

Gamification

Gamification is "the enhancement of the context in which it is applied through the gamification to achieve greater overall value" (Huotari and Hamari 2012, p. 19).

In addition, this definition is based on a human-centred approach that emphasizes prioritizing the needs, desires, and capabilities of employees to create value. The use of gamification in the management of organisations can work on two levels: interacting with the system, influencing employees, as well as managing data, and learning from the results of the interaction (Wanick and Bui 2019). Gamification can contribute to data collection, and governance, and thus support data-driven decision-making (Wanick and Bui 2019). Also, gamification is considered a method that makes work-related tasks more enjoyable and generates access to work-related performance information (Cardador et al. 2017, Gerdenitsch et al. 2020). Moreover, the goals of gamification in organisations are to encourage employee participation in activities and to increase the added value experienced by employees through the use of a specific system or tool (Huotari and Hamari 2017).

Gamification in the organisation is applied in many different ways and for different purposes, which allows it to have very different outcomes. Gamification solutions may be individual, but some of them are essentially social. Moreover, employees work in teams that unite them with common goals and joint efforts to achieve them, so gamification in the work environment rarely works as a solution affecting only at individual level. However, in existing studies, researchers have focused on assessing individuals' motives and actions to explain how to apply the appropriate gamification elements depending on the desired effect in a given context (Hamza et al. 2022).

Despite its popularity, gamification in other fields, such as marketing or education, is significantly more studied by researchers. Also, the analysis of scientific publications showed that there are studies based on the affordances approach in the HRM field (Wibisono et al. 2023, Ligorio et al. 2023, Benitez et al. 2022, Waizenegger et al. 2020, Holzer et al. 2020). These authors referred to the same widely used definitions of gamification which were primarily formulated in computing systems, business, and marketing fields (Deterding 2011; Werbach and Hunter 2012; Huotari and Hamari 2017). This suggests that the definitions are widespread in gamification studies, but are not specifically tailored to the characteristics of the HRM context. Also, there is no single definition which is used by researchers who follow the affordances approach.

Affordances Approach in Gamification

Gamification was researched based on two frameworks: game elements and affordances approach. The game elements or mechanics approach involves a choice where research is based on specific game elements or sets of game elements within a specific taxonomy. The affordance approach is more focused on the interaction between the employee and the gamified environment and the psychological outcomes arising from this interaction. To strengthen comprehension of the psychological impact of gamification, it is vitally important to study how individual game design elements influence motivation (Deterding 2011). This examination requires exploring the concept of affordance, which refers to the characteristics

of an object determining its capacity to fulfil and facilitate motivational requirements (Mekler et al. 2017).

The term gamification affordances refers to the specific features or characteristics of gamified systems that provide opportunities for motivation, engagement, and behaviour change (Xi and Hamari 2019). They can include various game-like elements such as points, rewards, leaderboards, badges, levels, progress tracking, narrative, clear goals, challenges, feedback and feedback loops (Hamari et al. 2014; Xi and Hamari 2019). Furthermore, affordances are intended to provide employees with opportunities and cues for action, enabling them to interact with the system or activity in a meaningful and engaging way (Treiblmaier and Putz 2020). Nevertheless, they are designed to tap into intrinsic motivation, enhance employee experience, and promote desired behaviours (Xi and Hamari 2019). The affordances are designed to enhance the employee experience and encourage desired behaviours (Hamari et al. 2014).

By leveraging these affordances effectively, gamification can create a more immersive and enjoyable experience for employees, leading to increased motivation, participation, and achievement (Xi and Hamari 2019). The effectiveness of gamification affordances can vary depending on the context in which they are implemented and the motivational needs of the employee (Hamari et al. 2014, Treiblmaier and Putz 2020). During the interaction of gamification and employees, possibilities for different actions, such as rewards, competition, altruism, and self-expression, can occur, supporting the satisfaction of employees' psychological needs like autonomy, competence, and relatedness (Patricio et al. 2022).

