Impact of gamification on employee motivation in situations of change in medium-size organisations in the United Kingdom.

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Abstract

This thesis tries to provide a comparative study and complimentary data analysis into the effectiveness of game design patterns such as LEGO Serious Play, Leaderboards and Collective voting in terms of the impact that gamification has in change management framework. The study is looking at how gamification impacts employees from a motivational and engagement, in change management tasks, perspective.

In a first instance, the researcher/author references and reviews key theories such as theory of fun for game design, motivational theory and change theory. Furthermore, a literature search/review for those theories has taken place to identify what the current scientific base has captured around gamification impact in engagement, motivation and performance of individuals and all potential limitations as well. This led to a clear and specific existing baseline framework. At a later stage, researcher/author describes the research strategy and methodology used to apply three specific gamification techniques to a real organisation (participants – n=20) which delivers change and is going through a transformation process. This included two different data collection methods; semi-structured interviews with organisation’s employees and participant observations within the organisation’s headquarters offices. The participant observation data collection compliments the interviews’ one, which acted as the primary method.

The study examines the impact the gamification techniques had on the organisation’s employees while they deliver change daily, their interactions within sessions and meetings, decision making events and other. Findings, through the thematic analysis process, include the participants’ feedback on their overall experience, reward and joyfulness when use gamification. Results show that gamification tools and techniques compliment positively employees within the change management framework, increasing the enjoyment of participation in change activities without increasing competitiveness and also enables more effective decision making. It is important to highlight that creativity seems that is increased as well, through gamification application.

It is hoped that knowledge and understanding of the impact of gamification techniques in change management framework could be found useful in an industry related environment and the results of this study could be extended to other areas as well.

Keywords: Gamification, Change Management, Employee Engagement, Motivation, Game Design Patterns.
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<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAU</td>
<td>Business-As-Usual</td>
</tr>
<tr>
<td>CIO</td>
<td>Chief Information Office</td>
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<tr>
<td>EDA</td>
<td>Exploratory Data Analysis</td>
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<tr>
<td>GDPR</td>
<td>General Data Protection Regulation</td>
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<td>LSP</td>
<td>Lego Serious Play</td>
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<tr>
<td>OCM</td>
<td>Organisational Change Management</td>
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<tr>
<td>RAID</td>
<td>Risks, Assumptions, Issues, Dependencies</td>
</tr>
<tr>
<td>SSI</td>
<td>Semi-Structured Interview</td>
</tr>
</tbody>
</table>
# Table of Contents

**Synopsis**  
- Background  
- Problem  
- Research Question  
- Research Method(s)  
- Results  
- Discussion  

**1. First Chapter: Introduction**  
1.1 Background  
1.2 Problem Statement  
1.3 Research Question & Methodology  
1.4 Delimitations  
1.5 Thesis Structure  

**2. Second Chapter: Literature Review & Scientific Base**  
2.1 Literature Review  
   - 2.1.1 Inclusion Criteria  
   - 2.1.2 Exclusion Criteria  
   - 2.1.3 Literature Review Approach  
   - 2.1.4 Review Analysis and results  
   - 2.1.5 Review Discussion  

**3. Third Chapter: Research Methodology**  
3.1 Research Strategy & Preparation  
3.2 Selected Research Methodology  
3.3 Selection of Data Collection Method  
3.4 Selection of Data Analysis  
3.5 Ethical Considerations  

**4. Fourth Chapter: Application of Research Method & Empirical Findings (Results)**  
4.1 Application of Data Collection  
   - 4.1.1 Part 1: Semi-Structured Interviews  
   - 4.1.2 Part 2: Participant Observation  

---

Page 5 of 78
4.2 Application of Data Analysis

4.2.1 Theory Operationalisation

4.3 Results

4.3.1 Review

4.3.2 Gamification Experience

4.3.3 Gamification Rewards

4.3.4 Gamification Joyfulness

5. Fifth Chapter: Discussion

5.1 Discussion of Results

5.2 Conclusion

5.3 Significance

5.4 Quality of the Research

5.5 Limitations of the research

5.6 Ethical and Societal Consequences

5.7 Future Research

References

Appendix A – Literature Review Analysis

Appendix B – Other Figures

Appendix C – Participant Information Sheet

Appendix D – Participant Consent Form

Appendix E – Semi-Structured Interviews Schedule

Appendix F – Participant Observation Grid

Appendix G – Reflection Document
### Table of Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1.</td>
<td>Thesis Structure.</td>
<td>14</td>
</tr>
<tr>
<td>Figure 2.</td>
<td>IQ1 Results.</td>
<td>32</td>
</tr>
<tr>
<td>Figure 3.</td>
<td>IQ2 Results.</td>
<td>33</td>
</tr>
<tr>
<td>Figure 4.</td>
<td>IQ3 Results.</td>
<td>33</td>
</tr>
<tr>
<td>Figure 5.</td>
<td>IQ4 Results.</td>
<td>34</td>
</tr>
<tr>
<td>Figure 6.</td>
<td>IQ5 Results.</td>
<td>34</td>
</tr>
<tr>
<td>Figure 7.</td>
<td>IQ6 Results.</td>
<td>35</td>
</tr>
<tr>
<td>Figure 8.</td>
<td>PO1 Results.</td>
<td>36</td>
</tr>
<tr>
<td>Figure 9.</td>
<td>IQ7 Results.</td>
<td>36</td>
</tr>
<tr>
<td>Figure 10.</td>
<td>IQ8 Results.</td>
<td>37</td>
</tr>
<tr>
<td>Figure 11.</td>
<td>PO2 Results.</td>
<td>37</td>
</tr>
<tr>
<td>Figure 12.</td>
<td>IQ9 Results.</td>
<td>38</td>
</tr>
<tr>
<td>Figure 13.</td>
<td>PO3 Results.</td>
<td>38</td>
</tr>
<tr>
<td>Figure 14.</td>
<td>Gamification Tools overall impact to Employees in Change Management Framework.</td>
<td>39</td>
</tr>
<tr>
<td>Figure 15.</td>
<td>The relationship of the research strategy and research method</td>
<td>65</td>
</tr>
</tbody>
</table>
Table of Tables

Table 1: Research Participants Demographics.  
26
Table 2: Data Analysis Themes & Interview/Participant Observation Questions.  
29
Table 3: Literature review & Empirical Findings comparison.  
40
Table 4: Summary of the Literature Review analysis  
53
Table 5: Interview Agenda.  
71
Table 6: Observation Grid.  
72
Synopsis

Background

Change management is an important process every organisation utilises to deliver products, projects, services, and organisational type changes such as transformation and improvements and they should effectively motivate employees to actively participate in change. Change management is defined as a way to transform organizations in order to maintain or improve their effectiveness (Tan, 2006).

There is a technique which could perhaps support employee engagement. It is called “Gamification” and it derives from a game design context (Mora, Riera, Gonzalez and Arnedo-Moreno, 2015) and the 21st century game design theory (Koster, 2014), starting with Salen and Zimmerman (2004) who defined game design fundamental principles for the 21st century. What has mostly motivated this thesis is Krath’s and Von Korflesch’s (2021) systematic literature review of designing gamification and persuasive systems which concludes with conceptual results that allow further research in terms of their effectiveness in various fields such as the change framework.

Problem

The problem this thesis tries to research involves assessing the impact - if any - of gamification on employee motivation, through a chosen set of specific game design principles, in situations of change management within medium-size organisations in the United Kingdom. The importance is driven by the limited available research of gamification application in the context of change management.

Research Question

How do the three gamification design patterns LEGO Serious Play (SeriousplayTraining, n.d.), Leader boards (docs.jivesoftware.com, n.d.) and Collective Voting (Dodge, 2012) motivate employees within medium-size organisations in the United Kingdom, in terms of engagement in the change management process?

The research question relates with the problem stated above, as many organisations apply gamification techniques which are based on practical applications but with no actual basis in research and related scientific data. That makes the gamification design principles look attractive and popular but not always applied as appropriate in different circumstances such as the change management process.

Research Method(s)

The theoretical framework of this research combines the theory of fun for game design (Koster, 2014), motivational theory (Ryan and Deci, 2000) and change theory by Kurt Lewin (1947) (Schein, 2010: 299).
The research strategy will be loosely inspired by an Exploratory Data Analysis [EDA] as per (Jebb, Parrigon and Woo, 2017). The research methodology that will be conducted is Mixed Methods (Migiro and Magangi, 2010), combining Semi-Structured Interviews with Participant Observation (Kawulich, 2005).

**Results**

As a result of the empirical data and the findings of this study, across all the setting, a 20% has not noticed any impact on either their motivation or engagement through the gamification techniques application.

On the rest 80% of the participants, a 75% of that has experienced a high positive motivational impact whilst a 25%, did face lower positive motivational changes, mostly due to their own perceptions in the effectiveness of those tools.

From an engagement perspective, it has been captured that, 70% of those impacted, have found themselves highly engaged, whilst a 30% of the participants expressed that their engagement was high but lower due to existing ways of working practices.

**Discussion**

This study is limited to the 3 gamification techniques which are described in the research question. It is also restricted to the United Kingdom and a medium-size organisation that faces a transformation process at the point of time of the study. In addition, the study is only exploring the motivational and engagement impact of the gamification tools, whilst there would be other aspects could be reviewed such as extensive performance, productivity, learning and communication which are not covered. Due to the empirical study taking place with participants from a financial company, there could be confidential information that cannot be shared or studied in depth from an ethical and societal implications perspective. The data collection is based on semi-structured interviews and complimented by participant observation and can be used as reference material in the future in other academic studies. The outcome of this thesis may of also be of interest to industry for transformational purposes.
1. First Chapter: Introduction

Every person, whatever their job or background, has somehow experienced change in their life. Humans, from their nature, are exposed to changes and they should be capable of adapting in different environments using their skills and knowledge. Many times, the change could be found mundane, other times change could be unexpected, but change can also be fascinating and make people feel excited.

Humans’ reactions to change are unexpected and could be modified based on different factors (personal or working environment, country, time, psychological situation etc.) and that could have positive or negative outcomes as a result.

As listed in Babin and Ghorashy’s (2019) conference paper with reference to leveraging Organizational Change Management to strengthen benefit delivery in innovation, the Kubler Ross (1993) and the ADKAR (Hiatt, 2006) models are used globally; many times, in organisational change, to observe the human behaviour and how they respond to change through different stages. The change framework would be one of the variables involved in this research.

1.1 Background

Change management is defined as a way to transform organizations in order to maintain or improve their effectiveness (Tan, 2006) and represents an important process every organisation utilises to deliver products, projects, services, and organisational type changes such as transformation and improvements. Despite the organisation’s level of change taking place, the key aim for each organisation is to make its employees aware of upcoming changes on time, to motivate them to participate in the change effectively. Most importantly, to increase their knowledge and improve their skills to motivate the employees to support the changes. A practical approach to achieve this objective is through the learning process.

