



A conceptual framework for understanding and identifying gamblified experiences

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ABSTRACT

Gamblification, i.e. the use of gambling as a tool to influence consumer decision-making, has most recently been associated with the monetisation of digital games. Yet, despite such implementations receiving the majority of attention, gamblification is not restricted to this context. Indeed, it is becoming increasingly visible across a range of media products and services, with the potential to be used to achieve pro-social as well as commercial aims.

Given the varied implementations of gamblification, it is important to develop tools and methods which allow gamblified experiences and interactions to be investigated and analysed; thereby providing a basis for in-depth investigation by relevant stakeholders.

This work presents a conceptual framework for identifying and evaluating the components which constitute gamblified experiences. It then applies the framework to an online health and wellbeing service in order to illustrate the application of the framework and the knowledge it generates.

In addition to providing a practical tool for identifying and assessing gamblified products and services across a range of contexts, this work also offers theoretical insights into our understanding and interpretation of gamblified experiences. It draws from a wide range of disciplines and sources to deepen understanding of a topic which is growing in both social and economic significance. In addition, the importance of ethical implications in understanding the impact upon both individuals and wider society is underscored. While also highlighting that the potential success, or otherwise, of gamblified experiences in realising intended outcomes is impacted by the motivational drivers they gratify.

1. Introduction

Gamblification, the use of gambling and gambling-like experiences to guide consumer behaviour, has become increasingly prevalent in recent years, while it is not limited to any particular medium, it has become most apparent in digital media, particularly digital games (Macey & Hamari, 2022). Given that many games include activities which are not legally classified as gambling, despite incorporating chance-based reward systems, they are neither subject to regulation nor expected to promote responsible consumption strategies to players. The gamblification of games, either in respect to in-game items such as loot boxes (Brooks & Clark, 2019; Macey, Cantell, Tossavainen, Karjala, & Castrén, 2022) or their consumption (Zanescu, Lajeunesse, & French, 2021) has proven to be extremely profitable for companies. Such

practices have also spread into adjacent areas, such as streaming (Abarbanel & Johnson, 2020) and have begun to migrate to other forms of digital products and services (Adam, Roethke, & Benlian, 2021; Macey & Hamari, 2022).

Given the many varied forms of gamblification, and the diverse contexts in which it is employed, tools are needed which allow gamblification to be investigated. This work is the first to present a conceptual framework for identifying and evaluating the components which constitute gamblified experiences, with the intention that it be used as a tool by researchers and other relevant stakeholders.

Such a tool is needed given the concerns that: increased exposure to such activities may contribute to the normalisation of gambling-like behaviours, particularly in vulnerable populations; and that individuals will develop a preference for risk-based transactions,

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potentially experiencing negative consequences (Gainsbury, King, Abarbanel, Delfabbro, & Hing, 2015, p. 147; King & Delfabbro, 2020). Similarly, practices associated with gamblification have been criticised as they make use of techniques which encourage disordered consumption, restrict consumer choice, and are lacking in both transparency and consumer safeguards (King & Delfabbro, 2020; King et al., 2019). However, gamblification is not inherently exploitative and, when implemented appropriately, can be used to increase user experiences more positively, for example by providing unexpected opportunities for reward or facilitating ongoing and deeper engagement. Furthermore, in addition to commercial environments, gamblification can be employed to encourage pro-social behaviours, from recycling to participation in vaccination campaigns (Law, Peterson, Walkey, & Bosch, 2022; Lottery Finland Oy, 2022).

The conceptual framework presented herein was derived a range of literature addressing gamblification, both academic and grey. Application of the framework as a tool for evaluation is an iterative process which includes both qualitative and quantitative assessment. It is anticipated that this work will provide a foundation for the development of further tools and theoretical models which will provide a basis for in-depth investigation of gamblification and gamblified experiences by researchers and practitioners. Furthermore, it will allow stakeholders outside academia to assess different manifestations of gamblification and to target aspects relevant to their interests. For example, regulators may wish to examine a gamblified interaction in order to make a judgment about issues of consumer protection or the potential need for an operating licence. Alternatively, clinicians may wish to understand how clients experience gamblified services or products in order to identify aspects which may be potentially problematic, or to understand how such interactions may give rise to maladaptive cognitions.

This work will first present a theoretical background of gamblification, and the conceptual approach adopted in this research before describing the method used to develop the framework. It will then provide detailed descriptions of the resulting concepts and components which together constitute the framework. Following these descriptions is a guide for utilising the framework, including an example illustrating its use in reference to a real-world health and wellness service. Finally, the implications of this work, both theoretical and practical will be discussed.

2. Theoretical background

Gamblification is intimately linked to the ongoing process of media convergence, most visible in the convergence of digital gaming and gambling. Prior works addressing the convergence of gambling and gaming in digital media have focused on identifying ways in which the two practices can be distinguished from one another (King, Gainsbury, Delfabbro, Hing, & Abarbanel, 2015). However, this framework is solely concerned with understanding the varied forms of gamblification which, despite receiving increased attention in the area of digital media and games, can be observed in many different spheres of daily life.

Whilst the practices of gamblification have been in evidence for many years (McMullan & Miller, 2008), it is only very recently that work has begun to attempt to understand the precise meaning of gamblification. Increased attention on the convergence of gaming and gambling has both reignited interest in the term and extended its reach into new domains (Macey & Hamari, 2022). Gamblification was first used to define the ways in which the sports industry was co-opted and used as a vehicle to promote gambling (McMullan & Miller, 2008). Later, its scope widened to include the increasing presence of gambling and gambling-like activities using real money in environments not previously associated with gambling, such as Social Casino Games (Morgan, 2012) and social media (Chambers-Jones & Hillman, 2014). More recently, it has been employed in reference to the specific practices and potential consequences associated with: digital distribution services (Zanescu et al., 2021); video streaming platforms (Abarbanel &

Johnson, 2020); Esports (Macey et al., 2020a, 2021); the monetisation of both digital and physical products (Adam et al., 2021; Johnson & Brock, 2020; Xiao, 2022; Zanescu et al., 2021); and the emergence of new investment products in financial markets (Newall & Weiss-Cohen, 2022).

Gamblification is the intentional insertion of gambling or gambling-related content into contexts in which it is not naturally present. Gamblification can be introduced into interactions between users and individual products or services, and is a tool used to motivate certain behaviours. There are two primary forms of gamblification, affective and effective, each of which are divided into two further sub-types; affective gamblification refers to a) the use of gambling to elicit certain emotional responses, and b) the promotion and normalisation of gambling; effective gamblification refers to the incorporation of a) easily-recognisable, established gambling activities and b) novel forms of gambling, or gambling-like activities, into services and products as a means to enhance consumer engagement and/or increase monetisation (Macey & Hamari, 2022). Furthermore, gamblification can be applied to all manner of activities, including those at very different levels of abstraction. For example, individual games can be gamblified through the addition of specific in-game items for players, such as loot boxes (Roethke, Albrecht, Adam, & Benlian, 2021); alternatively, the consumption of game videos on streaming services such as Twitch can be gamblified through the use of tools provided by the platform (Abarbanel & Johnson, 2020).

Gambling is a form of game play, although the real-world consequences of play are such that it is considered distinct from “pure” games and play, with this distinction being codified in legislative or regulatory systems (Deterding et al., 2020; Macey, 2021). Gamification and gamblification, therefore, share a common root as they seek to encourage gameful experiences outside of their traditional contexts. While there is a significant body of work dedicated to gamification, the study of gamblification is in its relative infancy, as such existing work in the field of gamification can serve as a template for gamblification. One of the primary research areas in gamification is the development of frameworks which map the varied contexts and components of gamified systems, both in respect to the core processes (Chou, 2019; Dyer et al., 2015) and specific use contexts (e.g. Sabri, Fakhri, & Moumen, 2022; Silva, Mendes, Teixeira, & Braatz, 2023; Tomé Klock et al., 2015).