The affordance approach in gamification focuses on the interaction between employees and gamified environments, emphasizing the psychological outcomes of these interactions. It contrasts with the game elements or mechanics approach, which focuses on the game design components. Despite the recognized potential of gamification in HRM, there remains a research gap in understanding its full impact from the affordance perspective. Moreover, current studies often focus on individual motives and game elements without fully exploring the broader organisational context and the social and cultural dimensions of work environments that could benefit from an affordance approach.

Methodology

The research methodology consisted of a systematic literature review based on the PRISMA reporting guidelines (Fig. 1), which are renowned for their ability to produce reliable and unbiased results. The databases searched were Web of Science, Wiley online library, Scopus and EBSCO host. These databases were chosen to find a maximum amount of relevant articles to this systematic literature review. Also, these databases offer one of the greatest availability of studies in the field of management that address the application of gamification in the work environment. The search strategy aimed to collect relevant articles on the impact of gamification on HRM. The selection criteria were: relevance to the field of business and management, English language, peer-reviewed journal status, comprehensive articles with

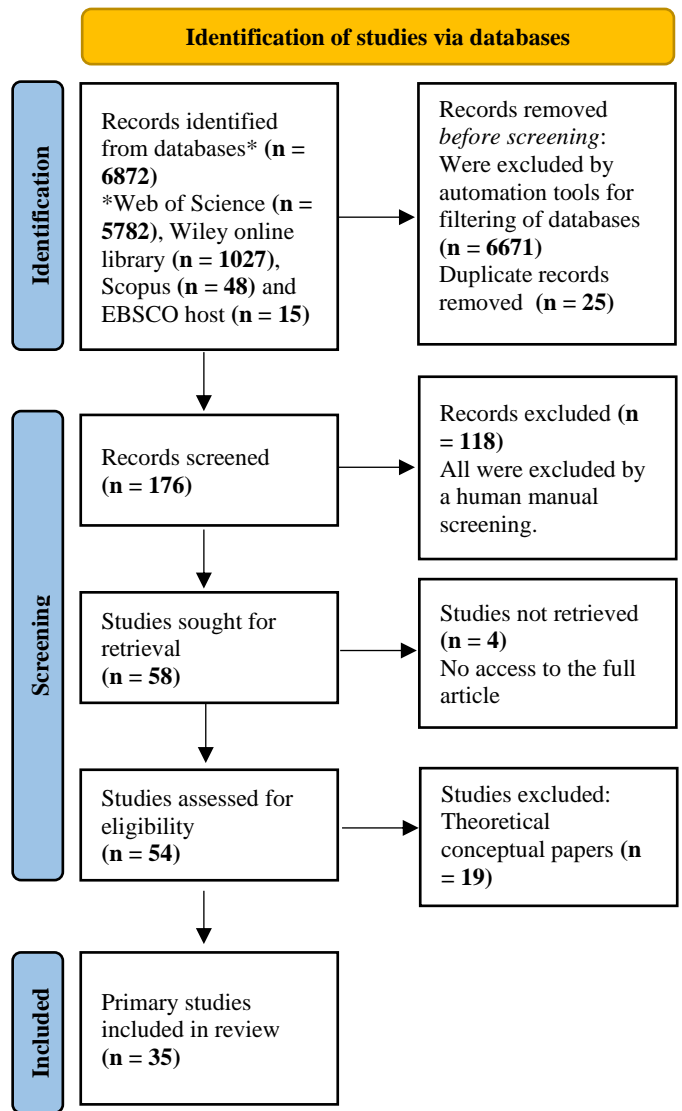empirical results, primary literature and focus on gamification effects.

Fig. 1. Study selection procedure
Source: compiled by the authors

The primary search resulted in a set of 6872 articles across the four chosen databases. In the first step, after applying the above criteria, which were available as filtering tools in the database, the volume of articles decreased to 201. In the second step, duplicate records were removed before screening. In the third step, the titles, abstracts and keywords were manually reviewed (also after applying the above criteria). 67 % of articles were excluded in this step because the subject area was out of HRM. Most often, papers were rejected because they examined student teams in a gamified learning environment. In the fourth step, the full text was manually reviewed. Few article's sources do not have access to the full article. At last, 19 articles were excluded because they were theoretical conceptual papers without empirical results. As a result, the final pool of 35 articles remained for the current literature review. Articles were selected from the period 2015-2023 and analysed using the MaxQDA.