According to the Organisational Change Management (OCM) framework (By, 2005), there is a technique which could perhaps support employee engagement called Gamification. Gamification, which derives from a game design context (Mora, Riera, Gonzalez and Arnedo-Moreno, 2015) and the 21st century game design theory (Koster, 2014), refers to “the action of making sense of things related to a game”. It is closely related with Schell’s (2008) description as “the act of deciding what a game should be”. Salen and Zimmerman (2004) who defined game design fundamental principles for the 21st century, explain that gamification should be run using an iterative process.

Krath and Von Korflesch (2021), in their systematic literature review of designing gamification and persuasive systems, have concluded that there are more than 60 different game design principles and patterns divided in categories such as user-oriented, system-oriented and context principles. Each of those categories are focusing on different outcomes in terms of their application in people settings.

This thesis is taking Krath and Von Korflesch’s literature review (2021) as a departure point, since their results were primarily conceptual, and it tries to provide a comparative study and complimentary data analysis. This analysis is limited to the effectiveness of three of the
available game design patterns (refer to research question) in terms of the impact of gamification in change management (Burman and Monstad, 2018). In addition, it considers how it could result in employees, being part of change teams, to be more engaged and actively participate with the change process, through gaming design patterns application.

1.2 Problem Statement

Many financial organisations in United Kingdom apply various gamification techniques (leader boards, badges, LEGO and others) which are based on practical applications without taking under consideration research and scientific data (Rivera and Garden, n.d.). They focus on the high-end profile that gamification design principles could provide to teams, but not in the effective application of the principles and the impact those have in terms of employees' active engagement in the change management process. This problem is of great interest as it becomes more popular and extended across the globe.

The practical problem that this thesis addresses is to make a comparative study (exploratory data analysis) over the existing theoretical gamification design principles framework. It focuses on how their application in a change management framework could influence employees, through the assessment of its impact in terms of employee motivation, within medium-size organisations in the United Kingdom.

1.3 Research Question & Methodology

The research question in this thesis is:

“How the gamification design patterns LEGO Serious Play (SeriousplayTraining, n.d.), Leader boards (docs.jivesoftware.com, n.d.) and Collective Voting (Dodge, 2012) motivate employees within medium-size organisations in the United Kingdom, in terms of engagement in the change management process?”

More specifically, LEGO serious play, as a community-based model, has been developed initially to support the exploration of alternative strategic planning tools and systems. Then, it transformed to a technique that increases the value of employees and the concept of being evolved in change, adapt strategies and collaboratively identify solutions for organisation issues and challenges (SeriousplayTraining, n.d.). Leader boards focus more on social competition by allocating points/marks/stars each time a milestone is achieved. This competitive environment does not contain any judgement but only intends to increase participants’ motivation to achieve better and potentially more objectives/outcomes. Collective voting is a flexible and collaborative way which allows groups of people to be able to vote options during a decision making process. Many times, within organisations, especially those operating in agile frameworks, tend to follow participatory approaches such as participatory budgeting where individuals’ opinions/ideas are available but only those cases which are mostly voted are those proceeding to the next phase of review/analysis. Other gamification design patterns’ such as points, avatars etc. are excluded due to their focus on individual behaviour principles which are classed as out of scope for this research.

The research question is answered via an Exploratory Data Analysis [EDA] applying the theory of fun for game design (Koster, 2014), motivational theory (Ryan and Deci, 2000) and change

As gamification and change management relates with people, their behaviours and their reactions when they deliver actions and tasks, a good research methodology is to use Semi-Structured interviews. That allows to capture their feedback of the use of gamification techniques while they deliver change within the organisation and this type allows more flexibility to participants feedback.

On the other hand, participant observation (Kawulich, 2005) will be used to support the validation of interview data collection. The researcher will watch, capture and analyse the day-to-day activities of the same and other participants using gamification techniques and how they react on individual cases. The researcher will observe how employees understand, participate and react to day-to-day change activities when gamification design techniques are applied, i.e., how participants use leaderboards, LEGO and collective voting and how that motivates them to participate more actively in change delivery. The actual research methodology process is described in Chapter 3 later on.

Data will be analysed in terms of gamification design patterns impact on employee active engagement, the overall employees’ reaction types of using gamification design patterns and how actively participate in change and operational teams.

1.4 Delimitations

Krath and Von Korflesch’s (2021) literature review includes a list of 60 available game design patterns, but this research is limited to the further study only of three of the gamification design patterns referred in the research question due to their focus on teams’ user-oriented social behaviour principles to allow social comparisons, social collaboration and social competition.

From a gamification perspective, this thesis is not including the theory of game (mathematics) but only the gamification as part of the theory of fun for game design and in terms of motivational theory, the research depth is focusing around the intrinsic & extrinsic aspects only.

In addition, study has explored only the motivational and engagement impact of the gamification tools, whilst there would be other aspects could be reviewed such as extensive performance, productivity, learning and communication which are not covered.

In terms of change management framework, the research studies only “change delivery” and “operational teams” within the organisation, which are involved in the product/service delivery process but also the day-to-day operations. Organisation consists of various other team types and departments which are excluded and not being studied as part of this research.

The research is restricted to a medium-size organisation that goes through a transformation process at the point of time of the study as it could be further researched in other organisation sizes and under different non-transformational circumstances.
1.5 Thesis Structure

The thesis structure consists of the following steps and is based on a generic thesis template provided by Paul Johannesson (2015), which is split into 4 main stages:

- **Stage 1**: Introduction
- **Stage 2**: Literature Review, Research Methodology
- **Stage 3**: Data Collection, Data Analysis
- **Stage 4**: Discussion of Results, Conclusion

*Figure 1. Thesis Structure.*
2. Second Chapter: Literature Review & Scientific Base

Although there is not a single way to conduct a literature review, it has been decided to follow a systematic approach in order to capture the relevant literature, evaluate the findings and summarise the key themes (Creswell and Creswell, 2017). The literature review structure has been based on the template provided by Paul Johannesson (2015a) since the research topic is relatively narrow, and the research question is clearly defined.

This literature review explores how the theories of fun for game design, motivational theory and change management theory are interconnected when it comes to the effective application of gamification design elements.

In addition, literature review explores, what is the connection between gamification principles and participants’ motivational impact from an intrinsic and extrinsic perspective (Ryan and Deci, 2000). Last but not least, the review focuses on how organisations can utilise gamification (such as the LEGO Serious Play, Leaderboards and Collective voting tools) effectively to provide a more enjoyable and interest working environment.

The outcome of this literature review can be used, as a further research topic, by other researchers studying the effectiveness of other gamification design elements other than LEGO Serious play, Leaderboards and Collective voting in the change management framework.

2.1 Literature Review

After defining the research topic and question, the next step is to identify the key words that emerge from them and would help in the further overall research. The main terms for the search were “gamification”, “change management” and “motivation”, followed by the words “collective voting”, “game design”, “Lego serious play”, “serious games”, “leaderboards”, “engagement”, “intrinsic”, “extrinsic” formulating this way the search strings (e.g., “gamification learning” OR “game design thinking”).

Using the above keywords, conduct of scientific based research took place using EBSCOhost (EBSCO Information Services, Inc. | www.ebsco.com, 2021) and Elsevier’s Scopus (Elsevier, 2016), since they both provide access to a plethora of scientific articles from various science fields, the majority of which are derived from peer-reviewed journals and book series. In addition, the Stockholm University e-Library (www.su.se, n.d) but also Google Scholar (Google, 2019) have been utilised, for additional related journals and articles.

Before the start of the relevant previous studies search, it was also considered important to determine the inclusion and exclusion criteria. For all the articles found, there was a decision made on whether it will be included or not in the literature review, depended on these criteria (Randolph, 2019).

2.1.1 Inclusion Criteria

- The gamification and change management studies and papers must have been published between 2002 and 2023 (last 20 years), with some exceptions on a few articles related to motivational theory and collective voting published earlier (after 1972).
● The studies should have been focused on gamification and motivation and how the game design patterns could have an impact in employee engagement.
● The studies/papers should have been written in English.

2.1.2 Exclusion Criteria
● Papers focusing on the theory of game (mathematics) and other motivational aspects than intrinsic/extrinsic.

2.1.3 Literature Review Approach
The search took place during January and February 2023. The next step was to involve the assessment of the research results, following a predefined protocol. The articles were divided into two different categories (“Relevant”, “Not Relevant”), which indicated if it would be excluded or included in the review. The papers were initially filtered by reading the abstracts available online, or in some cases reading the full paper when the abstract was not available; if a decision was unable to be made, it was excluded. This way, the literature review concluded a number of 16 studies and papers for the final analysis (out of 87 in total). Another useful tool of the Scopus database that was used throughout the search, is the forward and backward citation, allowing the conduct of deeper research and identifying other relevant content to the research topic. This method helped locate 6 more articles that were found to be relevant and useful, so the final number of papers for the literature review concluded to 22.

2.1.4 Review Analysis and results
Across all the literature review process and the papers selection, only one has been found challenging the adoption of gamification in many companies. That highlights that the challenges of accomplishing change within organizational hierarchies, as well as other concerns like demographics, ethics, and a history of failed attempts at gamification (Larson, 2019). This is due to change management process, that requires evidence of successful implementation but also a demonstrable return on investment (Dale 2014; Zimmerling et al. 2016). Even if previous research results proves gamification can improve learning, an 80% of the gamification efforts implemented by organisations fail to meet enterprise goals due to inadequate designs (Callan et al. 2015; Landers 2019; Pettey and van der Meulen 2012; Sargent 2017).

**Engagement**

The literature review analysis, as this is listed in Appendix A, highlights that gamification affordances such as leaderboards can foster engagement with enterprise systems (Nah et al., 2019), can lead employees to do more work than they are paid for (Lichtenberg et al., 2020). Amo, Liao, Kishore and Hejamadi (Amo et al., 2020), through their experiment, have identified strong causal evidence of points and leaderboards, as gamification design elements, triggering structural and trait competitiveness, affecting both engagement and performance growth of participants.
Lego Serious play, as another gamification element, has been found by participants as a positive engagement that created closer bonds within the team and better understanding of each other and challenges (Wheeler, Passmore and Gold, 2020). Additionally, it has provided tangible change in the way of collaboration and engagement with fellow participants and other colleagues. LSP can have a positive role to play in developing psychological safety and collaboration in organisational teams and that has motivated as one of the chosen gamification elements of this research. This is due to its ability to motivate and engage participants to participate in activities actively and collaboratively, such as within a change management framework.

Isser (2018), through their related thesis, have concluded that employees can be better involved in the overall process of transformation by making use of the digital tools more enjoyable and stimulating. They refer to game elements application into the change process would be appropriate to motivate individuals in a new way making their roles and responsibilities more fun and interesting. Finally, organisations can adapt better to an increasingly complex environment through motivation engagement and early involvement of key stakeholders in the change management process.

**Motivation**

Existing literature shows that there is an impact of gamification increasing the motivation and commitment of the organisation members (Alhammad and Moreno, 2020). In a similar manner, Xu et al. (2021) through their systematic review conclude that points, badges and leaderboards were found to be the most effective media for using gamification to grow intrinsic motivation, reinforce motivation and enhance self-efficacy, fostering an environment for participants to complete more activities.