In addition to its systemic qualities, gamification has also been studied in reference to its experiential qualities. Indeed, it has been argued that it is the experience which is the key mediator between affordances of a gamified system and the targeted outcome; that is, that the intended goals cannot be achieved if “gamefulness” is not experienced (Högberg, Hamari, & Wästlund, 2019). As with gamification, it is the experiential characteristics of gamblification which are key to understanding its impact.

3. Method

Conceptual frameworks are not solely a collection of associated ideas or issues, neither are they explanatory models, instead they are a presentation of key concepts which are inter-related, and which provide a comprehensive understanding of social reality (Miles & Huberman, 1994, p. 338).

This work employs the principles of conceptual framework analysis to understand and identify the interlinked concepts which together constitute gamblified experiences. It is a qualitative method which synthesises findings from multidisciplinary sources in order to provide an interpretation of a social phenomenon (Jabareen, 2009).

The first stage of the process is to identify texts which serve as the basis for analysis, these should not be limited solely to academic texts but also include grey literature. The data for this study consisted of academic texts from a range of disciplines, including gambling studies, game studies, media studies, and HCI, as well as corporate publicity materials, news articles, and websites.

The next stages of the process are to extract, deconstruct, and

synthesise concepts. Having familiarised themselves with the sources, the authors then identified concepts which emerged from the data, examining points of similarity and difference before arranging them into a coherent framework in which the concepts and their components are structured.

Finally, the conceptual framework requires validation. This was accomplished via the formulation of measurement items for each of the components that contribute to the concepts. This finalised format was then tested through the analysis of a real-world, gamblified service.

4. Results

Five core concepts of gamblified experiences were identified in the literature review, see Fig. 1, each containing either five or six components: Interaction Context, Ethical Issues, Motivations Gratified, Representational Characteristics, and Gambling Mechanics. The five concepts are inter-related and key to understanding gamblification, as experienced by users of products and services.

4.1. Concept 1: Interaction Context

4.1.1. Component: User Interactions

Gamblified experiences can be characterised by either active or by passive consumption. That is, that some situations are characterised by the need for user input which materially affects an outcome, such as selecting from a set of options, whereas others simply require that users view content, such as an advert (Lopez-Gonzalez & Griffiths, 2018). Furthermore, the degree of interaction can vary, ranging from simply clicking a button in order to initiate an activity, to a series of connected or ongoing actions, such as watching tournaments or completing daily tasks to earn wagering tokens (Esports). The degree of user agency directly affects the sense of engagement proportionally, with activities such as betting on the outcome of an event, often framed as a “prediction contest” requiring both increased awareness of the topic and prolonged involvement. Limited amounts of user agency and interactivity are more likely to be associated with other outcomes, such as marketing or monetisation (Johnson & Brock, 2020).

4.1.2. Component: Gambling Fidelity

Gambling fidelity refers to the structural characteristics of the gamblified experience. Reduced to their core components, definitions of gambling, whether legal or psychosocial, ultimately consist of three elements: a stake, an uncertain or chance-based outcome, and a reward

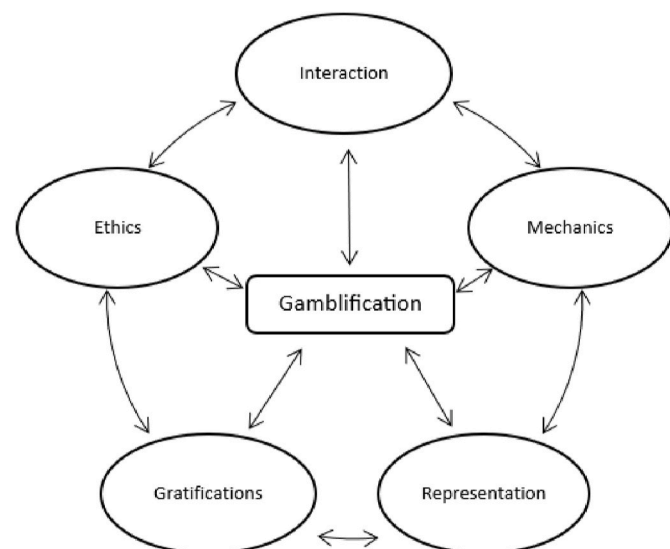


Fig. 1. The five concepts of gamblified experience.

(Williams, Volberg, Stevens, Williams, & Arthur, 2017). It is the specific interpretation of these elements that accounts for differences in legislative approaches and regulatory practices.

In order to account for both differing regulatory approaches and psychological definitions of gambling, gamblification describes activities which incorporate all three components, “full-fidelity”, or those in which either the stake or reward is realised in non-monetary formats, “partial-fidelity” (Macey & Hamari, 2022). Understanding the degree to which gamblified experiences are a faithful representation of gambling, enables judgements to be made as to whether or not users can easily identify that they are participating in a gambling, or gambling-like, activity. This issue is particularly relevant to discussions around video game items (Abarbanel, 2018; Drummond & Sauer, 2018; Griffiths, 2018).

4.1.3. Component: Gambling Primacy

Gamblified experiences can be presented to users either as the primary product or service, or as an additional element. In the context of digital games, Social Casino Games (SCG) can be considered a sole or primary offering (Macey & Kinnunen, 2020), while a loot box would be considered a secondary feature as it is provided as an optional addition to the main game. Loot boxes are in-game items which distribute rewards to players using random number generation (Macey & Hamari, 2019); they are a way of delivering content associated with a game, but do not themselves materially influence the way in which the game itself is played.

Many other services and products also provide additional gamblified experiences as a means of offering customers rewards, these can be both commercial, such as Starbucks’ augmented reality lottery (Adam et al., 2021), or those promoting pro-social aims such as recycling machines which offer reimbursement via lottery tickets as an option (Lottery Finland Oy, 2022; Norsk Pantelotteri).

4.1.4. Component: Role of Gambling - promotion

Affective gamblification uses gambling or gambling-related content to engender certain emotional associations with non-gambling products or services (emotive), or the use of a particular non-gambling product, or service as a vehicle to promote participation in gambling (normalising). Examples of the former include the promotion of specific locations as desirable holiday destinations (Sun & Luo, 2016) or the rhetoric around investments in cryptocurrencies and NFTs (Abarbanel & Macey, 2019; Lee, 2022); examples of the latter include the increased visibility of gambling companies in sports, whether traditional or esports (Greer, Rockloff, Browne, Hing, & King, 2019; Macey, Abarbanel, & Hamari, 2020).

4.1.5. Component: Role of Gambling - engagement

In effective gamblification, gambling and gambling-like activities can also be used as a means of encouraging participation and engagement in other activities, such as watching esports tournaments or online game streams (Macey & Hamari, 2022). There are also examples of gamblified experiences being used to promote engagement in education, e.g. students on a politics course being invited to participate in a prediction contest for presidential election (Rice, 2020). In such cases, the addition of gambling activities to products and services serves to create engagement through feelings of fun and excitement while also leveraging motivations such as intellectual challenge and social rewards (Binde, 2013; Zanescu et al., 2021).

4.1.6. Component: Role of Gambling - monetisation

The second way in which effective gamblification is employed is to drive enhanced monetisation of a product or service (Macey & Hamari, 2022). Loot boxes and other randomised monetisation mechanics, a common feature of contemporary video games, have been shown to be highly profitable (Clement; Lemmens, 2022), while the addition of an in-game casino to GTA V led to 23% increase in revenue (Strickland). In

these cases, effective gamblification primarily leverages motivations derived from financial gain, whether in terms of monetary gain or the chance to win virtual items of value; users are attempting to profit from the interaction in some way.

In addition to commercial contexts, the use of gambling as a means to increase revenue is also evident in the non-profit sector; charities often use raffles, lotteries and, increasingly, scratch cards as a means to raise funds (Alzheimer's Society. Alzheimer's Society, 2023; St Barnabas Hospice, 2023). Indeed, a condition of operating licences for many national lotteries is that a proportion of the proceeds are routed to the third sector thereby supplementing, or even replacing government funding (Egerer, Kankainen, & Hellman, 2018; Pickernell, Brown, Worthington, & Crawford, 2004).