Results

What are the arguments for using the affordance approach in studying gamification in HRM contexts?

The analysis showed that the realisation of user-centred design is grounded on the fact that gamification satisfies basic psychological needs (autonomy, competence and relatedness), based on the Self-Determination Theory (SDT) (Behl et al. 2021; Patricio et al. 2022). By fulfilling the needs, gamification motivates amployee to engage in gameful experiences (Behl et al. 2021). Human motivators are integrated into user-centred design principles, resulting in a user-focused experience (Patricio et al. 2022). It might be hard to ignore the importance of meeting internal psychological needs to keep the employee as a core in the gamified HRM. Thus, the employee rarely acts as an isolated user when gamification is applied at the organisational level. There are influencing aspects of power, norms, roles, culture, and working practices (Wang et al. 2023). In other words, there are tangible norms that affect how employees act in response to game elements, which is not so relevant in the case of a single user.

An analysis of the definitions indicated that gamification in HRM is reactive, with employees responding to game elements, mechanics, features, and techniques. Gamification aims to create experience, response, and effectiveness by fostering engagement and enjoyment through game-like processes. To ensure a user-centred approach in HRM through gamification it is crucial to consider both the fulfilment of psychological needs and the influence of organisational norms and practices when implementing gamification in HRM where the affordances approach can be useful.

The analysis of the papers revealed that gamification in HRM has been used from various perspectives in the areas of employee behavioural indicators, organisational development, recruitment and selection, employee training and development, employee relationships, types of employees, and organisational image (Fig. 2).
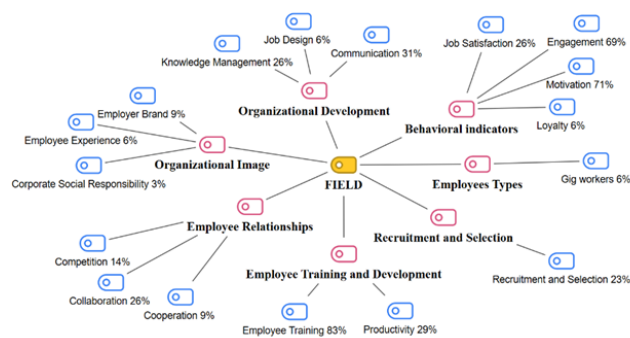

Fig. 2. Overview of studied gamification application contexts in the HRM field
Source: compiled by the authors

The literature analysis showed that gamification is mostly studied in the fields of training (83%), motivation (71%) and engagement (69%). Regardless of the fact that user-centred design is a guiding principle in gamification that focuses on organising the gamification design process

to meet the needs and expectations of employees (Krath et al. 2021) and ensure the necessary elements to create an engaging and effective gamified experience for the employee (Patricio et al. 2022), the present literature analysis showed that employee experience (Behl et al. 2021; Wibisono et al. 2023; Bizzi 2023) is the newly explored contexts in the HRM field.

An analysis of the contexts of the gamification studies showed that the affordance approach was chosen to research engagement, basic need satisfaction and enjoyment (Wibisono et al. 2023), sustainable behaviour (Ligorio et al. 2023), employee performance and motivation (Benitez et al. 2022), team collaboration (Waizenegger et al. 2020), knowledge sharing and motivation (Holzer et al. 2020).Scholars who take the affordance approach mentioned some arguments as to why this approach is appropriate for studying gamification in the context of organisations. The synthesized argument for using the affordance approach to research gamification in HRM is provided in Fig. 3.
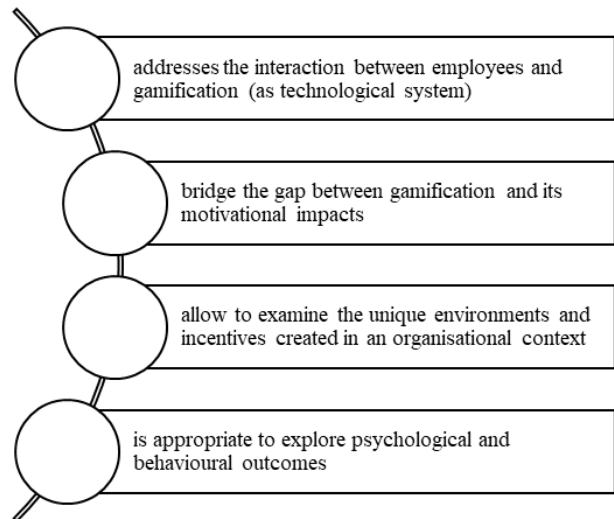