On the other hand, Mekler et al. (2013), have concluded that specific game features may promote certain behaviours without affording enjoyment/intrinsic motivation but at the same time, they believe that game elements seem to function as extrinsic motivators. In the same line, 4 years later, Mekler et al. (2017) have extended their research on points, levels and leaderboards remaining functioning as extrinsic incentives, effective only for promoting performance quantity.

The above literature review findings compliments the research question which focuses on employee motivation and engagement through specific gamification techniques such as leaderboards.

**Performance**

From a performance perspective, Landers and Landers (2014) have proven that random assignment of experiment participants to leaderboards supported a causal effect with 29.61 times more interaction using leaderboards than others in a controlled condition. This results that leaderboards can be used to improve performance under certain circumstances.

In terms of collective voting within teams, Mueller, Gerber and Schaub (2021) have assessed the promises and pitfalls of collective voting and concluded they are exaggerated. Collective
voting promises enables cue-taking and discursive bridging but also causing social pressure and abstention. Garg et al. (2019), exploring options around collecting decision making in a setting, they provide a proposal of a local voting algorithm which supports collecting the voting process.

**Limitations**

The literature review has limitations as well, with mixed findings from existing gamification studies impacting methodological limitations (Amo et al., 2020). What has become clearer is that gamification elements could have different outcomes in human behaviours and attitudes, and some could be more effective than others, depending on the workplace motivational forces (Landers and Landers, 2014). Gamification is not necessarily linked with autonomous motivation because of limited observation in performed tasks (Lichtenberg et al, 2020) and the application of game elements in a control condition did not significantly affect competence or intrinsic motivation (Mekler et al., 2017).

In terms of Lego Serious Play, Wheeler, Passmore and Gold (2020), limited their IPA in the experiences of a small number of participants which does not reflect the potential implications of gamification application in bigger groups. Palmquist (2023), highlights potential inaccuracy of ethnographic design research outcome due to criticism for the lack of objectivity and research bias factors but also similar to above, potential problematic nature of study data due to observation in smaller teams.

From a change management perspective, and due to the involvement of different organisational roles and aspects, may require designing different gamification strategies as that increases the gamification complexity (Alhammad and Moreno, 2020).

**Overall**

Overall, Prasad and Rao (V and Rao, 2020), on their paper, have concluded as part of their research that gamification leads to enhanced employee engagement, operational efficiency, and saving of resources.

LEGO Serious Play is used as a symbolic system to help with understanding of the world and plays an important role in the development of thinking (McCusker, 2019). LSP is found (Tawalbeh et al., 2018) to be a suitable methodology for identifying improvements by delineating the actual situation and procedures in the business structure. LSP acts as a learning enabler by creating clarity and support mechanisms for innovation development and improvement. Cherapanukorn and Jintapitak (2017), through their research including interviews with participants, have concluded that LEGO Serious play was successfully conducted for developing a revised vision and future action plan of the organisation. Is also described by them as the perfect technique for enabling and enhancing creativity, communication, evaluation and simulation within a workshop framework.

Taking under consideration Burman and Monstad’s (2018) research regarding gamification as a communication tool in the change process, they recommend that, through interaction, it helps employees understand, accept and contribute to intended transformation. Gamification makes
the employee's use of digital tools more enjoyable and stimulating which supports a sociotechnical change process and can be used as well, to engage and motivate employees in a new way.

2.1.5 Review Discussion

The literature review has highlighted that gamification plays an important role in people engagement, motivation, performance increase, operational efficiency and could contribute positively to the establishment of a powerful and productive working environment. Gamification tends to provide more enjoyment and stimulation to humans, especially when it comes to change management which usually contains repetitive and boring long-term commitments. Overall, according to the literature, gamification acts positively to employees’ understanding, acceptance and contribution to intended organisational transformation.

Gamification design elements such the use of LEGO and leaderboards have a positive impact on participants' interactions in both individual and team level, triggering competitiveness and boosting engagement and performance growth. LEGO Serious Play is found as a learning enabler and a bonding tool that helps teams to work closer and more collaboratively by understanding better challenges and supporting employees from a psychological safety perspective. As a tool, it actively enhances creativity, communication and organisations’ vision and target evaluation.

From a motivational perspective, the existing literature summarises the direct impact of gamification application in terms of both intrinsic and extrinsic motivation by enhancing self-efficacy. Leaderboards specifically, tend to function as extrinsic motivators for people to achieve external goals as part of the change management process. In terms of performance impact, the literature review highlights the important role leaderboards play in people interactions. From the other side, the collective voting gamification technique is moving towards a bipolar position that enables discursive bridging but causing social pressure in parallel even if there are voting algorithms available to support the collecting voting process.

The literature review has also confirmed that the gamification design elements application in working environments and its effectiveness is limited and most of past research studies have been closely performed with small number of participants where observation is easier. Not one specific gamification design technique should be used for all different situations and circumstances, as LSP, leaderboards and collective voting are different tools that have different impact on behavioural and motivational outcome.
3. Third Chapter: Research Methodology

This chapter includes, discusses and determines the research methodology and discussion of research strategy, data collection and data analysis methods as those presented in Figure 15 (see appendix B).

It is important to highlight that the organisation that the research will take place within, has not used gamification techniques in the past and its employees are not currently applying any of them. The researcher, as a current employee in the organisation and specifically performing in a role as Agile Coach, will introduce the 3 specific selected gamification patterns (see research question). This will take place through existing change delivery projects ceremonies and tasks as a form of intervention with the teams participating in change activities. Those include Iteration Planning, Review and Retrospective sessions but also Daily stand ups for agile teams whilst for waterfall-type changes that includes work breakdown structure, functional requirements gathering or RAID\(^1\) log reviews. The organisation delivers waterfall and agile projects/changes which target to deliver valuable products to its customers in the financial market and require some transformation to enable this delivery to take place faster and more efficiently.

According to Denscombe (2010), the good research guide involves the below key questions: 1) Is the research suitable and will it provide appropriate kind of data? 2) Is the research feasible to take place and could be done in terms of time, resources and accessibility? 3) Is the research ethical, does it require participation consent, guarantee confidentiality and avoid harming participants?

3.1 Research Strategy & Preparation

Research strategy is the high level guidance and the action plan that includes the purpose, research problem and the framework selected for collecting and analysing available data. The choice of the research strategy and research method is clearly described and motivated based on the research question.

In order to target the research problem and consequently to answer the research question, **Exploratory Data Analysis [EDA]** will be selected as the research strategy for this thesis, combining **mixed method** research methodology (Migiro and Magangi, 2010). According to Jebb, Parrigon and Woo (2017), exploratory data analysis is an approach used to analyse data sets to summarize their main characteristics, sometimes by using statistical graphics but also alternative data visualization techniques. EDA is used mostly to allow researchers to see what the data can tell beyond the formal models. Initially, exploratory data analysis has been promoted by John Tukey since 1970 (Tukey, 1977) to encourage statisticians to explore the data, and formulate hypotheses to lead in new data.

The research will be based on the theory of fun for game design (Koster, 2014), motivational theory (Ryan and Deci, 2000) and change theory by Kurt Lewin (1947) (Schein, 2010: 299). The mixed methods will be selected as they compensate for inherent weakness or bias, moving

\(^1\) Risks, Assumptions, Issues, Dependencies
the analysis forward contrasting methods to show that one method is informing the other. In terms of sampling, information from one method can be used as the basis of a sample of people selected to participate in the other method (Almalki, 2016).

Another suitable and alternative research strategy could have been the case study, which is used for small-scale research, looking at specific instances instead of focusing on generic aspects (Denscombe, 2014, p.54). If the research question was not focusing on answering if the gamification impacts employees' motivation and was concentrated on why that happens, then a case study would have been more suitable (Denscombe, 2014, p.55). In addition, surveys could be an alternative research method in order to investigate some aspects of the gamification techniques application as a phenomenon. As Denscombe (2014, p.30) highlights, surveys could have a major disadvantage, and this relates with the data lacking depth and detail. Finally, action research as a research strategy, which produces useful knowledge by addressing practical problems in real-world settings (Altrichter et al., 2002) could be used but it would be difficult to apply within the defined research time scale.

3.2 Selected Research Methodology

The choice of the research method is selected in relation to the research strategies and methods that are used in current, related research studies. The research methodology which has been used in this thesis is mixed methods (Migiro and Magangi, 2010).

Research Method 1

The primary research method that will be used is the Semi-Structured interviews in order to capture the participants feedback related with the use of gamification techniques while they deliver change within the organisation and this type allows more flexibility to participants feedback. As per Adams (2015), Semi-Structured interviews are usually conducted with one respondent at a time and include a blend of closed- and open-ended questions which are followed by some follow-up questions focusing on “why” and “how”. Usually, the SSI takes one hour to complete, so it does not fatigue the interviewer or participant. SSI offers some good benefits to research, despite other disadvantages such as their cost. These types of interviews are appropriate when there are many open-ended questions that need follow-up queries.

Researcher should make sure that there is a positive first impression with the participant(s). With appropriate request and permission from the participant, will record the interview, in order to allow the interviewer to be actively engaged and focus on the next question instead of focusing on answer writing. The environment interviews will take place involving sensitive information in such cases some notes should always be written instead of being recorded due to confidentiality. Researcher will be fully prepared in case the respondent declines to answer questions. In case permission is not given for recording using a device, alternative ways to conduct the interview is by the use of booklets, legal pads or nowadays electronic tablets or laptops.

A vital factor for researcher to conduct SSI is their preparation which dictates they should know the questions should be asked thoroughly, know the scope and the priority against the research framework. In any way, the interviewer should not be surprised or strange by answers given by participants and handle the responses appropriately each time. As gamification techniques
are expected to be something new for the participants, researcher should expect to get back questions regarding terms which are unknown or probably rephrase the question(s).

Research Method 2

The **participant observation** (Kawulich, 2005), will allow the researcher to watch, capture and analyse the day-to-day activities of the participants and record conduct under the widest range of possible settings in order to interpret participants behaviours in a natural setting. The participant observation method is assumed appropriate for this research instead of other methods, because it provides flexibility for passive, moderate, active and complete researcher participation (Spradley, 1980). According to Stacey and Howell (1996), the four stages that most participant observation research studies are establishing rapport or getting to know the people, immersing oneself in the field, recording data and observations, and consolidating the information gathered.

Participant observation deals with observing the participants in a specific setting in order to familiarize with the involved groups/teams/participants and to gain a better understanding of cultural aspects (Denscombe, 2014, p.60). Researcher will observe how employees understand, participate and react to day-to-day change activities when gamification design techniques are applied, i.e., how participants use leaderboards, LEGO and collective voting and how that motivates them to participate more actively in change delivery. All the observations will be recorded in a safe manner and will be analysed appropriately. In relation with the semi-structured interviews selected as primary method, the collected data will be complimented by further validation of its accuracy. That will help providing useful insights from a broader but also narrower perspective in terms of gamification principles impact in teams and individuals within the change management framework.