4.2. Concept 2: Ethical Concerns

Games of chance have been a constituent part of many temporally and geographically disparate human cultures, fulfilling a range of socio-economic functions. Despite this fact, levels of social acceptance have waxed and waned, with the practice of gambling having been subject to numerous and varied restrictions, whether originating from religious or secular authorities (Macey, 2021). The ethical implications and potential consequences of gambling, and by extension gamblification, should be assessed according to contextual factors rather than dominant rhetoric. These factors include the potential for negative consequences, potentially addictive or habit-forming qualities, safeguarding of participants, potentially exploitative design, and the specific user behaviours that are being encouraged (King and Delfabbro, 2019, 2020; King et al., 2019).

4.2.1. Component: impact

While gamblification can be employed to achieve certain goals, see section 4.1 above, these goals can variously be used to benefit a range of parties. The impact, therefore, can be assessed according to how the potential outcomes affect both wider society and the individual user. Gamblification which is intended to discourage fare-dodging, for example (Fabbri, Nicola Barbieri, & Bigoni, 2019), benefits both society and individuals, while a service such as WayBetter supports beneficial outcomes primarily for individuals (Lose, 2023). Indeed, gambling has also been used as to enable local organisations, national charities, and state authorities to benefit communities and societies, raffles and public lotteries are examples of such implementations. Alternatively, gamblified experiences have the potential to negatively impact individuals and to engender unintended behaviours. Social Casino Games have been marketed as an opportunity to practice gambling skills, yet they often inflate the chance of winning while also encouraging migration to real money gambling websites (Gainsbury, Russell, King, Delfabbro, & Hing, 2016).

4.2.2. Component: exploitation

Irrespective of the designed outcomes, the potential for a gamblified experience to be exploitative depends on the degree to which capitalises on an individual's weaknesses or vulnerabilities, and the degree to which all users are treated fairly (King & Delfabbro, 2018; Petrovskaya & Zendle, 2021). Even implementations which are apparently pro-social in nature, and commonly accepted throughout society, can be problematic and fall foul of legislation if they are found to present the activity in a misleading manner (Press Association, 2014; Weakley, 2017).

The subjective nature of gambling and gamblification is also apparent in the varied interpretations of such experiences on the part of users. For example, some players of the game *Overwatch* feel that the loot boxes present within the game are unethical and exploitative. Others, however, believe that they are a fair way of distributing in-game items and a legitimate business practice which raises revenue for ongoing development and support (Macey et al., 2022b).

Numerous specific practices have been documented which can be

considered exploitative, or even predatory, these include information asymmetry, the bundling of content, obfuscation of cost, and many others (King et al., 2019; Petrovskaya & Zendle, 2021).

4.2.3. Component: Potential for Harm

While gambling, as an activity, is neither inherently good or bad, it is one which is centred around risk and which has the potential to give rise to disordered play, with negative consequences experienced by both individuals and communities alike (Ladouceur, Boisvert, Pépin, Lorange, & Sylvain, 1994; Walker & Barnett, 1999). Potential harms can range in severity and relate to both psychological and financial consequences of participation, and are associated to greater or lesser degree with different activities (Castrén, Perhoniemi, Kontto, Alho, & Salonen, 2018; Mazar, Zorn, Becker, & Volberg, 2020). Furthermore, the growing use of gambling, and gambling-like interactions in digital media have been associated with numerous ethically questionable business practices and negative outcomes (King & Delfabbro, 2020; Petrovskaya & Zendle, 2021). However, many who participate in gambling do so without experiencing harmful outcomes, and gambling can be a source of positive socio-cultural experiences (Volberg, 2002; Wood & Griffiths, 2015).

4.2.4. Component: protection

While intimately connected to the two previous categories, gamblified interactions should also be assessed according to the degree of protections provided to users who may be underage or otherwise vulnerable. Such protections include age verification schemes, the ability to set spending limits, and the option to self-exclude if desired. While such measures are similar to the responsible gambling tools available on most major online platforms, uptake in other digital domains, including video games, is limited or addresses issues in isolation (Griffiths & Pontes, 2020; Király et al., 2017; Macey & Kinnunen, 2020).

An additional aspect to be considered are those protections which are less visible, i.e. the robustness and security of the system architecture (Berdichevsky & Neuenschwander, 1999; Kim & Werbach, 2016; Marczewski, 2017). While detailed analysis would require expert knowledge, judgements can be made about the overall level of security by referencing SSL certificates, domain names, trust seals, and information related to the physical contact details of the service provider.

4.2.5. Component: trust

Finally, the trustworthiness of a system refers to considerations such as the security of both personal data and of financial transactions in particular, and to more general concerns about privacy and the exploitation of big data to drive targeted advertising.

The issue of trust is particularly important in relation to gamblified experiences as, despite continued attention, they are unlikely to be subject to regulatory oversight (Gainsbury, 2019; Xiao, 2021). The example of third-party skins gambling websites, services that allow users to gamble with virtual items obtained from video games, vividly illustrates this issue with many fraudulent websites existing; indeed, fraud is a constant threat (Macey & Hamari, 2019; Bozhenko). Video games also highlight the misuse of player data with so-called "pity-timers" guaranteeing that players who pay to access random rewards receive a valued reward after a predetermined number of unsuccessful tries (Xiao, Fraser, & Newall, 2022). In addition, industry insiders have revealed unethical practices where win rates are set to 0% for a limited period before reverting to normal (Lewis). Such practices artificially manipulate the chances of "winning" in order to encourage ongoing participation or to maximise revenue income at the expense of players.

4.3. Concept 3: Representational Characteristics

4.3.1. Component: gambling references - language and terminology

The practice of gambling, or specific gambling activities, can be used as a point of reference to suggest particular qualities, communicate certain experiences, or elicit emotional responses. These references have

a rich cultural history and can exist across a range of potential contexts often employing language or terminology which reflects the affective qualities of gambling, from excitement to the fantasy of winning life-changing amounts of money: “take a chance”, “share the dream”, “live the thrill”, “become a millionaire”, and “go all in” (McMullan & Miller, 2010). Language directly referencing gambling is commonly used across all formats of media advertising and is directly associated with aspirational outcomes centred around fame, success, and happiness; the so-called “high roller” lifestyle (Binde et al., 2009; Griffiths, 2005).

4.3.2. Component: gambling references - imagery

The second form of gambling references commonly used to suggest particular, predominantly desirable, qualities is that of imagery. In addition to advertising, gambling imagery is often present in entertainment media. While pictures of dice or cards directly reference the gambling activities themselves, images of Las Vegas communicate hedonistic values associated with conspicuous and excessive consumption and a glamorous lifestyle (Abarbanel, Gainsbury, King, Hing, & Delfabbro, 2017; Turner, Fritz, & Zangeneh, 2007). Alternatively, scenes featuring gambling in a casino often convey a sense of sophistication and style, or of “coolness”; the fictional spy James Bond is particularly associated with such imagery (Egerer & Rantala, 2015; Raento, 2013).

4.3.3. Component: gambling references - audio

Gamblified experiences can utilise acoustic references, that is the auditory cues which create a sense of excitement and anticipation due to their association with specific events in and around gambling, even inducing physiological reactions. Soundscapes are an essential component of the gambling experience, both in respect to specific activities and the wider gambling environment (Collins, Tessler, Harrigan, Dixon, & Fugelsang, 2011; Derevensky & Griffiths, 2019). Audio cues, for example those associated with slot machines, have been shown to have multiple effects, including increasing positive experiences of gambling (Bramley & Gainsbury, 2015), indeed auditory effects have been found to directly impact motivation to open loot boxes (Kao, 2020).

4.3.4. Component: valence

While the use of such gambling references is most likely to be positive in tone, playing on the potentially desirable lifestyle implied by a successful gambler or promoting a sense of positive excitement (Egerer & Rantala, 2015), the opposite approach is also possible. Gambling references can also be employed to suggest negative or undesirable consequences of gambling, the capricious nature of chance of the potential for addiction, or associations with criminal activities (Turner et al., 2007).