Fig. 3. Argument for using the affordance approach to research gamification in HRM
Source: compiled by the authors

First, the gamification phenomenon is deeply intertwined with technology and human interaction. The affordance approach is a useful way to understand how employees interact with gamification because it focuses on the opportunities for action that gamification provides and employees' commitment to these actions. According to Waizenegger et al. (2020), the affordance approach is useful for exploring the behaviours associated with IT objects and goal-oriented actors within workplace conditions (Waizenegger et al. 2020). Furthermore, the affordance approach is useful for examining previously unrecognized roles of technology and exploring how the affordances of achieving workplace goals have shifted to a new set of affordances to achieve the same goals (Waizenegger et al. 2020). Second, Wibisono et al. (2023) argued that previous studies have shown that game design elements utilize specific game design patterns and motivational affordances to create an environment that fosters pleasurable and engaging experiences. Third, this approach allows scholars to examine the unique environments and incentives created in an organisational

context. According to Benitez et al. (2022), this approach effectively highlights the unique affordances that make it an ideal resource for supporting and enabling gamification activities in an organisational context. Moreover, previous research revealed that the affordance approach is useful for exploring the behaviours and outcomes related to gamification in an organisational context (Wibisono et al. 2023). For example, gamification affordances support psychological ownership and behaviour (Ligorio et al. 2023). Still, previous studies have found a lack of strong empirical evidence and conclusive findings in this area in an organisational context (Holzer et al. 2020; Wibisono et al. 2023).

In addition to those already mentioned, there are further arguments. The use of gamification in a work context is unique in that the employee may feel incentivised, pressured or forced to participate (Hammedi et al. 2021). Concerns have been raised about employee exploitation by applying gamification (Kim and Werbach 2016; Kim 2018) and considerations of the ethical ambivalence of gamification in the workplace (Butler et al. 2024). The various negative effects associated with loss of employee autonomy, increased employer control, and reduced meaningfulness in performance can undermine employee well-being (Kim and Werbach 2016; Kim 2018; Butler et al. 2024). These considerations seem reasonable and worthy of further analysis from the HRM perspective. In a work environment, employees are bound by various hierarchical ties that can create a certain amount of power over each other. Moreover, the work environment is balanced between benefits, value for the employee and well-being, and benefits for the organisation and the achievement of its objectives. Employees represent different generations, cultures, experiences, and tech-savviness, so creating a playful experience and engagement that is valuable to the employee and the organisation can be a serious challenge. The affordances approach could influence these considerations or bring a different view of gamification in HRM considering that affordances are how employees perceive environments to support their needs. This may fundamentally change the approach to gamification, as gamification in this case is not something that is imperatively built into the system, something that might make the employee feel pressured or forced to participate.

To conclude, employee relationships and interactions applying various gamification solutions are getting more important. Close relationship with technology, examination of unique environments and incentives, exploration of behaviours and outcomes associated with gamification in organisational settings, and shedding light on the effects of unique affordances that support and enable gamification activities in organisational contexts are reasons to use the affordance approach in HRM. The affordance approach leads to understanding how employees interact with gamification and allows researchers to explore the psychological aspects of gamification and their overall experience within HRM contexts. It provides a comprehensive path for studying gamification by exploring behaviours, fostering engagement, supporting activities, promoting psychological aspects, examining technology roles, and

addressing empirical evidence gaps within organisational contexts.

What are the theories and models used to explore gamification in HRM based on the affordance approach?

