

Gamification elements for e-participation: systematic literature review

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Abstract. To improve the quality of public services, the government needs to increase citizen participation to be actively involved in e-Participation. Departing from the condition of low citizen participation, gamification is present to encourage motivation for citizen participation through e-Participation. This study aims to review any gamification elements that can be applied to the e-Participation domain. The method used is a systematic review with the PRISMA approach to optimize reporting. The results showed that based on the frequency of literature citations there are 5 key elements gamified participation, namely points, user ratings/leaderboards, goals, achievement/badges and user profiles. The theoretical contribution of research in the form of gamification for e-Participation elements with the PRISMA approach which is expected to be used by government institutions to increase citizen participation as a practical implication.

1. Introduction

In a developing country including Indonesia, community welfare is also determined by access and utilization of public services [1]. But to create quality public services that meet the expectations of citizens is not easy. The government's efforts and hard work need even this has become a big problem in Indonesia that has not been solved. There are at least three issues that can describe the poor condition of public services in Indonesia. The first issue is discrimination in terms of treatment of the community is still different. This is due to the existence of nepotism, collusion, political, ethnic and religious interests [1]. The second issue is related to uncertainty or uncertainty over the costs and timing of services provided. This will encourage the proliferation of corruption. The last issue is the low level of public satisfaction with public services. As a result, residents had to be satisfied with the public services provided even though they were disappointed with the low quality [2].

Based on the results of a survey of the integrity of the Corruption Eradication Commission (SPI) in 2018, it turned out that the implementation of public services in Indonesia was said to be still poor. This can be seen in Figure 1 where the quality of public services in Indonesia only reached a score of 6.84 from scale 10 for central agencies and a score of 6.69 lower for public service units in the regions. Integrity scores show quality characteristics in public services, such as the absence of bribes, the presence or absence of SOPs, the suitability of the service delivery process with existing SOPs, information disclosure, fairness and speed in providing services and the ease of public complaints. The SPI results show the lack of bureaucratic integrity. This condition can have an impact on unaccountable public services and budget leakage[3].

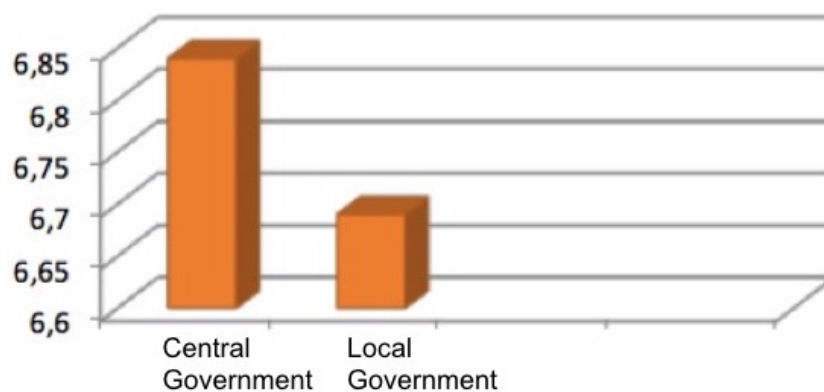


Figure 1. Data of Public Services Quality [3]

Seeing various cases in the field and the results of the survey reinforce the fact that public services in Indonesia have not been able to provide excellent service. Quality public services are still an expensive item and hope for the Indonesian people. The low quality of public services is due to the lack of community participation in monitoring public services and development [4]. Government institutions have not been able to optimize e-Government systems to increase citizen participation. Even e-Government that is applied tends only to the needs of government formalities, without quality. In other words, the government must try to increase citizen participation so that quality public services are produced. Citizen participation is needed in the process of formulating state policies, overseeing development programs and public services. This is in line with the opinion of Puspitosari (2011) which states that poor public services are caused by the lack of public participation in improving public services. [5]. Community participation is currently the highest priority in providing oversight of public services. In the past, every activity can be carried out without community supervision, control from the community must always be given to assess, criticize or provide input to the government. Therefore citizen participation is important in organizing the government. The government as a public servant must cooperate with the community as the recipient of public services that can be a means of control over the implementation of public services.