4.3.5. Component: marketing

Where the presence of gambling or gambling-related content is the core focus of attention (see above), it is important to quantify its form and/or purpose. Such information can be used to map out the relationships between the gamblified content and the gambling, or gambling-like, experiences being promoted. Furthermore, understanding how gambling is presented, for example through advertising or sponsorship, allows more detailed examination of the techniques being used to normalise gambling.

Typically, gambling and gambling-related services will take the form of either advertisements or sponsorship of varied sporting or cultural events (McMullan & Miller, 2010; Purves, Critchlow, Morgan, Stead, & Dobbie, 2020). Finally, gambling may be endorsed by a celebrity or well-known figure from the relevant ecosystem, the choice of individual providing an endorsement provides a further indication of the particular group being targeted through gamblification (Abarbanel et al., 2017; Newall et al., 2019).

4.4. Concept 4: gratification of gambling motivations

Gambling is an activity present in many disparate societies and cultures, one which has fulfilled a range of psychosocial and socio-economic functions (Macey, 2021). As such, its appeal cannot solely be attributed to the fact that it affords the opportunity for financial gain; gambling gratifies a range of different motivations, and gamblification exploits these motivations in order to appeal to individuals.

While numerous works have addressed motivations for gambling, the majority of these have tended to focus on specific elements, e.g. the chance of winning money or social aspects (Lam, 2007), activities, e.g. electronic gambling machines (Nower & Blaszczynski, 2010), or modalities, e.g. online gambling (Lloyd et al., 2010). Alternatively, studies have investigated motivations in light of maladaptive cognitions which explain continued gambling despite repeated monetary loss (Billieux, Van der Linden, Khazaal, Zullino, & Clark, 2012; Raylu & Oei, 2004). Finally, of those studies which investigated a range of motivations, activities and/or populations (e.g. (Azmer, 2000; Gainsbury et al., 2016; Lloyd et al., 2010) none included motivational constructs, with the exception of Binde’s five factor model (Binde, 2013). As such, Binde’s model was deemed the most appropriate as it balances applicability and parsimony.

4.4.1. Component: chance to win

While money is the medium of gambling, it is not the source of meaning. Indeed, it is the opportunity to win which is the core motivation for participating in gambling and which attracts participants. Indeed, winning, in whatever context, has become symbolic of success and happiness in contemporary Western societies (Binde, 2013), both reflecting and reinforcing the values upon which they are built (Abt, McGurrian, & Smith, 1984). Gambling has been presented as a model of life (Bloch, 1951; Smith & Abt, 1984) and to win is emblematic not only of contemporaneous success, but also of the potential for future success and achievement.

Furthermore, prior works have revealed that the neurological rewards provided by gambling are at their highest at the point of maximum uncertainty, rather than in the moments after winning (Schultz et al., 2008). It is, therefore, the anticipation of a win coupled with the potential for loss that is most rewarding, at least in neurological and psychiatric terms.

4.4.2. Component: the dream of the jackpot

Gambling, and gamblified experiences, are often framed in terms not solely as chances to win, but as chances to win life-changing amounts of money (Binde, 2013). This is particularly associated with activities characterised by a large degree of volatility, such as lotteries or certain EGMs where initial stakes are low, but jackpots are large. Loot boxes have often been likened to slot machines, one reason being that the “prizes” they contain can range in value from a few cents to tens of thousands of dollars (Abarbanel, 2018). Even SCGs, in which players cannot cash out their “winnings” are accompanied by imagery of wealth and ostentation, thereby suggesting success in gambling is a path to wealth (Abarbanel et al., 2017).

4.4.3. Component: social rewards

In addition to monetary or other forms of financial rewards, gambling affords social rewards to participants in the form of communion, competition, and/or ostentation (Binde, 2013). The first of these refers to the socialising with others; gambling and gamblified experiences can serve as the context for social activity, for example swapping information in communities dedicated to esports betting (Sirola, Savela, Savolainen, Kaakinen, & Oksanen, 2021). The motivation of competition with others is gratified by games of skill such as poker or betting, where players can enhance self-esteem by “beating” others.

Finally, gambling allows individuals to display and to potentially enhance social status both through participating and by winning. The

tools provided to streamers on the Twitch.tv platform can also be used to gratify social motivations, for example by awarding unique emojis to be used in the chat channels, or roles as community moderators (Abarbanel & Johnson, 2020). While wagering events framed as “prediction contests” can offer prizes with monetary value, similar to established forms of betting they also provide the opportunity to gain social status among classmates, online communities, or friends (Abarbanel, Macey, Hamari, & Melton, 2020).

4.4.4. Component: intellectual challenge

Not all forms of gambling are based on pure chance, so-called games of skill allow players to influence the outcome to a greater or lesser degree. Games of skill typically include activities such as betting or wagering on events, e.g. sports, elections, etc., or certain card games such as poker. These activities include the processing of large amounts of information, and/or the development of particular strategies in order to increase the likelihood of a successful outcome.

Prediction contests, whether provided as part of an educational course (Rice, 2020) or as activities supplementing video game play and esports spectating (Esports), also offer the opportunity to demonstrate and to test knowledge of a specific field. As such, they function in the same way as traditional forms of betting and wagering in fan culture (Agha & Tyler, 2017; Gordon, Gurrieri, & Chapman, 2015). Additionally, branded or themed games are often offered to consumers of gamblified products or services, either as a core activity or as a supplement to the core activity (Armstrong, Rockloff, Browne, & Li, 2018).

4.4.5. Component: mood change

As discussed previously, gambling is a form of game and, like any other game it can offer excitement and thrills to players, particularly at moments of great uncertainty (Binde, 2013). Similarly, playing gambling games can be used as a means to escape or relaxation, with players immersing themselves within the activity or in the rituals of consumption, as with any other leisure activity. (Finally, some individuals use scratch cards or lottery tickets as prompts to indulge in flights of fancy and to escape the realities of daily life (Lelonek-Kuleta, 2022).

4.5. Concept 5: gambling mechanics

In situations where gamblified experiences afford interactivity, they necessarily take the form of specific gambling, or gambling-like, activities. In order to properly understand how gamblified experiences function, it is important to examine the specific mechanics which enable them to take place. As described, gambling consists of three core components: stake, an uncertain outcome, and a reward (Williams et al., 2017). Accordingly, the mechanics by which gamblification is implemented are separated into the following components which reflect these three distinct areas.

4.5.1. Component: Staking Conditions

Staking Requirements refers to the way in which an individual accesses an individual activity, their right or ability to make the “stake” which enables participation. An open system is one in which anyone can participate if they put forward a stake, such as a public lottery or promotional prize draw. In a fully closed system participation is limited to a restricted group, for example members of a specific institution or organisation, such as an election prediction contest for students of a political science course (Rice, 2020). In addition, there is an intermediate system in which participation is conditional upon individuals having previously purchased certain goods or services, with those goods and services being available to all. This is, perhaps, the most common situation and includes examples such as Starbucks’ StarLand programme (Adam et al., 2021), or WayBetter (Lose, 2023).

4.5.2. Component: stake type

The second point of categorisation is the specific form of stake, stakes can range from those assets which can be freely transferred or exchanged, such as money, to those that are non-transferable. Non-transferable assets include those which are intangible and those which are limited to a specific user or account, for example site-specific points or virtual items for which there is no online marketplace (Macey & Hamari, 2022). Stakes can be separated into the following categories: an established financial resource or currency, including cryptocurrencies; transferable assets with direct monetary value, such as tokens (including NFTs), or vouchers; a transferable virtual item, such as game skins; a non-transferable asset, such site-specific points; or intangible assets such as access to personal data or networks, and time/attention (Abarbanel & Macey, 2019; Delfabbro & King, 2023; Gainsbury, Hing, Delfabbro, & King, 2014; Griffiths & King, 2015; Jung, Yang, & Kim, 2020; Macey & Hamari, 2022; Scholten et al., 2019).