The literature review has shown that gamification research in HRM has applied various theories and models (Fig. 4). The most frequently used theories are SDT (42%) and Flow (38%), followed by Kahn's model of engagements (17%), Technology acceptance model (TAM) (13%) and Sak's model of engagement (13%). Also, gamification studies draw on social theories that seek to understand multiple social phenomena by applying gamification in HRM. Studies that have focused on motivation have also tended to apply SDT and Flow theory, followed by Herzberg's motivational theory, Goal-setting theory, and Self-efficacy theory. With the growth of gamification research in HRM, there is an increasing number of different theories that are being applied in research. Also, new theories are emerging which have not been applied before. For example, Social exchange, Social identity, Basic psychological needs satisfaction (BPNS) (a sub-theory within the broader framework of SDT) and others. It should be noted that some of these theories, which have already been applied in gamification studies in other fields, are still not very widespread and are rarely applied in the HRM field (for example, Goal-settings theory).
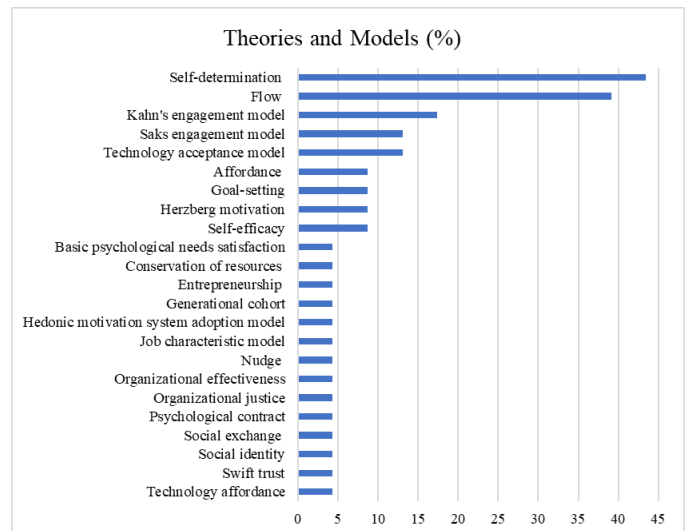

Fig. 4. Overview of the theories and models employed in the articles
Source: compiled by the authors

In a gamification context, the application of SDT and BPNS theories justifies the meaningfulness of gamification and the possibility of ensuring sustainable motivation in the HRM field (Behl et al. 2021; Norlander et al. 2023; Hidayat and Abdurachman 2022; Wibisono et al. 2023). This is argued by the fact that gamification has been shown to address not only extrinsic but also intrinsic motivation by satisfying basic psychological needs (Liu et al. 2018; Prasad et al. 2019; Girdauskiene et al. 2022).

The added value of applying Flow theory to the interpretation of gamification is also severalfold. First,

Flow theory also supports the meaningfulness of the gamification process in a work context (Silic et al. 2020; Sousa and Dinis-Carvalho 2021). Second, this theory explains how behavioural outcomes occur through gamification by providing an explanation of how flow is associated with an increased tendency to repeat intended behaviours related to performance (Behl et al. 2021). Process success is determined by the clarity of goals and the balance between challenges and skills (Jalili 2020; Silic et al. 2020; Bitrian et al. 2023; Gupta et al. 2021). Thus, this theory has contributed most to understanding how gamification inspires employees to engage their physical, emotional and mental efforts (Gupta et al. 2021).