**Research Duration**

The research period includes only three months, **March 2023, April 2023 and May 2023**. For that reason, the qualitative research, semi-structured interviews and participant observations will provide a snapshot of how gamification is applied within the change management environment rather than a periodical overview (Denscombe, 2021, p. 54).

**Potential researcher’s background impact to the research**

Researcher’s role within the organisation is an experienced Agile Coach working for the organisation around 7 years. It is worth mentioning that, potentially, the participant observation process could have different outcomes if the researcher was a totally unknown, to participants, person but is expected to have no impact at this time. Researcher will be actively involved in the training, coaching and practically applying the gamification techniques through interactive sessions prior or during change delivery activities/projects within the organisation.

**3.3 Selection of Data Collection Method**

As mentioned earlier, the data collection for this thesis will take place in electronic format through predefined open questions interview template and participant observation form. It will be using as source the data from the **Semi-Structured Interviews** and **Observations** (refer to
Appendices C-F for data collection templates). Before the data collection phase will be initiated, the researcher will become familiar with the setting of the organisation that would be assessed. Researcher should be adaptive and flexible, but also pay attention to the wide and narrow perspectives. Due to the motivational factor and variable, researcher should be careful at all interactions within the setting, conversations, reactions and interactions.

The Semi-Structured interviews will include specific parameters such as the interview venue selection which in the case of this thesis have taken place within a UK organisation operating in the financial services sector and specially be part of the CIO department. The interview documentation will consist of the interview guide, recordings for transcription and field notes which would be captured during the interview phase with participants. All the data will be gathered as part of the study, collected, temporarily stored, and presented in an objective and honest way. Any experimental teams and their members’ personal information remain anonymous and confidential. In case of specific questions informed consent should be required, they will be asked to provide in advance (see appendix D). The interview participants will be selected from a highly regulated environment which could expose organisational information and the risks should be limited. A representative sample has been used for this thesis, which represents a subset of the organisation’s employees. As per DJS Research (2021), this type of sampling is made up of a small quantity of the teams’ members whose characteristics represent the entire population being studied. As researcher will be unable to gather data from every single person within the organisation, therefore the research will rely on a representative sample. This sample will be a good indication of what the population characteristics and behaviours are (i.e. roles and responsibilities, knowledge level, experience level etc), whilst remaining unbiased. More demographic information of the representative sample are provided later on (See Chapter 4, Table 1). For that reason, there will be given a written consent form regarding the researchers, the research topic and goal and expectations about the participants contribution. They will have the right to withdraw the consent anytime during the research period (see appendix D). The subjects and questions will be exposed to previously defined numbers of participants and will not be extensive due to the limited available time for research. Data will be available only to the researcher, research supervisors and research senior faculty forum for the duration of the research.

3.4 Selection of Data Analysis

Once the data questions and goals will be defined and data will be collected, the qualitative exploratory data analysis will take place in three further steps: data reduction, data display and the drawing of conclusions (Miles and Huberman, 1994). Data will be analysed from 3 different perspectives: in terms of gamification design patterns impact on employee active engagement, the overall employees’ reaction types of using gamification design patterns and how to actively participate in change. That will be concluded with the differences in motivational and engagement level between different team types.

Data reduction should include the preparation, selection, coding and categorisation of data, and through the initial exploration and analysis of data into categories/themes/concepts, the data display would focus on different data illustration in matrix, graphs or charts format. The draw of conclusions will be achieved based on how the data are displayed such as tables, figures or charts but also illustrations by quotes/pictures or visual models.
In order to be able to explore qualitative data, it is necessary for the researcher to use and apply the method called **thematic analysis**. The key advantage of this method is that it enables a better understanding of the content and the relationship with the research problem and question using the reduction process of complex data (Denscombe, 2021, p. 331). The thematic analysis technique consists of several steps.

The first step will involve the researcher’s review of the available data by searching for meanings or patterns (Braun & Clarke, 2006). The second step is the coding process of the chosen data. As per Denscombe (2021, p. 331), each code should represent “an idea or an issue that is relevant for analysing the data” while those codes should be defined in advance. The researcher will take a small part of sampled data and perform the initial coding on those. Through this step, the researcher will detect potential flaws during the code definition before it is applied to the rest of the available data. In order to make sure that the coding process remains consistent, the researcher will run the coding check immediately after the first coding. The researcher will take under consideration the possibility that due to the data complexity; several applicable coding is required. For that reason, the researcher will detect the most common codes that are represented in those data.

The third step in thematic analysis is the themes identification. According to Denscombe (2021, p. 333-334), this phase provides analytic insight into data through the capturing process of key features and insights into their relationship to the research question. Braun and Clarke (2006) consider and recommend themes as an important part of the thematic analysis. They also highlight the themes' definition being guided by the importance related to the research question. The fourth step of the process is the themes’ review for which Braun and Clarke (2006) recommend the researcher will perform firstly on the coded data extracts and then on the individual themes. Following this step, codes will be placed appropriately with other themes.

Last but not least, the thematic analysis last step refers to the finalisation of themes’ definition and naming and producing the report (Braun and Clarke, 2006). Research will proceed with the naming, which is an important task, as it reflects the essence of underlying data and at this stage, includes the analysis of themes, their interlink with other themes and relation to research questions.

### 3.5 Ethical Considerations

This research aims to perform the research following the ethical standards and all the core data that are being analysed are coming, except the observational method, from interviews with people. This draws attention to the privacy of participants' answers. The first thing to consider is whether the data that is to be collected is regarded as public or private (Townsend and Wallace, 2016, p.5). During the interviews and related data collection phase, all gathered data will only be captured during the sessions with interviewers respecting the organisational environment policies and data sharing controls. The research will take place within a financial institution where the banking environment is ethically sensitive by its nature. For that reason, the process will be followed will consist of set terms and conditions of particular questions. Those questions should avoid participants sharing organisational confidential or secret data/information which are not permitted as per the company’s security protocols. It is important to note that employees will participate in the research during their real life working circumstances which always refers to a non-predefined environment status and any potential
preparation to reactions. Employees should feel comfortable as any observation took place with discretion and without researcher bias. Of course, as to any environment where humans live and interact, it is expected to have participants who could feel uncomfortable expressing all their opinions publicly. Any references to private data or references to other individuals except the participants as individuals will be excluded from the data collection and analysis, except those cases where questions will be focusing on team interactions.

The thesis research question and overall goal is never aimed at any participants who, according to GDPR, are considered sensitive, and in these cases informed consent will be requested in advance (see appendix D). The specific research is aware of the potential risk that not all the participants of acting within teams where gamification techniques are applied would be providing information securely as part of the interview phase. In order to avoid any privacy issues or potential risks of harm, research will not quote or contain any part of the interview data collected which can be traced to the original source (participants). In addition, the findings from data analysis are being presented in themes or paraphrased quotes (Townsend and Wallace, 2016, p.7; p.11-12).
4. Fourth Chapter: Application of Research Method & Empirical Findings (Results)

This chapter will present the results of the study and describe the results after having applied the research strategy and research methods selected earlier. The key focus is to analyse the theoretical and empirical findings and compare these against the objectives of the research question. This section combines the results of the empirical data collected from the conducted qualitative semi-structured interviews as well as findings from the participant observations.

The first part presents a background of the selected participants that has participated in the research interviews. Thereafter, participants’ experiences regarding their motivational changes to be involved in change activities after the practical application of the three selected gamification techniques are outlined. The participants’ interview answers are divided into 3 themes, under the same common theme: those acting in a change delivery or operational teams and used/participated in events using any of the three gamification techniques.

The second part presents the background of the participant observation conducted by the researcher, acting also as an agile coach within the organisation in parallel, for the same categories of change delivery and operational teams and their reactions during gamification techniques application.

All interviewees have been asked a generic question referring to their gender, age, occupational level and team they are involved within the organisation. The 20 selected participants’ demographics are, as described below, which refer to both data collection methods:

| Table 1: Research Participants Demographics based on representative sampling. |
|---|---|---|---|
| **Gender** | **Age** | **Occupational Level** | **Team Type** |
| Male: 10 | 18-24: 3 | Intern: 1 | Change Delivery: 13 |
| Female: 10 | 25-34: 8 | Entry Level: 3 | Operational: 7 |
| | 35-44: 3 | Non-Managerial: 10 | |
| | 45-54: 5 | Jnr. Management: 3 | |
| | 55-64: 1 | Md. Management: 2 | |
| | | Sr. Management: 1 | |
| | | Executive: 0 | |
4.1 Application of Data Collection

4.1.1 Part 1: Semi-Structured Interviews

The semi-structured interview schedule can be found in Section 4.2. The interview schedule presents all the basic information and agenda that interviewer will go through with the participants. The interview questions are listed section 4.2, Table 2 and how they were phrased according to the theoretical framework. Also, they are presented in such a way to allow all the participants to develop new meanings in the context of the topic (Galletta, 2013).

It may be highlighted that not only the narrative provided via the semi-structured interview. The interviewees’ body language and non-verbal expressions have also contributed to a fuller picture of the experience of being involved in the gamification techniques trials.

The average time for interviews was 45 minutes and all participants were given the opportunity to ask questions and clarifications during the sessions. All interviews were mainly conducted face to face within the organisation HQ offices in Edinburgh, UK, in pre-booked meeting rooms, without external distractions and recorded on a digital recorder.

According to the quality research principles, the gathered interviews’ data was interpreted by the researcher, and then by the academic/thesis supervisor, to allow for any potential variations, in interpretation to be identified and noted properly. Rapport (2005) argues that in hermeneutic approaches to data collection and data analysis researchers should work closely with others and should be open to challenges (2005:133).

Data Deduction

Any data collected which should not or could not be used has been removed. Data reduction included the preparation, selection, coding and categorisation of data, and through the initial exploration and analysis of data into categories/themes/concepts based on the questions asked. It is expected through the interviews, interviewees to provide much more information than actually asked and that has been filtered appropriately. An example of information that has been removed, is case of personal data which did not provide any meaningful information. Another one is day to day work data which were not useful to the study; other include some examples of documentation and practices that participants were experiencing in their job role. Lastly, any private/confidential information which does not relate to the research questions and also would not be ethical to apply.

4.1.2 Part 2: Participant Observation

The participant observation as data collection method has been used in addition to the semi-structured interviews described earlier. The observations took place within the organisation’s offices, during working hours; observer requested permission to be present when team members were actively participating in calls, meetings, decision making events, agile
ceremonies or other types of sessions. Participants were actively joining sessions which included change delivery and gamification techniques in parallel. Also, it is worth noting that the teams were not always selecting to use the gamification techniques by default but sometimes after the researcher’s reminder and the team’s selection per case.