4.5.3. Component: event format

This component refers to the procedure by which the outcome is determined; gamblified experiences are either direct translations of existing activities or more novel forms which resemble traditional activities to varying degrees, examples include betting and loot boxes, respectively (Kim et al., 2023). Indeed, the issue of whether gamblified experiences constitute gambling or not is at the heart of many contemporary debates, whether in academia, regulatory environments, or in player communities (Macey et al., 2022b; Nielsen & Grabarczyk, 2018).

4.5.4. Component: user influence

A central concept when considering the mechanics of gambling, and the degree to which an activity can be considered to constitute gambling, is the role of chance and skill in determining the outcome. In some activities the individual has no way of influencing the outcome, as in the case of slot machines or lotteries, while other activities’ outcomes can be influenced by the individual, as with betting (Williams et al., 2017), or to a more obvious degree, such as when an individual wagers on their own performance for a given task (Zanescu, French, & Lajeunesse, 2020).

4.5.5. Component: reward type

A range of potential rewards can be provided to users as a result of gamblified experiences; reward type, therefore, refers to the form and context of the potential rewards provided via gamblification. As with stakes, rewards can be restricted solely for use within a closed system, for example site-specific discounts, alternatively they can be unrestricted (Adam et al., 2021; Zanescu et al., 2021). Rewards can also be financial in nature, virtual exchangeable items, or non-financial/tradable resources, such as social rewards in online communities. For example Twitch streamers offering raffles where the prizes are limited emoticons or community moderator roles (Abarbanel & Johnson, 2020). These two aspects are intrinsically linked; intangible or non-transferable rewards are, by their nature, restricted to use within the system from which they originate. Similarly, a reward provided via an established currency, or a virtual item which can be exchanged for a currency, cannot be limited for use within a designated system.

4.5.6. Component: Reward Pool

Finally, the reward can be part of a shared or public prize pool, such as a lottery, or one which is restricted to the individual. In this respect an individual prize, offered by StarLand (Starbucks. Starbucks, 2021), for example, can be compared to a limited, shared prize pool available in WayBetter (Lose, 2023), and to entry in a public lottery (Lottery Finland Oy, 2022; Norsk Pantelotteri). Distinct types of prize pool are used to serve different aims and gratify different user motivations; implementations used to increase monetisation or revenue generation are typically open to as wide a range of participants as possible, while user engagement is more focused on specific groups. Similarly, the larger

prize pools provided by, e.g. lotteries, gratify motivations such as the dream of hitting the jackpot, whereas pools restricted to specific groups or communities can gratify social rewards (Binde, 2013).

5. Using the framework

The framework has been designed to guide investigation of gamblified services and products through a two-stage process. The first stage is a qualitative assessment in which various aspects of gamblification are identified and described, providing information on the nature of the elements utilised and identifying areas of particular interest to the individual user. The second stage provides a quantitative evaluation of the service or product, allowing both comparison between different instances and presentation of information visually. Each stage is independent of one another and can be used individually if required, however, it is recommended that both stages are conducted in order.

Given that the framework can be applied to all manner of products and services, and can be used at different abstraction levels, it is important that the specific interaction is clearly identified beforehand. This is particularly relevant when considering the many different ways in which gamblification can be present within a single context, for example video games. In stage 1 (qualitative assessment), the framework is used to focus attention on particular concepts of gamblification, and the various components through which are experienced. Once the relevant components have been identified, the investigator should make more detailed notes; for example if a stake type has been recorded as being a non-transferable virtual item or currency, the notes can include information describing the specific form of this stake, such as a site-specific currency, and how it is obtained, such as through making a purchase or completing specified tasks. The results of this assessment can be presented as a text report with the identified forms of gamblification highlighted as a series of bullet points or section headers, while the free-text notes are used to provide further information.

In particular regard to the concept of Gratified Motivations, it is important to note that gamblified experiences can leverage one or more of the motivations described above in order to make participation more attractive. Different users can be motivated to participate in the same activity in order to gratify diverse needs, as such it is important that gamblified interactions are assessed at face value. For example, a prediction or betting contest may be presented with accompanying text which encourages potential participants to “demonstrate your knowledge”, or “beat your friends”. As such, while some may choose to

participate in order to experience a thrill, or to alleviate an undesired mood, the gratifications afforded by this activity are intellectual challenge and/or social rewards, not mood change. Additionally, the rewards offered by an interaction may also guide the assessment, for example Twitch provides tools that allow streamers to offer their viewers prizes through raffles (Abarbanel & Johnson, 2020). A prize may be financial, or it may be a community-role, such as chat moderator; in this case the gratifications afforded to participants would be either the chance to win, or social rewards, respectively.

In stage 2 (quantitative assessment), a series of scales are used to evaluate the components of gamblified experiences. These scales are presented below; endpoints and midpoints have been labelled to aid comprehension and use (see Figs. 2–6).

While every attempt has been made to formulate concepts and components that are clearly described, the implementation of the framework and the results it produces are necessarily subject to individual readings and interpretation, as with any form of content analysis (Krippendorff, 2019, p. 453). As such, it is important that when comparing results of separate evaluations that either a) assessments of multiple products/services are conducted by the same individual(s), or b) that assessments of a single service/product are conducted by a range of individuals. Indeed, there are multiple approaches for measuring and interpreting reliability, and for addressing issues raised by intersubjective disagreement, with the relevant approach being conditioned by the intended use context of the evaluation (Krippendorff, 2019, p. 453). The case presented below is intended to serve as an example and was produced by a single researcher for illustrative purposes.

5.1. Application of the framework to real-world case

WayBetter, an online behavioural change service dedicated to health and wellness was chosen as it is an example of gamblification from outside the sphere of contemporary video games, an area often overlooked in current debates. Additionally, WayBetter is an example of an ostensibly positive application of gamblification, meaning more detailed examination is warranted in order to bring depth to ongoing discussions.

5.1.1. Section 1 – qualitative assessment

5.1.1.1. Headline information. Interaction Context: Service, “WayBetter”.

A “behavior change company” predominantly focused on health and wellbeing that uses betting as a way of motivating individuals to reach

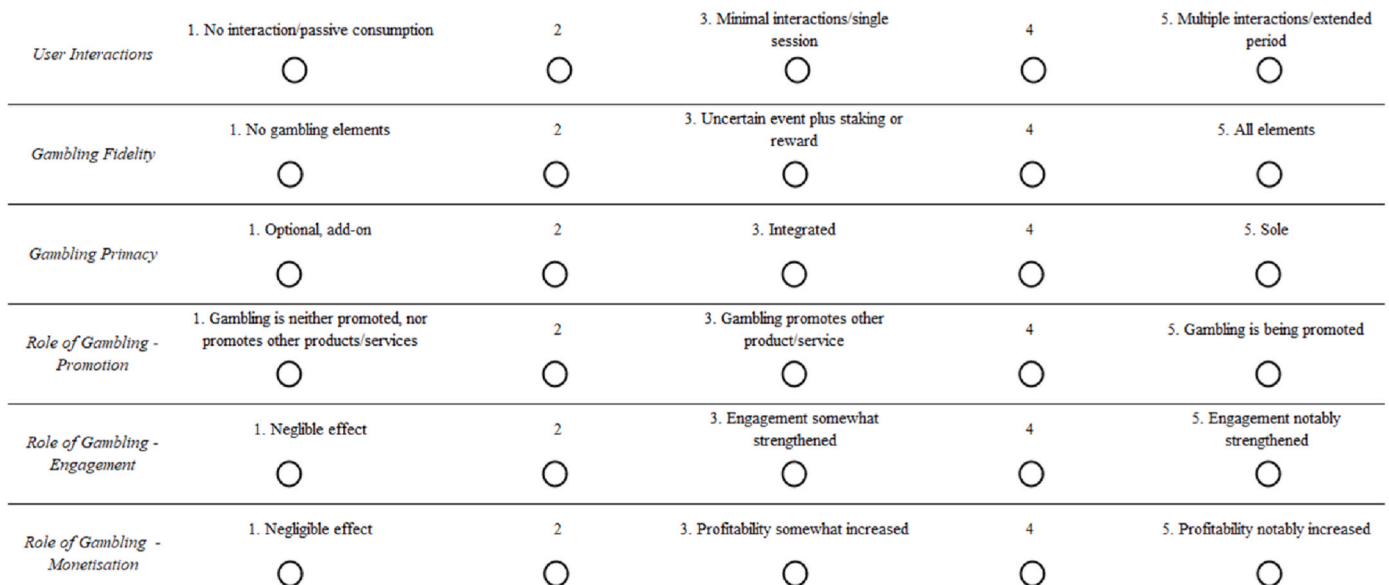


Fig. 2. Scale for assessing concept 1: Interaction Context.