Despite the positive results of gamification applications, studies have also found negative results for motivation and behavioural outcomes, so various other theories have been used to explore the reason for this difference. Some theories have helped to shed light on the necessary preconditions for gamification's positive impact on psychological and behavioural outcomes. Goal-setting theory allows the identification of factors that motivate employees to achieve goals in a gamification environment (Kulkarni et al. 2022). Nudge theory helps to reveal that employees behave well when they are better informed (Jalili 2020). Organisational justice theory added value by helping to reveal the feeling of fairness importance in gamified processes (Georgiou 2021). Also, Herzberg's motivation theory helps to reveal that there are hygiene factors (e.g. equality) that do not increase motivation, but their absence would decrease it (Sheiner 2015). Moreover, the TAM and the HMSAM models have been used to explain the relationship between gamification and attitudes towards specific technologies (beliefs in usage and usefulness) (Behl et al. 2021; Bitrian et al. 2023). Resource conservation theory, Technology affordance theory, Goal-setting theory, Social identity theory, Social exchange and Self-efficacy theory have added value in explaining the potential outcomes that may motivate an employee to engage in gamification at work (Sheiner et al. 2015; Behl et al. 2021; Benitez et al. 2022; Wibisono et al. 2023; Chang et al. 2023).

Analysis revealed that scientists have focused on engagement and applied theories to explain how gamification increases engagement. Swift's Trust Theory and Psychological Contract Theory provide perspectives on how gamification can engage digital employees (Pareira et al. 2022). Saks and Kahn's engagement models have added value by helping to uncover engagement factors and gamification relationship (Girdauskiene et al. 2022). Furthermore, scientists have focused on the gamification impact on employee behaviour outcomes. Job Characteristics Model, Generational cohort theory, Organisational effectiveness theory and Entrepreneurial theory have added value in understanding the relationship between gamification, employee behaviour and performance (Liu et al. 2018; Hidayat and Abdurachman 2022; Richards et al. 2023). In addition, the Affordance theory lens allows for a critical examination of gamification, exploring its barriers and constraints and its holistic impact on employee productivity and performance (Waizenegger et al. 2020), engagement and enjoyment (Wibisono et al. 2023).

Researchers who have adopted the affordance approach in their research have drawn on the following theories and models in their work: Basic psychological need theory, Conservation of resources theory (explains the motivation driving to both preserve existing resources and seek out new ones) (Wibisono et al. 2023), Technology affordance theory (the affordances provided by a technology influence its use, depending on individuals' perceptions and interactions with the technology) (Benitez et al. 2022), and Affordance theory (technological capabilities arise from the interaction between users and technological artefacts within a specific context, rather than being inherent to the technology itself, akin to the original definition of Gibson (1977) that affordances represent possible actions available to animals within their environment) (Waizenegger et al. 2020; Wibisono et al. 2023).

The term "affordances" has received much attention in the Human-Computer interaction field. Here the concept and theory have been developed and should not be treated in the narrow sense introduced by Gibson (Vyas et al. 2017). Furthermore, the affordance approach has recently been introduced into organisational and management literature (Wang et al. 2023). When an artefact or technology is used in a large organisation with multiple users, it is crucial to adopt a broader approach to affordances that includes the social and cultural dimensions of the workplace (Vyas et al. 2017). Despite the importance and potential of the affordances concept in the HRM field, very few researchers have paid more attention to this in the articles selected for this review. Only Waizenegger et al. (2020) have focused on the broader development of the understanding of affordance in gamification research. The authors have analysed several different types of affordances in their study and their research findings contribute to the theory of affordances by providing insights into the change in affordances of team collaboration. According to Waizenegger et al. (2020), affordances are frequently influenced by social contexts as well as by their historical and institutional applications. Affordances can be analysed by examining the design and usage, considering employee goals, community participation, and human reactions to changes in affordances (Waizenegger et al. 2020).

In summary, gamification research in HRM has mainly used self-determination theory and flow theory. This indicates a strong focus on intrinsic motivation. The application of different social theories highlights the importance of the multi-layered approach to understanding gamification's effect on the work environment. However, the limited application of motivational and social theories showed the potential for further research in this field. The concept of affordances has gained attention in the fields of gamification research, and organisational and management literature. While the concept of affordances has been developed beyond its original narrow sense, there is still a need for further exploration and understanding of affordances in the gamification and HRM field, which includes the social and cultural workplace aspects.

What is known about how gamification motivates looking through the lenses of affordances in the field of HRM?