Through the participant observation the researcher was able to capture relevant events and participants along with the constructs of interest. In order to collect the appropriate data, the researcher used the Observation Grid (see appendix F) which allowed the data gathering process. That reminds the researcher about the key points of observation, the topics of interest and also act as a reflexive exercise in which the observer could reflect his own relationship with the situation at a specific point in time. The observation grid allowed it to act as a log of recorded data during the events and ceremonies that the teams were participating when the 3 gamification techniques were being used by the team members.

The predefined observation grid included the 3 key research elements (gamification techniques) in relationship with specific areas of observation should be monitored. As listed in the grid, the areas of observation included the monitoring of teams/individual behaviours when they are delivering change or acting as within an operational team; capturing interesting topics and notes from participant conversations and their feelings that took place within teams especially when there were discussions around the use of gamification techniques. Most importantly, the researcher, as an observer, focused on teams and individuals' creativity, communication and target achievement enhancements which have a direct relationship with their motivational aspect when using the gamification techniques. The overall observation covered some other aspects such as incident management and minor crisis situations, which could potentially contribute to the overall participants' reactions during the sessions and ceremonies of change delivery.

In terms of observation data, the process included the detailed descriptive notes of what is observed. That included a preliminary analysis of the understanding focusing on what does this data say about the phenomena related with the research question. In addition, it included the synthesis of interpretations of what the central meanings are elicited from the captured observations.

4.2 Application of Data Analysis

Through the thematic analysis method, as described in Chapter 3, interviews and participant observation data have been analysed based on the three gamification design patterns application impact on employee active engagement. It also considered the overall employees’ reactions while using the selected gamification design patterns, how actively participate in change and operational teams. It also included the differences in motivational and engagement levels between different team types.

The first step involved researcher’s review of the available data by searching for meanings or patterns between the different interviews outcomes and the observation captured data such as: 1) how participants interacted within teams on a recurring approach, 2) the potential competitive environment climate that could have been established due to such gamification techniques, potential temporary performance changes after the use of gamification tools, 3)
motivational changes to participants that could lead to different behaviour, and 4) how decision making took place in a more collective approach.

As per the second step of thematic analysis, research proceeded with an early data interpretation and analysis through a small part of the sampled dataset, which allowed to identify existing patterns in participants’ motivation. No errors have been identified even if the researcher took under consideration the possibility that due to the data complexity some could exist.

As per the third step in thematic analysis, themes identification took place as shown in Table 2. According to previous mention in Chapter 3, this step provides analytic insight into data through the capturing process of key features and insights into their relationship to the research question. That has been followed by the thematic analysis’ last step referring to the finalisation of themes’ definition and naming.

The questions interviewees have been asked and participant observation data captured, have been categorised as below, in 3 key themes:

*Table 2: Data Analysis Themes & Interview/Participant Observation Questions.*

<table>
<thead>
<tr>
<th>Theme</th>
<th>Interview Question(s) [IQ] &amp; Participant Observation Notes [PO]</th>
<th>Related with:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gamification Experience</strong></td>
<td>[IQ1] Do you enjoy playing games and interacting through gamification practices?</td>
<td>Motivational Impact [MI]</td>
</tr>
<tr>
<td><strong>Definition:</strong> Gamification experience theme refers to the interviewees overall experience in terms of the motivational theory after they have been exposed to the 3 gamification tools while the act on their day-to-day role</td>
<td>[IQ2] Describe your broader experience of interactions with others on an individual and team basis when you used the 3 gamification tools.</td>
<td>Engagement Impact [EI]</td>
</tr>
<tr>
<td>[IQ3] Did you notice if your performance changed related to change delivery outcomes?</td>
<td>[IQ4] Describe if the 3 gamification tools had an impact in your collaboration with others and if it has enabled you to enhance your communication approaches and</td>
<td></td>
</tr>
</tbody>
</table>

Page 29 of 78
approach committing to change delivery targets.  

**[IQ5]** Describe your motivation levels when using the 3 gamification tools and if that has impacted your self-efficacy.  

**[IQ6]** Describe your experience through the collective voting process when decisions should be made for delivery changes should take place. Did you notice any individual/team impact in the decision making process when it comes to change requirements?  

**[PO1]** How participants were acting on individual and team level while using the 3 gamification tools. Did participants support their team members while using gamification techniques? Did they enable discussions and collective approaching?  

### Gamification Rewards  
**Definition:** Gamification rewards theme refers to the interviewees thoughts if they have felt rewarded, during their exposure to the 3 gamification tools, while the act on their day-to-day role  

**[IQ7]** Describe if you noticed a competitive environment while using any of the 3 gamification tools.  

**[IQ8]** How did you find yourself compared with others?  

**[PO2]** How individuals/teams seemed to feel during different situations where the 3 gamification tools were used that could reward for their contributions to change delivery?  

### Gamification Joyfulness  
**Definition:** Gamification joyfulness theme refers to the interviewees opinion how creative, joyful, playful or  

**[IQ9]** Describe if you found yourself more creative and if so, how when using the 3 gamification tools.  

**[PO3]** Were there any enhancements in terms of creativity, communication and target evaluation  

| MI | MI | MI, EI | MI, EI |
not, they found their involvement and participation in sessions and ceremonies. This is based in terms of game design theory where the 3 gamification tools/practices have taken place versus the same or similar sessions without those tools available.

during the events/sessions where the 3 gamification techniques were applied.

<table>
<thead>
<tr>
<th><strong>4.2.1 Theory Operationalisation</strong></th>
</tr>
</thead>
</table>

The interview questions and participant observation notes have been established and constructed in such a way to effectively answer the research question on how the 3 selected gamification design patterns motivate employees in terms of engagement in the change management process. The organisation that the research took place within is going through a transformation process, so all participants are exposed to that during their daily job and are being impacted by the overall change framework. They are being asked to perform their duties and deliver change during an uncertain environment which is facing various changes in parallel. That causes an extra pressure on them, how they deliver, how they contribute to decision making and how they look at their future within the change management teams and roles.

In reference to section 1.3 (research question) and section 1.4 (research delimitations), the interview and observation questions defined, operationalise the 3 different theories used as part of the research methodology. Most of the questions, such as IQ1,2,4,6,9,PO1,2,3 are focusing on the game design theory which is closely connected with the research question; how the selected gamification techniques are enabling employees to be more engaged and active to participate in change deliveries. That relates with the potential impact due to boring situations and repetitive activities for long term that could slow down their performance and progress.

From the other side, questions such as IQ3,4,5,7,8,9,PO1,2 for which some of those overlap with game design theory, cover any motivational theory aspects. They are very important as they answer the thesis research question part regarding the motivational impact on employees when they use specific gamification techniques. Last but not least, change management theory is less covered through the questions, because this mostly refers to the transformational and team nature. Questions like IQ3,6,PO3 are focusing especially on change management activities and how those are being impacted while gamification techniques are utilised.
4.3 Results

4.3.1 Review

The overall results have derived from the interview questions and participant observation conducted. The graphs below show the statistics as captured through the data collected and are summarised at the end in a unique graph. This represents the overall impact to employees in terms of motivation and engagement within the change environment, after the application of the specified gamification techniques.

![Graph showing enjoy games and gamification](image1)

4.3.2 Gamification Experience

As per the [IQ1], interview participants have been asked if they enjoy playing games and interacting through gamification practices; 70% have answered that enjoy play games or participating in environments where gamification is applied, whilst a small number of 10% do not as they feel uncomfortable to follow, with a 20% being neutral and change their opinion in different circumstances. A participant mentioned specifically “I love playing games, using my phone mostly…but not at work”.

![Enjoy games and gamification](image2)

**Figure 2. IQ1 Results.**

As per the [IQ2], interview participants have been asked to describe their broader experience during their interactions with others on an individual or team level when they use the LEGO, Collective Voting and Leader board gamification tools; 80% have answered that experienced positive interactions and colleagues were open and transparent, whilst no one experienced negative interactions, with a 20% being neutral and did not experience any difference. Some of the participants expressed opinions such as “I couldn’t find differences on who I collaborated with my colleagues before…” or “I noticed no difference at all, believe it or not…”.
Figure 3. IQ2 Results.

As per the [IQ3], interview participants have been asked if they noticed any performance changes related with their achievement on change delivery outcomes when they used the gamification techniques; a 40% population has answered that they noticed their performance has been changed and was increased as they were able to deliver faster than expected their tasks, whilst another 40% described that were unsure if their performance had changed in terms of delivery outcomes. Some feedback captured on interview was referring to “I can deliver as fast as I can, but usually I am blocked due to dependencies…gamification tools cannot really unblock those”. Lastly, a 20% of the interviewees did not notice any performance changes at all.

Figure 4. IQ3 Results.

As per the [IQ4], interview participants have been asked to describe if the gamification tools had contributed in their collaboration with other team members and most importantly if they had enhanced their communication approaches and commitment to change delivery targets defined;

In terms of impact collaboration, 90% responded positively with a 10% noticed no difference, where communication enhancements noticed only to 40% of the interviewees as 60% commented that there was no communication changes between them and their colleagues due
to the use of gamification tools. One participant mentioned that “Leaderboard and collective voting has nothing to support with how I communicate with others...”.

Last but not least, regarding commitment to change delivery targets, the population was split in half with 50% of the interviewees confirming enhancement on better commitment than the other 50% who confirmed no change.

![Figure 5. IQ4 Results.](image)

As per the [IQ5], interview participants have been asked to describe how much they have been motivated to delivery change, and if that has impacted their self-efficacy; 80% have answered that they found themselves highly motivated to deliver changes using gamification techniques, as they felt that it was not just a boring and time consuming activity but they had been awarded and open up with others, and their self-efficacy was high impacted. Some good examples given were related with better time-management approaches used. A number of 20% felt that their motivation was low, and they still felt that gamification tools did not actually contribute effectively to their motivation levels. Their overall self-efficacy was not impacted.

![Figure 6. IQ5 Results.](image)

As per the [IQ6], interview participants described that collective voting process has very much helped and improved their decision making process related with change requirements, as everyone had the opportunity to contribute to the process and not just key delivery roles. They
provided examples of situations that requirements were defined wrongly and through the process, they managed to improve the quality of the final outcome; 80% have answered that they found a positive impact in decision making process whilst 10% expressed a neutral position, and another 10% did not notice any difference. People who found a positive impact said “I had space to express my opinion, not just follow the process...”, or “I was used to others making decisions and now I had the opportunity to be heard”.

![Impact of Decision Making process using Collective Voting](image)

**Figure 7. IQ6 Results.**

Through the observations took place in the organisation setting, the participant observation [PO1] focused on how participants were acting on individual and team level while using the gamification tools. What has been captured with great confidence is that team members were supporting each other in full (100%) and most of the members (90%), using especially the LEGO gamification tool, enabled their discussions to become more powerful and efficient. Gamification tools contributed to this process, as teams were expressing their satisfaction during the sessions that have seen increase of collaboration. There was a 10% of cases, that has been identified working the same way as before use of gamification tools. On the other side, a high percentage of 80% of the participants have been observed that enabled their collective approaching during the ceremonies and events through their change activities. A 20% were continued working the same way as before without approaching collectively some of the cases.
4.3.3 Gamification Rewards

As per the [IQ7], interview participants have been asked if they noticed or experienced that the team/working environment has been competitive, and they found themselves competing with their colleagues; 70% of them clearly expressed that there was no competition between team members whilst 20% were not sure if there was competitive or not. Very interestingly, one of the participants asked the researcher “How those tools really could bring competition between us, should those only act as bonding tools…?” A small 10% of participants notice that through the leader board gamification technique, some people were acting as were trying to compete with others who will get more points from the various activities during events and ceremonies.