<i>Impact</i>	1. Supports Pro-social or positive outcomes <input type="radio"/>	2 <input type="radio"/>	3. Outcomes are unclear/mixed <input type="radio"/>	4 <input type="radio"/>	5. Outcomes are detrimental <input type="radio"/>
<i>Exploitation</i>	1. System is transparent and fair to all <input type="radio"/>	2 <input type="radio"/>	3. Not all users are treated the same <input type="radio"/>	4 <input type="radio"/>	5. System exploits specific users' vulnerabilities <input type="radio"/>
<i>Potential for Harm</i>	1. There is no potential for harm to users <input type="radio"/>	2 <input type="radio"/>	3. There is the potential for minor harm to users <input type="radio"/>	4 <input type="radio"/>	5. There is potential for significant harm to users <input type="radio"/>
<i>Protection</i>	1. Young or otherwise vulnerable users are fully protected <input type="radio"/>	2 <input type="radio"/>	3. Young or otherwise vulnerable users are somewhat protected <input type="radio"/>	4 <input type="radio"/>	5. Young or otherwise vulnerable users are not protected <input type="radio"/>
<i>Trust</i>	1. System is secure <input type="radio"/>	2 <input type="radio"/>	3. System is somewhat secure <input type="radio"/>	4 <input type="radio"/>	5. System is insecure <input type="radio"/>

Fig. 3. Scale for assessing concept 2: Ethical Concerns.

<i>Gambling References - Language/Terminology</i>	1. None <input type="radio"/>	2 <input type="radio"/>	3. Moderate amount <input type="radio"/>	4 <input type="radio"/>	5. Very Large Amount <input type="radio"/>
<i>Gambling References - Imagery</i>	1. None <input type="radio"/>	2 <input type="radio"/>	3. Moderate amount <input type="radio"/>	4 <input type="radio"/>	5. Very Large Amount <input type="radio"/>
<i>Gambling References - Audio</i>	1. None <input type="radio"/>	2 <input type="radio"/>	3. Moderate amount <input type="radio"/>	4 <input type="radio"/>	5. Very Large Amount <input type="radio"/>
<i>Valence</i>	1. Gambling is presented negatively <input type="radio"/>	2 <input type="radio"/>	3. Gambling is presented neutrally <input type="radio"/>	4 <input type="radio"/>	5. Gambling is presented positively <input type="radio"/>
<i>Marketing</i>	1. None <input type="radio"/>	2 <input type="radio"/>	3. Moderate amount <input type="radio"/>	4 <input type="radio"/>	5. Very Large Amount <input type="radio"/>

Fig. 4. Scale for assessing concept 3: Representational Characteristics.

<i>Motivations - Chance to Win</i>	1. None <input type="radio"/>	2 <input type="radio"/>	3. Moderate amount <input type="radio"/>	4 <input type="radio"/>	5. Very Large Amount <input type="radio"/>
<i>Motivations - Dream of Jackpot</i>	1. None <input type="radio"/>	2 <input type="radio"/>	3. Moderate amount <input type="radio"/>	4 <input type="radio"/>	5. Very Large Amount <input type="radio"/>
<i>Motivations - Social Rewards</i>	1. None <input type="radio"/>	2 <input type="radio"/>	3. Moderate amount <input type="radio"/>	4 <input type="radio"/>	5. Very Large Amount <input type="radio"/>
<i>Motivations - Intellectual Challenge</i>	1. None <input type="radio"/>	2 <input type="radio"/>	3. Moderate amount <input type="radio"/>	4 <input type="radio"/>	5. Very Large Amount <input type="radio"/>
<i>Motivations - Mood Change</i>	1. None <input type="radio"/>	2 <input type="radio"/>	3. Moderate amount <input type="radio"/>	4 <input type="radio"/>	5. Very Large Amount <input type="radio"/>

Fig. 5. Scale for assessing concept 4: Gambling Motivations Gratified.

personal goals.

5.1.1.2. Concept: Interaction Context.

a. *User Interactions*: Multiple interactions over extended period.

Individual “games” range from 2 weeks to 6 months. A diet game, for example, requires initial goal setting, initial stake, submitting initial

<i>Staking Conditions</i>	1. Restricted entry <input type="radio"/>	2 <input type="radio"/>	3. Conditional entry <input type="radio"/>	4 <input type="radio"/>	Unrestricted entry <input type="radio"/>
<i>Stake Type</i>	1. Intangible asset <input type="radio"/>	2 <input type="radio"/>	3. Virtual item/currency <input type="radio"/>	4 <input type="radio"/>	Tangible asset (e.g. currency) <input type="radio"/>
<i>Event format</i>	1. No resemblance to established activity <input type="radio"/>	2 <input type="radio"/>	3. Resembles established activity <input type="radio"/>	4 <input type="radio"/>	established activity <input type="radio"/>
<i>User Influence</i>	1. Individual cannot influence outcome <input type="radio"/>	2 <input type="radio"/>	3. Moderate level of influence <input type="radio"/>	4 <input type="radio"/>	Significant influence on outcome <input type="radio"/>
<i>Reward Type</i>	1. Intangible asset <input type="radio"/>	2 <input type="radio"/>	3. Virtual item/currency <input type="radio"/>	4 <input type="radio"/>	Tangible asset (e.g. currency) <input type="radio"/>
<i>Reward Pool</i>	1. Individual Only <input type="radio"/>	2 <input type="radio"/>	3. Restricted pool <input type="radio"/>	4 <input type="radio"/>	Public pool <input type="radio"/>

Fig. 6. Scale for assessing concept 5: Gamblin Mechanics.

weight and providing a photograph. Subsequently players are required to make monthly check-ins, submitting updated weights and photographs and make further contributions to the prize pot until the game finishes.

b. *Gambling Fidelity*: All elements (stake, uncertain outcome, and reward).

It is important to note that while the interactional structure employed by WayBetter is not legally classified as gambling under US law, a degree of uncertainty remains in regard to the final outcome. If the outcome were known, or certain, all rationale for using WayBetter would disappear.

c. *Gambling Primacy*: Sole.

Wagering is the predominant means of interaction, although players can perform other interactions in addition to gambling, they all support the gambling. Furthermore, players cannot use the service without betting.

d. *Role of Gambling - Promotion*: Gambling is not promoted as a leisure activity or pastime.

e. *Role of Gambling - Engagement*: WayBetter employs gambling primarily as a means of strengthening engagement.

The service explicitly states that gambling is the primary means by which players are attracted to the service. It dedicates a large proportion of its marketing to communicating the way in which betting increases motivation to complete challenges, with affective factors such as excitement stressed over potential financial rewards. As it uses both intrinsic and extrinsic motivations to encourage participation, engagement can be considered to be the main focus of this particular gamblified experience.

f. *Role of Gambling - Monetisation*: WayBetter employs gambling as a means to drive profitability of the service.

Access to WayBetter requires payment of a membership fee, while access to games requires an admission fee. These are separate from the

money staked in each game. It is not explicitly stated anywhere on the site, but it is presumed that the membership fees and admission fees cover the business costs, and no percentage of the wagered money is given to the company. As such, gambling is not the means by which WayBetter is monetised, however, it could not function under its current business model without gambling.

5.1.1.3. *Concept: Ethical Concerns.*

a. *Impact*: Positive/Pro-Social.