In general, gamification is the integration of game elements into various other systems and tools. The context of HRM is no exception. Technologies, digital platforms, and systems provide opportunities for employees to enable or constrain certain actions and behaviours. The term affordances is used to refer to the various possibilities for action in a particular environment in gamification research. The systematic literature analysis showed that the concepts of environmental affordances, technological (or technology) affordances, social affordances, gamification affordances and motivational affordances were applied in 14% of the selected articles (n=5) or 17% of the articles focusing on motivation (Table 1).

Table 1. Overview of the affordances concept employed in the articles on motivation in the HRM field

Author	Research focus	Concept
Wibisono et al. (2023)	Engagement and Motivation	Gamification affordances
		Motivational affordances
Ligorio et al. (2023)	Sustainable behaviour	Gamification affordances
Benitez et al. (2022)	Employee performance and Motivation	Technological affordance
		Gamification affordances
Waizenegger et al. (2020)	Team collaboration	Gamification affordances
		Technological affordance
		Environmental affordances
		Social affordances
Holzer et al. (2020)	Knowledge sharing and Motivation	Motivational affordances

Source: compiled by the authors

This showed that the affordances approach is used in gamification research as well as in research that focuses on motivation. However, the analysis revealed that these concepts have only been started to be applied in gamification research in HRM since 2020. Moreover, the literature analysis revealed that researchers refer to slightly different concepts and definitions of affordances in their studies. Below (Table 2) the definitions of different affordances concepts are presented.

Based on Gibson (1977) environmental affordances describe how animals interact with their surroundings. Technology affordances refer to the interaction between people and technological artefacts (objects), emphasising the possible behaviours and actions enabled by these technologies which can be shaped by social environments, historical context, and institutional practices (Benitez et al. 2022). It is grounded in the idea that technologies have inherent properties that suggest how they can be used, and people perceive and actualize these affordances in different ways (Benitez et al. 2022; Waizenegger et al. 2020). Technology affordance theory was used to explain technological affordances and provides a useful conceptual framework to understand how the features and capabilities of technologies enable and constrain people's actions and behaviours in organisational contexts (Holzer et al. 2020). Social affordances can be considered the possibilities of action that people may provide as a social invitation for interaction with one another created by technological features within an environment

(Waizenegger et al. 2020). Social affordances refer to a specific type of technological affordances when attention is paid to the social interaction that occurs due to the use of technology. These affordances can be a characteristic of all mentioned affordances. In this sense, even a point, badges or leaderboards can be social affordances because they can become a stimulus to compete.

Table 2. Definition of different affordances concepts

Concept	Definition	Authors
Affordances	Feasible and available actions provided by the environment that are practical and accessible for an employee to engage with.	Waizenegger et al. (2020)
Technological affordances	Potential uses and possibilities presented by a technology or platform, shaping what enable or constrain certain actions and behaviours	Benitez et al. (2022)
Gamification affordances	Actions that employees believe they can undertake within a gamified context.	Suh and Wagner (2017)
Motivational affordances	Designed triggers intended to address employees' motivational drivers and influence their psychological state.	Huotari and Hamari (2017)

Source: compiled by the authors

As an integral part of technology, gamification also enables or hinders certain specific actions and behaviours of employees in the work environment. In gamification, affordance theory proposes that technological capabilities are not embedded in technology but rather emerge from the relationship between employees and technological artefacts (objects) (Benitez et al. 2022; Waizenegger et al. 2020). Gamification affordance is an action that an employee perceives as possible when using a gamified system (Suh and Wagner 2017). Each element of the game used to design gamification can be understood as a practical mechanism that allows the affordances to manifest themselves. Also, they can be grouped according to certain common characteristics (Wibison et al. 2023).

Gamification can enhance the enjoyment of a task or activity by providing the employees with engaging and motivating gamification elements that encourage employee participation, motivation and engagement (Wibisono et al. 2023). When gamification is implemented effectively, it can increase motivation, leading to increased enjoyment for the employee (Liu et al. 2017). It is important to acknowledge that gamification design and employee perceptions can shape distinct affordances for different employees (Wibisono et al. 2023). Motivational affordance in gamification refers to how the activity is designed to motivate employees to engage, which includes rewards, challenges, and a sense of progress or accomplishment (Wibisono et al. 2023). Wibisono et al. (2023) study revealed that the relationship between motivational affordance and basic psychological needs

satisfaction is complex, as different employees may find different stimuli as motivating.