![Gamification tools impact on individuals and team acting](image)

Figure 8. PO1 Results.

As per the [IQ8], interview participants have been asked how did they find themselves compared with others; A participant said “I am not sure if I can actually provide an answer to this question, but I will say that my x colleague was really excited with the new tools…”. about 65% of the population found themselves more motivated than others when they were comparing themselves with key reference their own perspective to others’ motivation levels. A 20% of them were neutral and did not want to provide any comparison feedback. On the other side, 15% of them, described that they found themselves less motivated than others, mostly because they were already negatively impacted due to the transformation happening within the organisation.

![Competitive Environment using gamification tools](image)

Figure 9. IQ7 Results.
Through the observations took place in the organisation setting, the participant observation [PO2] focused on how individuals and teams seemed to feel during the different situations where gamification tools were used in terms of rewarding their contributions on change delivery activities; 90% of them have expressed that they enjoyed been rewarded with points through the leader board and motivated them to delivery faster, more efficiently and better quality, as they were trying to get as many points as possible, but not from a competitive perspective. In a couple of case, people expressed partially negative opinion for the reward aspect or neutral position.

---

**Figure 11. PO2 Results.**

4.3.4 Gamification Joyfulness

As per the [IQ9], interview participants have been asked to describe if they found themselves more creative and how, when they were using the gamification tools.

It has been collected that 60% have noticed themselves being more creative when using LEGO technique due to being able to think more strategicaly, instead of the other 2 gamification tools. One participant mentioned “I found myself thinking like the company owner and define a strategy using Lego block, one per time...” and another said “I understand now how difficult is for executive to consider all parameters...” A 30% of the interviewees did not think that their creativity has been impacted, whilst 10% of the population expressed an interesting
opinion that through gamification tools their creativity has been decreased but that was due to their personal distraction of the new gamification experience.

![Creativity changes after using gamification tools](chart)

**Figure 12. IQ9 Results.**

Through the observations took place in the organisation setting, the participant observation [PO3] focused on capturing potential enhancements in terms of setting participants creativity, communication and target evaluation during events and session that teams are participating in. What has been captured with is that about 70% of participants showed more creativity than others. A low 15% of participants presented enhanced communication approaches whilst only a very low 10% of them showed enhancement related with target evaluation. Overall, Creativity has been noticed as the biggest enhancement during gamification techniques application.

![Creativity, Communication and Target Evaluation Enhancements](chart)

**Figure 13. PO3 Results.**
5. Fifth Chapter: Discussion

5.1 Discussion of Results

The figure below shows in a combined view all the interviews and participant observation data statistics in terms of motivation and engagement impact of employees in the change framework.

The results of the study are discussed based on the research question and presented in terms of:

- The three participating gamification design patterns impact on employee active engagement to participate in change management activities.
- The three participating gamification design patterns impact on employee motivation to participate in change management activities.

**Figure 14. Gamification Tools overall impact to Employees in Change Management Framework.**

As a result of the empirical data and the findings of this study, across all the setting, a 20% has not noticed any impact on either their motivation or engagement through the gamification techniques application. On the rest 80% of the participants, a 75% of that has experienced a
high positive motivational impact whilst a 25%, did face lower positive motivational changes, mostly due to their own perceptions in the effectiveness of those tools. From an engagement perspective, it has been captured that, 70% of those impacted, have found themselves highly engaged, whilst a 30% of the participants expressed that their engagement was high but lower due to existing ways of working practices.

Comparing the empirical results with the literature review overview, it has been found that:

<table>
<thead>
<tr>
<th>Literature Review (as of Subsection 2.1.5)</th>
<th>Empirical Findings (as of Subsection 4.3)</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEGO and Leader boards have a positive impact on participants interactions, triggering competitiveness and boosting engagement and performance growth</td>
<td>70% of the participants did not find the environment competitive due to leader board tool. Also, performance changes have been captured low to a 40%. Engagement was tracked high in percentages. Overall, there was positive impact to employees</td>
<td>Difference found in terms of competitiveness and performance. Engagement and overall impact has been captured high in both cases.</td>
</tr>
<tr>
<td>LEGO Serious Play is a learning enabler and bonding tool for teams to work closer and more collaboratively</td>
<td>All gamification techniques acted as bonding tool for teams and enabled them to work more collaboratively, with more positive interactions, and team members supporting each other.</td>
<td>The learning aspect has not been explored through the empirical findings. Empirical findings did not focus on organisation vision and less impact found in target evaluation.</td>
</tr>
<tr>
<td>LEGO Serious Play enhances creativity, communication and organisation’s vision and target evaluation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gamification enhancing self-efficacy in terms of intrinsic and extrinsic motivation</td>
<td>It has been captured that 80% enhancement in terms of self-efficacy through interview process</td>
<td>Self-efficacy enhancement noticed in both cases when gamification tools are used.</td>
</tr>
<tr>
<td>Leader board plays important role in performance impact and</td>
<td>Performance positive changes has been limited to</td>
<td>Empirical findings in terms of performance have identified low enhancement</td>
</tr>
</tbody>
</table>
interactions but also helps people achieve external goals 40% with 40% uncertainty and 20% no impact. levels. People did not reference any cases of external goal achievement.

Collective voting enables discursive bridging but also causing social pressure to the team members It has been found that collective voting enables and support faster decision making, specifically when it comes to change requirements Collective voting in empirical findings has been found more positive and acting as enabler/bridging that in literature review.

Not one specific gamification design technique should be used for all different situations and circumstances due to behavioural and motivational perspectives. 3 gamification techniques has been used and were targeting different events/ceremonies and scope It has been overall understood that each gamification technique has its own approach, scope and appropriate environment target to be effective. Not all gamification tools can be applied everywhere and all times.

5.2 Conclusion

This study is conducted to answer the following research question.

“How the gamification design patterns LEGO Serious Play (SeriousplayTraining, n.d.), Leader boards (docs.jivesoftware.com, n.d.) and Collective Voting (Dodge, 2012) motivate employees within medium-size organisations in the United Kingdom, in terms of engagement in the change management process?”

Through the introduction and literature review chapters focusing on the 3 key theories of game design, motivation and change, it was highlighted that gamification seems to play a very important role in employee engagement when they work in a productive and powerful working environment. Through the data collection process, it has been found that stimulation to humans and enjoyment are two important findings where gamification acts positively removing the feeling of boring long-term commitments and any repetitive tasks. The participant observation findings shows that the gamification experience brings better understanding of changes should be delivered within the organisation and how employees can effectively contribute on them, by being motivated and actively engaged to participate and not just deliver change.

The answer to the research question relates with previous research as an extension. More specifically, and as is stated in Background Section 1.1, this thesis has taken as a motivation starting point the Krath and Von Korflesch’s literature review (2021) which results were being primarily conceptual and provided a practical and methodological implementation of selected gamification techniques provided by them to a comparative study and complimentary data.
analysis. The findings were able to confirm or differentiate with their original positions as per Section 5.1, Table 3 comparison.

5.3 Significance

In this study, the literature review but also the empirical study has taken place with three popular gamification tools which are being used by many consultancy companies and agile coaches worldwide. The current use of gamification tools within organisation is taking place due to the popularity of those tools without specific academic reference. Organisations, transformational and agile coaching consultancies can use this study to understand the literature review (in general terms) and empirical study outcomes (in terms of change management framework) to improve their employee development practices.

5.4 Quality of the Research

The sources of literature review are derived from high credible sources (such as Google Scholar, EBSCOhost, Stockholm University Library, Elsevier’s Scopus) with a high results reproducibility. Findings and results are presented in a logical way for the content to be easily understandable.

Since the data collection is based on semi-structured interviews and complimented by participant observation, the data are assumed to a good quality and can be used as reference material in future from other academic studies. As the research question has been satisfied, the outcome of this thesis can also be used by industry for transformational purposes if of any interest.

5.5 Limitations of the research

The study and empirical method has been limited and applied in United Kingdom and within a banking corporation. The reason the specific country is only selected is due to researcher’s better accessibility on data collection. Due to the empirical study taking place with participants from a financial company, there could be confidential information that cannot be shared or studied in depth from an ethical and societal implications perspective.

The sampling team size (limited to 20 members) is restricted due to the difficulty of gamification design pattern’s application within larger organisations and teams because of the focus distraction. There are no restrictions in sex and age, as employees of various levels/types could be part of a change management team.

In terms of limitations and potential impact to the chosen research methods and data collection used for this research, there are no validity concerns as the tools, processes, and data validity
were carefully selected and treated. From a reproducibility perspective, the limitations listed above are not of a concern either, as the same research methods and data collection could be applied to any other sample size, team type, organisation type and different countries.

In terms of reliability, other research in future who may want to replicate the same research methods and data collection could derive in similar results as gamification techniques are applicable to any country, organisation type and industry. If the team size is bigger than this research sample, could probably make the data collection more difficult and time consuming. To avoid the generalizability of this research, research methods were not limited to one type only, but covered two different to ensure the outcome was audited and reviewed from different perspectives (semi-structured interviews and participatory observation). Thus, any limitations of the study are not impacting future replication of the same research methodology selection on the same topic.

As highlighted before, this study is limited to certain gamification techniques which can obviously be extended, and same research methods can be applied to other techniques promoting the extensibility of this study by other researchers in future.

The different research methods applied by the researcher in combination with the researcher’s role in the organisation (as an agile coach) provides credibility about the research results and outcome, due to the direct access to data sample and personal involvement in the training and application of research methods driven by certified experience as practitioner on those aspects.

5.6 Ethical and Societal Consequences

As the research study and the selected sample of participants, has not taken under consideration any aspects of sex, age, ethnicity, role within organisation and other similar individuals’ factors, it is intended that there are no ethical or societal implications that this study can give rise of.

It is worth to mention and important to highlight, that due to the strong banking environment in United Kingdom where the research took place, the high (not) failure expectation exist, and the different society levels employees are coming from due to the strong banking background in the country.

In terms of the research outcome and results, there are no privacy or confidentiality issues could arise because of the use of this research’s methods and data collection. There are no issues expected to raise related to socially vulnerable populations or health insurance/employment discrimination. Last but not least, any of the methods, data collection and results of this study are not expected to cause issues related to race and ethnicity of future potential other participants, communities or organisations.

5.7 Future Research

The empirical findings could be relevant and useful for industry-based wider application but also for further academic research focusing on different gamification design patterns, company
sizes, cultures, organisation types and through different geographical locations/areas. These include arts, food industry and others.