The use of wagering in WayBetter is solely concerned with the promotion of individual well-being, although exercise is the dominant activity that is supported others include reading, mediation, and healthy eating.

b *Exploitation*:

The conditions of use are clearly stated, as are the specific rules and regulations for each individual activity in which site members can choose to participate; these rules are the same for all and cannot be negotiated.

c *Potential for Harm*:

Given that the wagering mechanic is not directly linked to the monetisation of the WayBetter service, the possibility that the company directly benefits from increased betting by participants is absent. Furthermore, the degree to which the final outcome is determined by participants, rather than by chance, removes a notable degree of risk. This focus on individual agency, and the fact that many events last several weeks or more, restrict the potential for problematic behaviour to develop on the part of participants.

d. *Protections*:

While the terms and conditions state that the service is only intended for use by those over the age of 18, no age verification processes are featured. Indeed, there do not appear to be any mechanisms by which individuals can set spending limits or self-exclude if desired. However,

WayBetter will remove under 18s from the service if they receive relevant information.

e. Trust:

Information provided in the terms and conditions section states that the service follows all relevant data protection and privacy legislation based on where users reside, in addition the site uses 128-bit SSL encryption, meaning a good level of security is present.

5.1.1.4. *Concept: Representational Characteristics.*

a. *Gambling References - language and terminology:* Moderate amount.

While the site incorporates “bet” in its name, other references to gambling are limited: “bet” (noun and verb), “pay/paid out”, and “pot” (as in prize pot). The majority of language references terms such as “motivation”, “fun”, “social games”, etc.

- b. *Gambling References - Imagery:* No gambling imagery is used.
- c. *Gambling References - audio:* No gambling audio references are used.
- d. *Valence:* Gambling is presented somewhat positively.

As described previously, betting is presented as a way of encouraging individuals to reach their goals: “betting supercharges motivation”. Yet the site does not mention betting as often as would be expected considering its role as the core mechanic, instead it highlights positive qualities of community and incremental goal-setting.

e. *Marketing:* None.

Gambling is neither used to promote a separate service/product, nor is a specific gambling product/service being promoted by WayBetter.

Concept: Gambling Motivations Gratified.

a. Chance to Win:

WayBetter is centred on the concept that the desire to win money increases the likelihood that goals will be achieved, while the landing page prominently features a graphic displaying total prize pot paid out to players.

b. Dream of Jackpot:

The sums available to win are not particularly large and are subject to division among multiple participants, as such, this motivation is not gratified.

c. Social Rewards.

Furthermore, the social rewards of gambling are gratified as the site places great emphasis on the community of fellow players that is accessed through betting on different games/challenges.

d Intellectual Challenge:

Success is based on ability to successfully perform challenges, rather than on topic knowledge, as such, this motivation is not gratified.

e Mood Change:

Finally, the motivation for mood change is gratified to some degree as the site states that by taking part in games that incorporate betting, players experience heightened levels of fun and motivation.

5.1.1.5. *Concept: mechanics.*

a Staking Conditions:

Ability to participate in the games/challenges is restricted to those who are both members of WayBetter and who have paid an admission fee for the specific event, however, membership is available to any member of the public.

b. Stake type:

Bets are made using US\$.

c. Event Format:

WayBetter employs a direct translation of an existing activity.

d User Influence:

As with any form of betting on oneself, the user exerts almost total control over the *outcome, subject to external factors.*

e. Reward Type:

Although winnings are credited to an individual’s account in the form of points, these points are directly equivalent to currency, with one point being worth one US\$.

f Reward Pool:

All rewards are limited to those winning participants who are members of WayBetter, have paid the relevant admission fee, and have staked the required amounts. Games/challenges are open to those who have not staked any money, but such individuals are ineligible for any payout.

5.1.2. *Section 2 – Quantitative assessment*

The quantitative assessment uses the knowledge extracted in the previous section in order to provide a subjective quantitative assessment (Fig. 7); radio charts are included in order to provide an easily accessible visual overview (Fig. 8) and which also allows comparison between different services or products.

Analysis reveals that WayBetter is a service which primarily uses gamblified experiences and interactions as a means of engaging users for positive personal outcomes, rather than either driving monetisation or promoting gambling. This interpretation explains the apparent discrepancy between a notable lack of references to gambling on the website and the fundamental importance of betting to the service. Similarly, the focus on gambling as a means of achieving positive personal development is reflected in the fact that the service gratifies social motivations and the opportunity to achieve individual goals rather than the possibility of substantial monetary gain.

The gambling mechanics used by WayBetter highlight the fact that both participation and rewards are, to some degree, restricted, while also stressing the high degree of influence which users can exert over the final outcome. The degree of user influence means that while the WayBetter service is not legally considered gambling under the majority of existing legislation, it can be considered a partial-replication and is, therefore, gamblified. The ability to stake money in order to potentially win points which can be directly exchanged for money may also mean that the service would fall foul of regulations in countries where gambling is more closely restricted. Some may also highlight the fact that WayBetter could be viewed as utilising deposit contracts (Stedman-Falls & Dallery, 2020); while deposit contracts have themselves been referred to as being both gamified (Tran, 2019) and gamblified (Reinelt, Adam, & Röthke, 2021), the primary difference lies in the fact

Interaction Context.

- a. User Interactions: Multiple interactions (extended period) - 5
- b. Gambling Fidelity: All elements - 5
- c. Gambling Primacy: Sole - 5
- d. Role of Gambling - Promotion: Gambling is neither promoted, nor used to promote other products/services - 1
- e. Role of Gambling - Engagement: Gambling notably strengthens engagement – 5
- f. Role of Gambling - Monetisation: 4 (see descriptive text above).

Ethical Concerns.

- a. Impact: Positive/desirable outcomes for individual users - 2
- b. Exploitation: System is transparent and fair to all - 1
- c. Potential for Harm: Potentially harmful use is very limited - 2
- d. Protection: No protections apparent - 5
- e. Trust: Site is trustworthy and secure - 1

Representational characteristics

- a. Gambling References - language/terminology: Moderate amount - 3
- b. Gambling References - Imagery: None - 1
- c. Gambling References - Audio: None -1
- d. Valence: Positive - 5
- e. Marketing: None - 1

Motivations gratified

- a. Chance to Win: Very large amount - 5
- b. Hit the Jackpot: None - 1
- c. Social Rewards: Large amount - 4
- d. Intellectual Challenge: None – 1
- e. Mood Change: Moderate amount – 3

Gambling Mechanics

- a. Staking Conditions: Conditional – 3
- b. Stake Type: Established currency – 5
- c. Event Format: Direct translation of existing activity – 5
- d. User Influence: Significant influence – 5
- e. Reward Type: Open system, currency – 5
- f. Reward Pool: Restricted pool - 3

Fig. 7. Completed assessment checklist.

that those using WayBetter have the possibility to win more than their original deposit, or in the language of the service, their “bet”.

Finally, the radar charts, in particular, highlight the fact that while WayBetter can largely be considered ethically sound, the service is notably lacking in tools or procedures designed to protect users.

6. Discussion

This work presents a framework for identifying and understanding the varied aspects of gamblification, and a two-stage process by which it can be employed to provide both qualitative insights and quantitative evaluation of potentially gamblified experiences. Finally, an example is presented in order to illustrate the application of the framework to an existing gamblified service. The framework was found to be easy to apply, comprehensive, and provided a rich understanding of how gamblification was employed by the target service. In addition, the combination of qualitative and quantitative approaches provided complementary information that can be utilised according to the specific needs of the user. The usability was further enhanced by the varied presentation of information, with both text and radar charts being employed.

The framework was inspired by a previously published definition of gamblification (Macey & Hamari, 2022). However, as a result of a

review of literature associated with the topic this research identified additional areas for consideration which were not incorporated in the existing definition and which, therefore, enhance the theoretical perspectives underlying the understanding of gamblification. The first of these relates to the area of ethical implications, an important and necessary area when considering the varied ways in which gamblification manifests. The framework incorporates ethics as a set of items based on a review of relevant literature, in an attempt to ensure comprehensive coverage of relevant areas. Given the importance of ethical implications of gamblification, it may be desirable to develop further items if new issues arise.