Summarising the analysis of the studies, it can be said that the studies focused on the single-user level. However, researchers studying affordances in the context of management have identified the existence of organisational and cultural or social levels in addition to the single user level. Vyas et al. (2017) argued that affordances need to be examined in the context of group dynamics, not just single users. Despite that from the design perspective, the affordances at the user level relate to its functionality, and representation, requiring an understanding of the one-to-one relationship between the user and the system (Vyas et al. 2017). However, when addressing affordances at the organisational level, it is necessary to take into account the cultural and social impact of interaction, rather than limiting it to the single-user relationship (Vyas et al. 2017). The analysis suggests that this aspect is still little explored and is an interesting new area of gamification research in the HRM field.

In summary, it can be concluded that studies refer to different concepts of affordances. However, all of these concepts are highly interrelated. Affordances (environmental affordances), technological affordances and gamification affordances refer to actions, while motivational affordances primarily refer to incentives to perform actions. Any element of gamification can be considered as information that the employee receives from the gamified environment. This information can be interpreted and this individual interpretation becomes a stimulus to effort and action. Affordances may differ across different environments and may be shaped by social environments, context, organisational practices, or employee perceptions. This is in line with Vyas et al. (2017) who argued that affordances should be examined in the context of group dynamics, not just individual employee and there is a growing recognition of the importance of considering affordances at the organisational and cultural or social levels.

Conclusions

Gamification is particularly relevant to the HRM field, but despite the large body of literature on gamification, it appears to be relatively under-researched in the HRM, even though it is a phenomenon applicable to HRM. Current studies often focus on individual motives and game elements without fully exploring the broader organisational context and the social and cultural dimensions of the work context. Affordances theory is gaining more attention in management and business, which is now much broader than it was introduced. It would be valuable to apply a broader understanding of it to gamification research and to carry out more research to uncover the context-depending and user-depending aspects of the application of gamification in HRM.

Affordances focus on the interaction between employees and gamified environments, emphasizing psychological outcomes. Also, affordances provide opportunities for motivation, engagement, and behaviour change tailored to enhance the employee experience and encourage desired behaviours. Leveraging these affordances effectively can create a more immersive and enjoyable experience for employees. Moreover, it offers a more holistic view of how employees interact with gamified systems, considering individual needs and preferences.

The affordance approach is useful for exploring behaviours associated with technology and goal-oriented actors within workplace conditions. The affordance approach effectively explores gamification in organisational contexts, although there is a need for more empirical evidence in this area. Future studies should explore how affordances operate at group or organisational levels and consider social and cultural dimensions in workplace environments.

Understanding affordances can lead to the design of more effective gamification strategies tailored to individual and organisational needs in HRM contexts. Future research should aim to address these gaps by investigating the broader applicability of gamification affordances, examining their long-term effects on employee behaviour and organisational outcomes, and developing a more nuanced understanding of how different organisational settings influence the success of gamification initiatives.

This research contributes to academic knowledge by providing a clear argument for using the affordance approach and identifying theories and models related to gamification affordances in gamification studies within HRM. The study identifies key concepts and definitions of affordances as applied in HRM gamification research and offers a more consistent understanding of how affordances impact employee behaviour and motivation. The study shows that most research on affordances in HRM gamification focuses on individual level, ignoring how it works at an organisational or team level. This opens the door for future research to consider teams, workplace practices and cultural influences.

Despite its strengths, the study has some limitations, such as focusing only on articles published in English and using a limited set of keywords in a limited number of databases, which may result in missing relevant studies that could have been identified. Future research should broaden the keyword set to include synonyms, and related terms to ensure a wider range of relevant studies are captured. Although some limitations, this study provides valuable insights for practitioners. These insights not only contribute to a more holistic understanding of gamification but also provide actionable insights to implement effective gamification strategies in organisations. It also helps practitioners to gain an understanding of how gamification can be applied to motivate employees by focusing on the affordances it provides.

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