Law No. 25 of 2009 concerning public services in article 41 also states that the role of the community in the implementation of public services is conveyed in the form of input, responses, reports and / or complaints to the organizers, direct supervisors and related parties in accordance with applicable regulations. There are still many people who do not know their rights to participate, including expressing aspirations, recommendations, complaints as an evaluation of the performance of government services [6]. A study shows that so far people have relied on newspaper media as the most effective media for expressing opinions or complaints (53.8%). This position was followed by radio (33.91%) and short messages (SMS) of 30.65% [7]. With the rapid development of ICT such as the Internet and Smartphones, a model of citizen participation can be carried out in the form of a more efficient digital system both in its delivery, as well as in terms of its bureaucracy called e-Participation. In other words, e-Participation is a form of citizen participation by utilizing ICT such as a website or mobile application [8].

But unfortunately, technology does not necessarily guarantee the continuity of citizen participation in the administration of government. Facts on the ground show that citizens are not significantly involved in online participation and the community has not yet realized the

importance of the practice. Adequate conditions are needed and incentives are needed to bind citizens. There are many factors that hinder the continuation of community participation such as the convoluted bureaucratic flow, the many procedures that must be followed by the citizens, the government's low response, high time and costs, resulting in skepticism from the community [9]. These various factors have been widely discussed in previous studies. But the motivational factors that encourage citizens to participate in digital platforms are still rare [10]. E-Participation can be designed to improve and encourage motivation for citizen participation through gamification techniques [11,12]. Gamification is the design of systems, services and processes to enhance a similar experience with the system [12]. In the field of e-participation, gamification is believed to have the potential to increase citizen participation and open opportunities for better decision making and increase public trust in the government [13,14]. Empirical studies also show that gamification can increase system usage, make activities more enjoyable and improve user political awareness [15]. In response to low citizen participation, gamification is present as a new effective way to engage citizens participation [16]. Incorporating gamification aspects into the domain of e-participation which aims to increase citizen participation is called gamified participation [15]. Although research on e-participation can be said to be well established, the literature on gamified e-participation is still very limited.

This study aims to synthesize the literature in areas related to gamified participation in order to build a comprehensive understanding in the context of e-Participation for the domain of public services. Specifically, the research questions to be answered are what elements of gamification can be used to increase citizen participation so that they can be used to help the development of e-Participation in Indonesia.

2. Methodology

Gamification is a fairly potential approach in increasing motivation to use e-Participation [16]. Unfortunately, there is still little understanding of the benefits of gamification and how to apply gamification especially in the domain of e-Participation, which is due to the scarcity of literature related to the gamification of e-Participation. This study will conduct a literature review with a systematic review approach to synthesize various literatures related to gamification elements that can be utilized in e-Participation. The systematic review activity in this study is guided by a systematic reporting technique called PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyzes)..

PRISMA is a guide for reporting systematic and optimal systematic review activities with clear and easy steps to follow [17]. The stages of PRISMA consist of 4 phases, namely identification, screening, eligibility and included as presented in Figure 1 below:

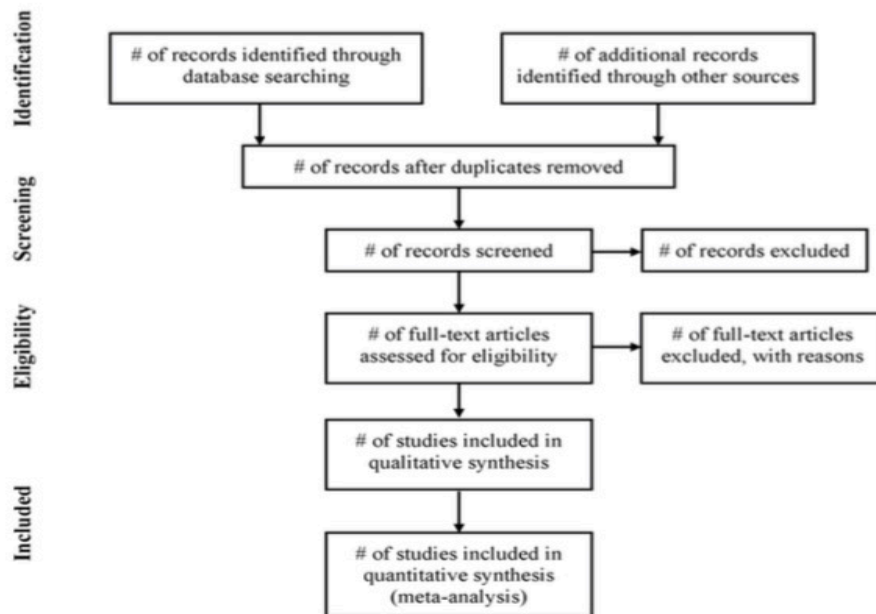


Figure 1. PRISMA Phase Diagram [17]

The first stage in PRISMA is Identification where at this stage we determine the database to be accessed as a source for searching articles or literature. In this study, Google Scholar and Scopus databases were used as electronic source databases. This is because the database is the largest database of indexers at the moment. The keywords used as the basis of search are a combination of several words such as gamification, e-Participation, elements and tools. Before proceeding to the second stage of screening articles, we need to determine inclusion criteria to filter articles so that articles are suitable for the purpose of the study. In this study there are several inclusion criteria, namely as follows:

- IC-1: Studies written in English relating to the Gamification of e-Participation domain
- IC-2: Studies published in the last 5 years (2015-2019)
- IC-3: Studies aim to investigate the gamification elements of e-Participation

The next stage is the screening process for articles to obtain articles that are truly relevant significantly to the research objectives. The screening process or article filter in the PRISMA technique is carried out based on several levels. The first level is article duplication, which means the same article will be eliminated to avoid duplication. Furthermore, the second level is based on titles, abstracts and keywords. At this level, the author reads part of the article whether the title, abstract and keyword reflect the desired study. Next to level 3, the author reads more details on the body of text and reference sections. The next stage is the eligibility stage where the author will use the predetermined inclusion criteria and determine and assess whether the article is in accordance with the criteria. Articles that do not match the criteria will be eliminated while the articles that match the criteria will be involved at a later stage. The last stage in PRISMA is included, which means that the author already knows which articles or studies will be analyzed in the synthesis process to obtain results in the form of gamification elements in e-Participation.

3. Result and Discussion

After the author determined the study eligibility criteria (IC1-IC3), the article screening process was carried out in at least three levels of article duplication (level 1), title, keywords & abstract (level 2) and body text & reference (level 3) as shown in Figure 2 as follows:

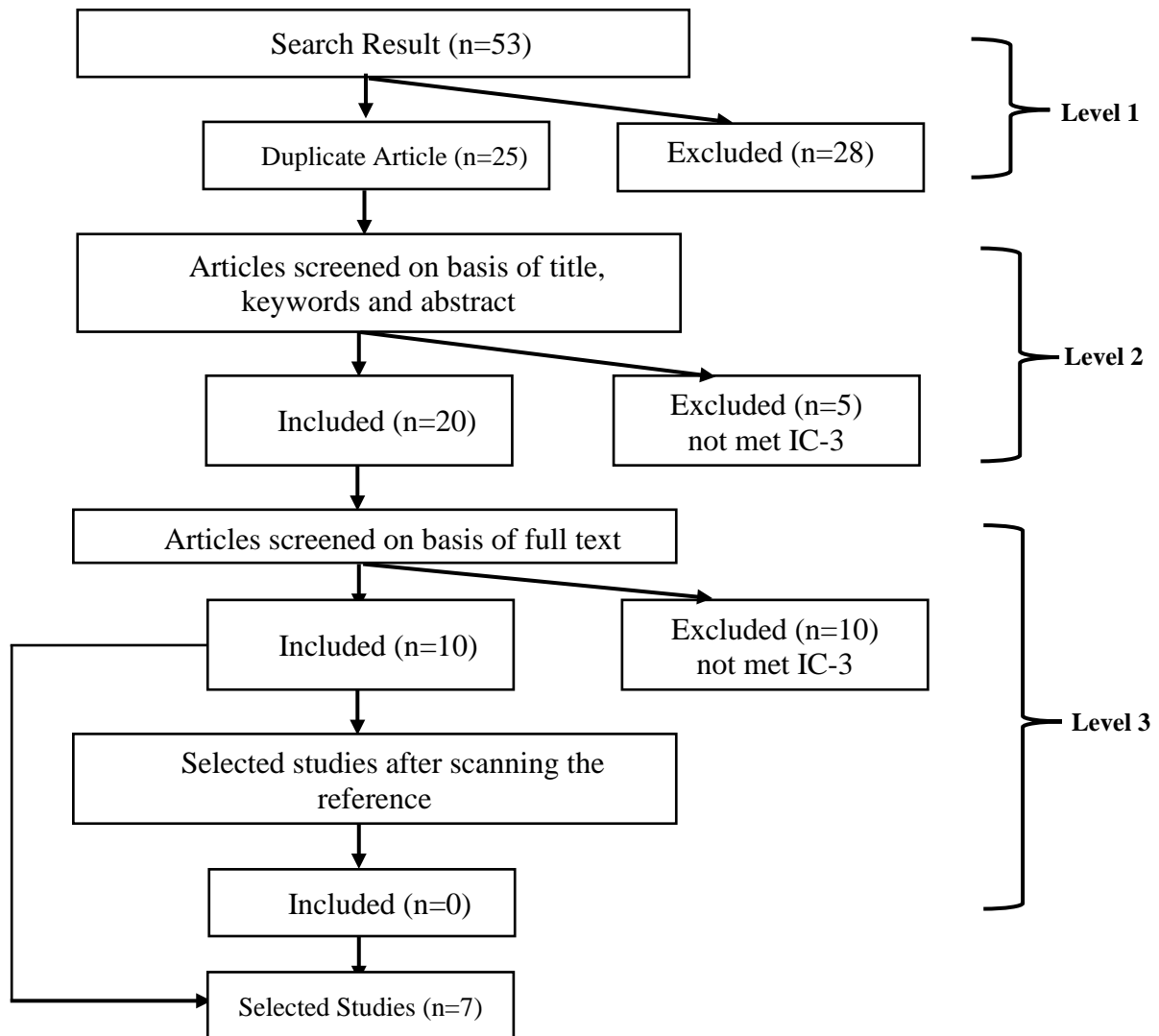


Figure 2.Study Selection Process

Figure 2 above shows the results of the process of searching and screening articles from database sources. The initial search results of the article produced a total of 53 articles. After screening the first stage whether there are duplicate articles leaving only 25 articles while 28 are issued because they are the same article. The second stage screening is based on the aspects of the title, keywords and abstracts. The second stage issued 5 irrelevant articles leaving 20 articles. Furthermore, the third stage is screening articles based on full text and reference which produces a total of 10 articles. Thus, 10 of these articles were involved in the

synthesis process, namely integrating all cross-related studies to get a complete picture of the gamification elements of e-Participation.

Before synthesizing, the collection of data from a total of 10 cross-studies consisting of the type of article, author, article title, year of publication as presented in Table 1 below is done first.:

Table 1. Data Literature Collection

No	Tippe	Author	Title	Publication Year
1.	Proceeding	Hassan& Hamari [18]	Gamification of E-Participation: A Literature Review	2019
2.	Journal	Thiel et.al [19]	Why so serious? The Role of Gamification on Motivation and Engagement in e-Participation	2017
3.	Proceeding	Yfantis & Tseles[20]	Exploring Gamification In The Public Sector Through The Octalysis Conceptual Model	2017
4.	Journal	Hassan [21]	Governments Should Play Games: Towards a Framework for the Gamification of Civic Engagement Platforms	2017
5.	Proceeding	Agbozo & Chepurov [22]	Enhancing e-Participation via Gamification of e- Government Platforms: A Possible Solution to Sub-Saharan African e-Government Initiatives	2018
6.	Proceeding	Al-Yafi & El-Masri [23]	Gamification of e-Government Services: A Discussion of Potential Transformation	2016
7.	Proceeding	Thiel et. al [24]	Inclusive Gamified Participation: Who are we inviting and who becomes engaged?	2019
8.	Journal	Rexhepi et. al [25]	Youth e-participation as a pillar of sustainable societies	2018
9.	Journal	Thiel et. al [26]	Playing (with) Democracy: A Review of Gamified Participation Approaches	2016
10.	Journal	Seaborn & Fels [27]	Gamification in theory and action: A survey	2015

The results of the literature data collection in Table 1 above provide descriptive information about the articles involved in the subsequent synthesis process. From the results of screening, there were 10 articles that were significantly related to the theme of this research. Based on Table 1 also presented the type of article, the year of publication of the article, the name of the author and the title of the article where there are 5 journal articles and 5 proceeding articles. The year of publication of articles also ranged from 2015-2019. This is in accordance with the eligibility criteria (IC-2), namely studies published within the last 5 years. Next, the next stage is the synthesis process of the PRISMA stages involving all cross-studies which can be presented in Table 2 as follows:

Table 2. Synthesis of Gamification Elements of E-Participation

No	Gamification Elements	Studies	Freq
1.	Points/Scores	[18–24][26,27]	9
2.	User rankings, status, levels & leaderboards	[18–22][24–27]	9
3.	Goals, missions, to-dos, tasks, quest & challenges	[18–22][26,27]	7
4.	Achievements, badges & medals	[18][20–24][26]	7
5.	User profiles, avatars	[18–20][22,23][26,27]	7
6.	Location tagging	[18]	1
7.	Time constraints/Time Pressures	[18][22][26,27]	4
8.	Posting, sharing & commenting	[18]	1
9.	Rewards, prizes & incentives	[18][20][25,27]	4
10.	Cooperations, teams & communities	[18,25]	2
11.	Likes	[18]	1
12.	Progress bars	[18]	1
13.	Reputation systems	[18]	1
14.	Social media integration	[18]	1
15.	Stories & characters	[18]	1
16.	Feedbacks & Newsfeed	[18,20,22,26]	4
17.	Punishments	[18]	1
18.	Player roles	[18,27]	2
19.	Rules	[18,22]	2
20.	Forums	[18]	1
21.	Emoticons, Expressions	[18,26]	2
22.	Lifetime	[19,24]	2
23.	Tutorial	[20]	1

Synthesis results from across studies produce a number of important elements of gamification which can be applied to the domain of e-participation. In Table 2, it can be seen that there are 5 (five) gamification of e-Participation key elements based on the number of their frequency frequencies in the article. The five elements are Points, User ranking / levels / leaderboards, Goals / missions / tasks / challenges, Achievement / badges / medals and User profiles / avatars. The overall gamification elements that have been generated from the synthesis process can be used to increase citizen engagement in e-Participation. In other words, gamification is proven to be able to encourage the motivation of citizens to participate continuously in the process of organizing government.

4. Conclusion

Based on a systematic literature review of a number of cross-studies related to the elements of gamified participation, 23 elements of gamification were produced which could be applied to the e-Participation system. However, out of a total of 23 elements, there are 5 key elements that are often used to increase people's motivation to actively participate, namely Points, User ranking / levels / leaderboards, Goals / missions / tasks / challenges, Achievement / badges / medals and User profiles / avatars. The theoretical contribution has been demonstrated in this study, namely the use of the PRISMA approach to produce 23 gamification of e-Participation elements. Practical contributions to government institutions both locally and nationally, which can apply the gamification elements to respond to low citizen participation so that citizens can be significantly involved in e-Participation.

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