In addition, there are opportunities the above research to be extended to different research aspects outside of the selected motivational and engagement perspectives but also different than change management framework areas.


Dick, B., 1999. What is action research.

Djsresearch.co.uk. (2021). Representative Sample. [online] Available at: https://www.djsresearch.co.uk/glossary/item/Representative-Sample [Accessed 22 Sep. 2023].


Google (2019). Google Scholar. [online] Google.co.uk. Available at: https://scholar.google.co.uk/.

Herranz, E., Colomo-Palacios,R., De Amescua Seco, A. & Yilmaz, M., 2014. Gamification as a Disruptive Factor in Software Process Improvement


Mekler, E.D., Brühlmann, F., Tuch, A.N. and Opwis, K. (2017). Towards understanding the effects of individual gamification elements on intrinsic motivation and


## Appendix A – Literature Review Analysis

### Table 4: Summary of the Literature Review analysis

<table>
<thead>
<tr>
<th>Author(s), Year, Title</th>
<th>Methodology Data Collection</th>
<th>Participants</th>
<th>Findings</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landers, Richard N; Landers, Amy K; ,2014,An empirical test of the theory of gamified learning: The effect of leader boards on time-on-task and academic performance</td>
<td>Experiment</td>
<td>109 participants</td>
<td>Random assignment to leader boards supported a causal effect. 29.61 times more interaction using leader boards than control condition. Leader boards can be used to improve performance under certain circumstances</td>
<td>Some behaviours and attitudes are likely more effective than others. If research was done in mandatory workplace motivational forces could be different than voluntary workplace. Experimental conditions did not correlate with learning outcomes. Debriefing is not necessary in gamification, but debriefing serious games might itself is gamified</td>
</tr>
<tr>
<td>Author(s), Year, Title</td>
<td>Methodology</td>
<td>Data Collection</td>
<td>Participants</td>
<td>Findings</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------------</td>
<td>-------------</td>
<td>-----------------</td>
<td>------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Lichtenberg, Sascha; Lembcke, Tim-Benjamin; Brening, Mattheus; Brendel, Alfred Benedikt; Trang, Simon; ,2020, Can gamification lead to increase paid crowd workers output?</td>
<td>Experiment</td>
<td></td>
<td>320 participants</td>
<td>Some gamification affordances (badges and leaderboards) can lead participants to do more work than they are paid for</td>
</tr>
<tr>
<td>Amo, Laura; Liao, Ruochen; Kishore, Rajiv; Rao, Hejamadi R; ,2020, Effects of structural and trait competitiveness stimulated by points and leaderboards on user engagement and performance growth: A natural experiment with gamification in an informal learning environment</td>
<td>Experiment</td>
<td></td>
<td>88310 participants, 300 days, 215920 game interactions</td>
<td>Strong casual evidence of points and leaderboards triggering structural and trait competitiveness, affecting both engagement and performance growth</td>
</tr>
<tr>
<td>Authors</td>
<td>Methodology</td>
<td>Sample Size</td>
<td>Summary</td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>------------------------------</td>
<td>-------------</td>
<td>-------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Xu, Joy; Lio, Aaron; Dhaliwal, Harshdeep; Andrei, Sorina; Balakrishnan, Shakthika; Nagani, Uzhma; Samadder, Sudipta;</td>
<td>Systematic Review</td>
<td>381 papers</td>
<td>Points, badges and Leaderboards were found to be the most effective media for using gamification to grow intrinsic motivation, reinforce motivation and enhance self-efficacy, fostering an environment for participants to complete more activities</td>
<td></td>
</tr>
<tr>
<td>Mekler, Elisa D; Brühlmann, Florian; Tuch, Alexandre N; Opwis, Klaus;</td>
<td>2x4 Online Experiment</td>
<td>N/A</td>
<td>Game elements in a control condition did not significantly affect competence or intrinsic motivation irrespective of participants causality orientation</td>
<td></td>
</tr>
<tr>
<td>Authors/References</td>
<td>Type of Study</td>
<td>Papers</td>
<td>Identification of several game design elements such as badges and leaderboards and application in educational context</td>
<td>Systematic studies to assess gamification and its impact on learning are at infancy stage</td>
</tr>
<tr>
<td>-------------------</td>
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<td>----------------------------------------------------------------</td>
<td>-----------------------------------------------------------------</td>
</tr>
<tr>
<td>Nah, Fiona Fui-Hoon; Zeng, Qing; Telaprolu, Venkata Rajasekhar; Ayyappa, Abhishek Padmanabhuni; Eschenbrenner, Brenda;</td>
<td>Literature Review</td>
<td>15 papers</td>
<td>Specific game features may promote certain behaviours without affording enjoyment/intrinsic motivation. Same time, game elements seems that functioning as extrinsic motivators</td>
<td>Effectiveness of the game only refers to the behaviour of players after being prompted to play the game</td>
</tr>
<tr>
<td>Mekler, Elisa D; Brühlmann, Florian; Opwis, Klaus; Tuch, Alexandre N;</td>
<td>Systematic Review</td>
<td>87 quantitative papers</td>
<td>Specific game features may promote certain behaviours without affording enjoyment/intrinsic motivation. Same time, game elements seems that functioning as extrinsic motivators</td>
<td>Effectiveness of the game only refers to the behaviour of players after being prompted to play the game</td>
</tr>
<tr>
<td>Garg, Nikhil; Kamble, Vijay; Goel, Ashish; Marn, David; Munagala, Kamesh;</td>
<td>Experiment</td>
<td>2000 participants</td>
<td>Proposal of Local voting algorithm for collective decision making in a setting</td>
<td>N/A</td>
</tr>
<tr>
<td>Authors</td>
<td>Type</td>
<td>Participants</td>
<td>Details</td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------</td>
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<td>-------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Gasca-Hurtado, Gloria Piedad; Gómez-Álvarez, María Clara; Machuca-Villegas, Liliana; Muñoz, Mirna;</td>
<td>Observational Study</td>
<td>69 participants</td>
<td>It is possible to abstract all the design aspects of an existing strategy and identify social and human factors involved in change resistance.</td>
<td></td>
</tr>
<tr>
<td>Azadegan, Aida; Riedel, Johann; Baalsrud Hauge, Jannicke;</td>
<td>Case Study Research</td>
<td>4 case studies</td>
<td>Perceptions of the subjects consulted study sample and lack of information about tickets when strategy execution began.</td>
<td></td>
</tr>
</tbody>
</table>
Employees can be better involved in the overall process of transformation by making employees use the digital tools more enjoyable and stimulating. Also, Game elements application into the change process would be appropriate to motivate individuals in a new way making their roles and responsibilities more fun and interesting. Finally, organisations can adapt better to an increasingly complex environment through motivation engagement and early involvement of key stakeholders in change management process.
<table>
<thead>
<tr>
<th>Study</th>
<th>Methodology</th>
<th>Participants</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cherapanukorn, Vimolboon; Jintapitak, Manissaward;</td>
<td>Interview</td>
<td>8 participants</td>
<td>LEGO Serious play was successfully conducted for developing a revised vision and future action plan of the organisation. Is also described as the perfect technique for enabling and enhancing creativity, communication, evaluation and simulation within a workshop framework.</td>
</tr>
<tr>
<td>Tawalbeh, Mandy; Riedel, Ralph; Dempsey, Mary; Emanuel, Carlo;</td>
<td>Case Study Research</td>
<td>5-8 participants</td>
<td>LSP is found to be a suitable methodology for identifying improvements by delineating the actual situation and procedures in the business structure. LSP acts as a learning enabler by creating clarity and support mechanisms for innovation development and improvement. Only 3 case studies compared on their success factors without being based on predetermined classification scheme related to the group composition.</td>
</tr>
<tr>
<td>Study Title</td>
<td>Methodology</td>
<td>Participants</td>
<td>Findings</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>------------------------------------</td>
<td>--------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Wheeler, Stephanie; Passmore, Jonathan; Gold, Richard; 2020, All to play for: LEGO® SERIOUS PLAY® and its impact on team cohesion, collaboration and psychological safety in organisational settings using a coaching approach</td>
<td>Interpretative Phenomenological Analysis (IPA)</td>
<td>8-13 participants</td>
<td>Participants’ felt experience of engaging with LSP was positive, created closer bonds within the team and better understanding of each other and challenges. Tangible change in the way of collaboration and engagement with fellow participants and other colleagues. LSP can have a positive role to play in developing psychological safety and collaboration in organisational teams</td>
</tr>
<tr>
<td>McCusker, Sean; 2020, Everybody’s monkey is important: LEGO® Serious Play® as a methodology for enabling equality of voice within diverse groups</td>
<td>Workshop</td>
<td>9 participants</td>
<td>LEGO Serious Play is used as a symbolic system to help with understanding of the world and plays an important role in the development of thinking</td>
</tr>
<tr>
<td>Authors</td>
<td>Title</td>
<td>Methodology</td>
<td>Participants</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------------------------------------------------------</td>
<td>-----------------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Palmquist, Adam;</td>
<td>Plug &amp; Play? Stakeholders’ co-meaning making of gamification</td>
<td>Semi-structured interviews, Participatory</td>
<td>375</td>
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<tr>
<td>Prasad, KDV; Rao,</td>
<td>Can gamification intervention improve engagement, performance efficiency</td>
<td>Questionnaire</td>
<td>80</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Research type</td>
<td>Design elements</td>
<td>Review type</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>--------------------------</td>
<td>-----------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Nah, Fiona Fui-Hoon; Eschenbrenner, Brenda; Claybaugh, Craig C; Koob, Perry B; 2019</td>
<td>Gamification of enterprise systems</td>
<td>Literature Review</td>
<td>N/A</td>
</tr>
<tr>
<td>Arnab, Sylvester; Nalla, Madhav; Harteveld, Casper; Lamera, Petros; 2015</td>
<td>An inquiry into gamification services: Practices, experiences and insights</td>
<td>Online surveys &amp; questionnaires</td>
<td>600 participants in 2 groups</td>
</tr>
<tr>
<td>Alhammad, Manal M; Moreno, Ana M; 2020</td>
<td>Challenges of gamification in software process improvement</td>
<td>Literature review, systematic mapping guide</td>
<td>92 papers</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Title</td>
<td>Method</td>
<td>Papers</td>
</tr>
<tr>
<td>-----------</td>
<td>-------</td>
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</tr>
<tr>
<td>Burman, Sanna; Monstad, Therese;</td>
<td>A Gameful Change: How Gamification Can Be Used as a Communication Tool in Change Management.</td>
<td>Semi-structured interviews</td>
<td>N/A</td>
</tr>
<tr>
<td>Larson, Kristi;</td>
<td>Serious games and gamification in the corporate training environment: A literature review</td>
<td>Literature review</td>
<td>90 papers</td>
</tr>
</tbody>
</table>
Types of data collection methods within literature:

Experiment, Systematic Review, 2x4 Online Experiment, Literature Review, Observational Study, Case Study Research, Master Thesis, Interview, Interpretative Phenomenological Analysis (IPA), Workshop, Semi-structured interviews, Participatory Observation & Ethnographic Design Research, Questionnaire, Online surveys & questionnaires, Literature review, systematic mapping guide, Semi-structured interviews.
Appendix B – Other Figures

Figure 15. The relationship of the research strategy and research method

(Melinda Mathe, 2023)
Appendix C – Participant Information Sheet

Information Sheet for Interview – Participants in the gamification techniques study in change management environment

You are invited to take part in an interview to support the study/research taking place regarding the gamification techniques impact in the change management framework. This is part of the Master’s Thesis taking place in Stockholm University and conducted by the researcher Apostolos Savvas.