A second area highlighted as a result of the literature review was that of gratifications afforded by gamblified experiences. As discussed previously, the five-factor model (Binde, 2013) was chosen for inclusion as is the most holistic of existing models dedicated to the motivations driving participation in gambling, while at the same time being parsimonious. However, this is a theoretical model and has not yet, to the best of our knowledge, been empirically validated; indeed, while work exists which has empirically investigated specific motivational factors there is a notable dearth of empirical work which investigates gambling motivations holistically. Furthermore, there may be alternative models or perspectives which can be applied to motivations for participating in gambling, for example developing items based on, the Theory of

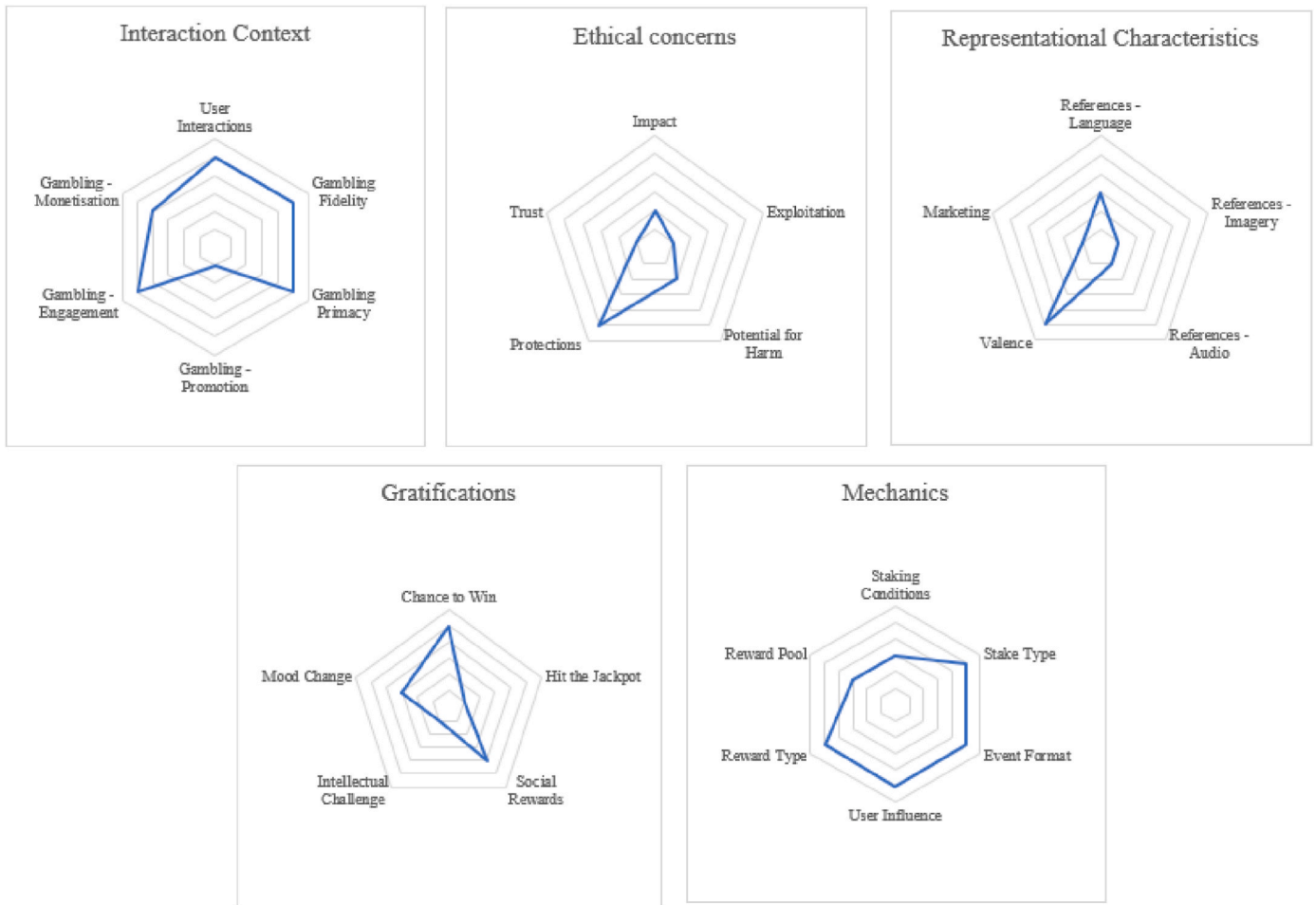


Fig. 8. Radar charts showing assessment scores across five domains.

Planned Behaviour (Ajzen, 1985, 1991), Prospect Theory (Kahneman & Tversky, 1979), or the Advantage Model (Shafir, Osherson, & Smith, 1993). Developing and validating items to reflect these different theories was, however, beyond the scope of this work and as such the decision was made to utilise an existing theoretical model which is both comprehensive and parsimonious. When discussing the topic of gambling mechanics, the existing definition of gamblification (Macey & Hamari, 2022) explicitly excluded design features which exploit psychological processes, and which have been associated with the increased likelihood of problematic gambling. During the development of this framework the authors chose to maintain this approach, deliberately excluding features such as “losses disguised as wins” and “near miss”, instead choosing to focus attention on the mechanics of staking, outcome, and reward. This decision reflects the fact that while the features highlighted above have been shown to be associated with problematic gambling behaviours, they are associated with certain types of gambling, such as slot machines and other electronic gaming machines (Barton et al., 2017; Newall, 2019). Given that this framework is intended to be used across diverse implementations, it was decided that such specific features should not be included. However, the potential exists to augment the existing framework in order to address such features in the future.

It is recommended that the usability and efficacy of the framework as a tool be investigated in the future, for example through workshops with expert stakeholders or via a series of field tests. Such research could also explore the potential for not only assessing the conceptual framework, but also the potential to supplement it with new concepts or components. Finally, future research could also explore the possibility of using

the framework to be re-presented as a heuristic tool to guide ethical design of gamblified services and products.

6.1. Limitations

As described in section 3, conceptual framework analysis was employed in this study, with the finalised concepts and components extracted from a thorough literature review of contemporary material, both academic and grey literature. Accordingly, while the review was comprehensive, this framework cannot account for any areas or topics that are currently under-represented. A systematic literature review of gamblification would, therefore, be a productive avenue for further research. Furthermore, the concepts presented in this work are not constructs, meaning that the framework is suitable as a tool for evaluation and interpretation, but not as a model for gamblified experiences (Jabareen, 2009).

7. Conclusion

The conceptual framework presented herein offers a practical tool for identifying and assessing gamblified products and services across a range of contexts; while there may be scope to further refine the constituent elements, the current format offers meaningful insights into how gamblification is experienced and is not limited to specific applications or activities. The framework is expected to be of use to multiple stakeholders and has been designed to be easy to use and to produce a range of data outputs to suit all use cases and users: quantitative and qualitative; textual, numerical, and graphical.

In addition to the practical value of the conceptual framework, it also offers theoretical insights into our understanding and interpretation of gamblified experiences. First is that this research builds upon a small, but growing body of work which addressing gamblification. It draws from a wide range of disciplines and sources to deepen understanding of a topic which is growing in both social and economic significance. Second, it underlines the fact that these gamblified experiences should be considered in light of the ethical implications they have for both individuals and wider society, whether they be pro-social or detrimental. Finally, it highlights that the particular characteristics of gamblified experiences, and their potential success in realising intended outcomes, are impacted by the motivational drivers they gratify.

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CRediT authorship contribution statement

Joseph Macey: Conceptualization, Methodology, Validation, Formal analysis, Investigation, Writing - original draft, Writing - review & editing, Visualization, Funding acquisition. **Juho Hamari:** Conceptualization, Investigation, Writing - original draft, Writing - review & editing, Funding acquisition. **Martin Adam:** Conceptualization, Formal analysis, Investigation, Writing - original draft, Writing - review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

No data was used for the research described in the article.

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