Before you decide to take part, it is important for you to understand why the study is being done and what it will involve. Please take time to read the following information carefully and discuss with the researcher any questions you have. Take time to decide whether you wish to take part or not. If there is anything that is not clear, or you would like to discuss further contact the researcher directly. To help you in your decisions to be involved in the study, some common questions and their answers are listed below. Thank you for reading this and I hope you find the following information helpful.

What is the purpose of the study?
This study tries to research the impact - if any - of gamification on employee motivation, through a chosen set of specific game design principles, in situations of change management within medium-size organisations in the United Kingdom. More specifically, the context of the three gamification design patterns will be used are the LEGO Serious Play, the Leader boards and the Collective Voting.

Many organisations apply gamification techniques which are based on practical applications but with no actual basis in research and related scientific data, making the gamification design principles look attractive and popular but not always applied as appropriate in different circumstances such as the change management process. This study will explore the immediate effect of gamification techniques in employee motivation.

Why have I been chosen?
As a participant in the transformation process within your organisation, you have been indicated that you could be contacted for a follow up interview. Whilst you have been approached for the interview, it is entirely up to your decision to participate or not.

What will happen if I take part?
If you agree to take part in the study, you will be asked to participate in an interview related to your interactions on your day to day work in topics around change management activities, project deliveries, BAU activities and gamification techniques application. All interviews will take place either in person within the organisation’s offices or online (if face to face is not convenient). Apostolos Savvas will want to record your conversation and will ask your permission to do so in advance. He will ask you also that you sign the consent form to indicate
and record your agreement to participate in the study/research. The appointment will take place in a time convenient to you. It is expected that your interview will last approximately 45-60 minutes.

Do I have to take part?
It is up to you where you decide to take part or not. You can confirm to researcher Apostolos Savvas if you would like to participate so he can pass you the Consent Form. If you decide to take part, please keep this information sheet for future reference. In addition, you will be asked to give written consent to present your agreement, but of course if you change your mind, you are still free to withdraw without providing a reason. This decision will not affect any involvement of your day to day work and your data will be removed from the study immediately.

What sort of questions will be asked during the interview?
- Describe your broader experience of interactions with others on an individual and team basis when you used gamification techniques.
- Did you feel you competed with others? Did you notice if your performance changed related to change delivery outcomes?
- Describe your motivation levels when using Leader board tool and if that has impacted your self-efficacy.
- Describe your experience through the collective voting process when decisions should be made for delivery changes should take place. Did you notice any individual/team impact in the decision making process when it comes to change requirements?
- How did you find yourself compared with others?
- Describe if you found yourself more creative and if so, how when using LEGO gamification tools.

Will my data taking part in the evaluation be kept confidential?
All information you provide during the course of the study and the interviews, will be kept strictly confidential. Your name and contact details will be stored separately from any study material/data. With your permission only, recordings will take place in order to use the data as best as possible. The recordings will be transcribed and stored within university data storage which will be deleted after the Thesis is complete and fully examined and approved. All names will be removed for data protection and anonymity and only the thesis supervisor and Senior Faculty members will have access to the interview transcripts, and these will be stored electronically and deleted when thesis is complete.

What if I change my mind during the process?
You have the right to change your opinion any time during the research and you can drop from the process by contacting the researcher Apostolos Savvas

What happens if something goes wrong?
If you want to make an official complaint about participation in this study/research, you can contact Mattias Svahn, the thesis supervisor at the DVS school of Stockholm University. You can find contact details at the bottom of this page.
What will happen to the results of the study?
The Master's thesis will be available in the University's database. You will be offered a summary of the findings by Apostolos Savvas (researched) if those are required. On the consent form you can choose to receive the summary of the results by email. Results from the study may also be published in appropriate peer reviewed journals.

Who has reviewed this research proposal?
The Senior DVS Faculty of Stockholm University has reviewed this proposal.

Thank you for your interest in this study.

To find more about the study you can contact:
Apostolos Savvas, MSc Student, mobile: (0044)-7513252002, email: apsavvas@gmail.com or apsa7987@student.su.se

For further information about the Master Thesis, please contact: Mattias Svahn, Researcher, Department of Computer and System Science, Svahn@dvs.su.se
# Appendix D – Participant Consent Form

**Interview - Consent Form**

<table>
<thead>
<tr>
<th>Title of Project:</th>
<th>Impact of gamification on employee motivation in situations of change in medium-size organisations in the United Kingdom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of Researcher:</td>
<td>Apostolos Savvas</td>
</tr>
</tbody>
</table>

**Please read the following statements and tick (✓) in the box provided to confirm agreement**

1. I confirm that I have read and understand the information sheet dated 3rd May 2023 (version 1) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.

3. I understand that participation is anonymous and any details that might identify me/my practice will not be included in reports or other publications produced.

4. I agree to the discussions with the researcher being recorded.

5. I agree to take part in the above study and the data to be used for the Master’s degree being undertaken by the researcher, Apostolos Savvas. This includes the publication of the study results in appropriate peer reviewed journals, forums and Senior Faculty researchers within the Stockholm University.
<table>
<thead>
<tr>
<th>6. I would like to receive a summary of the findings of this study (optional) by email (please provide)</th>
</tr>
</thead>
</table>

Participant Comments (Optional)

_____________________________________________________________________________________________________________________________
_____________________________________________________________________________________________________________________________

Name of Participant_____________________
Date of consent form signed_____________________
Signature_____________________

Name of Researcher___________________
Date of consent form signed_____________________
Signature_____________________

Page 72 of 78
## Appendix E – Semi-Structured Interviews Schedule

### Interview Agenda

*Table 5: Interview Agenda.*

<table>
<thead>
<tr>
<th>Interviewer’s Name</th>
<th>Participant’s Name</th>
<th>Venue/Room</th>
<th>Date</th>
<th>Duration</th>
<th>Interview Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apostolos Savvas</td>
<td>[placeholder]</td>
<td>[placeholder]</td>
<td>[placeholder]</td>
<td>5m</td>
<td>Introductions, Sign Consent form</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>35-50m</td>
<td>Interview Questions$^2$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5m</td>
<td>Closing: Participant questions and clarifications</td>
</tr>
</tbody>
</table>

$^2$ See Section 4.2
Appendix F – Participant Observation Grid

How to use the Participant Observation Grid

The observation grid contains basic observation data such as the site location observation took place, the date and time it started and finished. It always refer to the same research issue which is the application effectiveness of gamification techniques within change management activities in terms of employee motivation and engagement. The observer captures the type of team that participant is working on (change delivery team or operational team) but also data related with specified areas of observation listed below. Any input/data are being captured in terms of the 3 pre-defined gamification tools individually and how each of those tools contributes positively/negatively to the areas of observation. If any of the gamification tools have not been used during the observation, those should be excluded and marked as N/A.

Table 6: Observation Grid.

<table>
<thead>
<tr>
<th>Site location:</th>
<th>Date:</th>
<th>Start Time:</th>
<th>End Time:</th>
</tr>
</thead>
<tbody>
<tr>
<td>_______________</td>
<td>______</td>
<td>___________</td>
<td>__________</td>
</tr>
</tbody>
</table>

**Research Issue:**
Gamification Techniques in Change Management activities

<table>
<thead>
<tr>
<th>Area of Observation</th>
<th>LEGO Serious Play</th>
<th>Leaderboards</th>
<th>Collective Voting</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Type of participant/team</th>
<th>Change Team</th>
</tr>
</thead>
</table>

| Behaviours |
| (How participants were acting on individual and team level while using LEGO and Collective Voting) |

---

3 Not Applicable
Did participants support their team members while using gamification techniques. Did they enable discussions and collective approaching.)

**Feelings**
(How individuals/teams seemed to feel during different situations where gamification tools were used that could reward for their contributions to change delivery such as Leaderboards)

**Creativity, Communication & Target Achievement enhancements**
(Were there any enhancements in terms of creativity, communication and target evaluation during the events/sessions where
Adapted from Roller & Lavrakas (2015).
Appendix G – Reflection Document

I became aware of gamification and how famous gamification techniques are within agile working environments when I worked first time as a Scrum Master in United Kingdom in 2015. I was really impressed how the specific tools were able to change the teams perspectives within a start-up company (extra small size ~25 employees). When I then moved as Agile Coach within my current role, I was wondering how powerful and successful would be to utilise those techniques and see the outcome in a different setting with more employees (medium size organisation). Hence, I started looking opportunities within the organisation to apply gamification techniques and get the feeling and feedback from colleagues on their effectiveness and how that could change the way they work and act between each other within a very heavy change management framework. At the commencement of this study, I had extensive experience of practical gamification experience, but was surprised of limited evidence from academic change management perspective how effective could be. I was keen to explore some of those tools in depth in terms of motivational and engagement impact to employees.

Accordingly, I started to search existing literature on gamification tools and how those are used across the globe in different environments and practices. The goal of the study is to identify how does the gamification design patterns LEGO Serious Play, Leader boards and Collective Voting motivate employees within medium-size organisations in the United Kingdom, in terms of engagement in the change management process. I selected those three specific tools as I had previous good experience with them, and I was familiar with the concepts. Initially, during the preliminary literature review, I understood that gamification tools overall have a positive impact in people’s motivation and engagement but mostly that was related with the learning perspective.

As an Agile Coach, having direct access to organisation employees for a proper research study, I selected by purpose the semi-structure interviews as the primary data collection method. I was trying to ensure that I can apply first and then receive feedback on the utilisation of the gamification tools in an actual, active change management working environment. My choice to compliment the primary data collection method with participant observation, was driven by the ability to observe the participants through sessions, ceremonies and events which were already scheduled as per their daily work activities and that could make the research outcome more robust.

Through the data collection process, I was not expecting honest and transparent feedback from the participants who have surprised my positively providing a lot of input and insights. The focus of this research study is covered in depth but should be accepted that if the interview questions and participant observation themes were changed, then the outcome could be very different.

This study is related to project management (more in agile side) subject. Since this research is part of my master studies, and many topics covered Agile practices, I strongly believe that the study contributes to the overall existing literature. In my professional life, I am pursuing potential consultancy roles in future and such knowledge gained through the thesis would be
beneficial for my future career development as well. Moreover, I shall be able possibly to extend the focus of study by exploring more areas as part of my further studies (Doctoral studies) in future.

I am highly satisfied with the thesis study and further, the findings of this study may be referred by anyone interested in transformation, consultancy and academic functions.