Mohd Faredzuan Mohd Noor

International Islamic University Malaysia, Malaysia

Authors:

Fadzidah Abdullah, Mohd Faredzuan Mohd Noor and Mohd Raziff Abd Razak

Session 5: Augmented reality and machine learning for future spatial application and services

Paper S5.2: Assessment of spatial intervention of public spaces by locative augmented reality games players

ITU KALEIDOSCOPE
ONLINE 2021

Authors

Fadzidah Abdullah

Mohd Faredzuan Mohd Noor

Mohd Raziff Abd Razak

ITU KALEIDOSCOPE
ONLINE 2021

Introduction

The emergence of locative augmented reality games in the modern world have affected how communities interact, and how people use public spaces.

Locative AR games encourage the players to play outdoor, explore the local public spaces and interact with the community.

Some people consider the utilization of public spaces for locative AR games has become an intervention to the original function of the public spaces.

Public parks are crowded with digital zombies gathering around to play the locative AR games.

This research assesses the spatial interventions of the locative AR games players in public spaces by seeking the public perceptions of the intervention.

Figure 1 – Locative AR players at KLCC Park, Malaysia (photo by: amanfikry)

Literature Review

Augmented Reality

Augmented Reality is a digital visualization technology that provides interactive experiences.

The physical objects or elements in the real world are enhanced by computer-generated perceptual information across multiple sensory modalities in Augmented Reality.

The technology could provide virtual information on human senses, hence improving the man-environment relationship.

Figure 2 – Augmented Reality (photo by: khoamartin)

Literature Review

Augmented Reality Games

Augmented Reality is embedded to change the perception towards computer games.

AR feature in online computer games brings forth an unorthodox way of playing a game, where the players need to move to play the game physically.

AR games enhance perceptions and views of the physical world in various aspects of life.

The application of the technology is evolving, and it can be accessed easily using mobile phone apps.

Figure 3 – Augmented Reality game (photo by: yahart)

Literature Review

Locative Augmented Reality Games

Location-based or locative AR games use actual location with specific coordinates and geographical elements as the digital game environment.

Locative AR games use players' physical and geographical locations through a GPS sensor module.
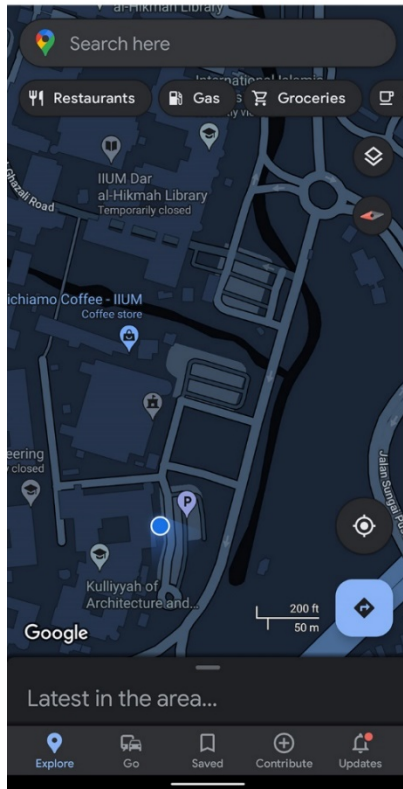
Locative AR games allow players to visualize the virtual object that merges with the physical world.

The games are designed to let players physically move around by following the immersive images they see on their gadgets' screens.
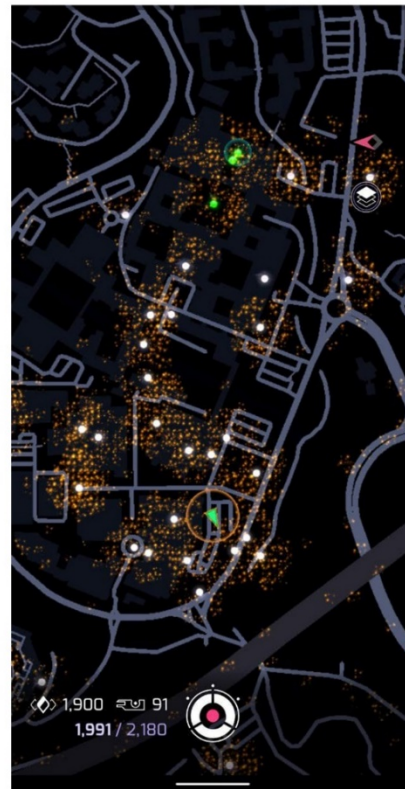

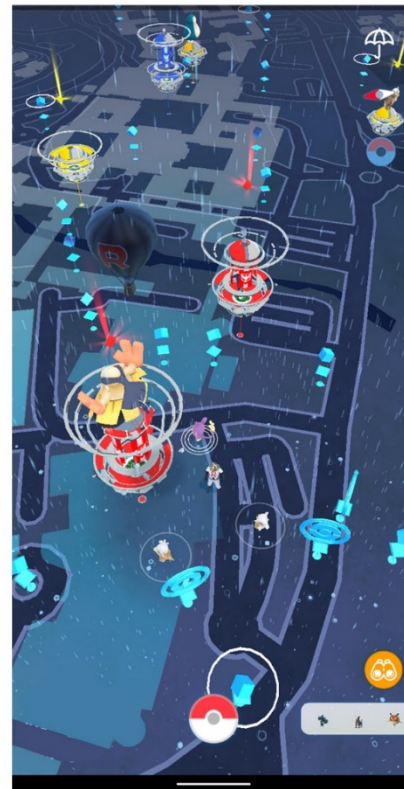Figure 4 – Locative AR game – Pokemon GO (photo by: David Grandmougin)

Locative AR Maps Comparison

Google Map   Ingress Prime   Pokémon GO   Harry Potter: Wizards Unite

Figure 5 – Comparison of the map in locative AR games at the same location.

Problem Statement

Intervention – Players conquering the public space and create noise, bothering the other users.

Detached – The players of these games could be seen roaming around to achieve the game mission without concerning people around them.

Inactive – The players come to the places to play AR games, yet they are not engaging with any other facilities and physical activities.

Safety – The locative AR games evoke numerous safety issues in the public spaces.

Research Objective

To assesses the public perceptions of the spatial intervention of public spaces by locative augmented reality games players.

Research Methodology

This research was conducted by using both the qualitative and quantitative approaches.

The researchers embarked on desk research and observation – conducted at several public parks often visited by locative AR games players.

The survey questionnaires for the quantitative approach were distributed to both locative AR games players and non-players to attain their insights on the intervention of public spaces by location AR games players.

The questionnaire was given to two target groups: the players and non-players (the general public).
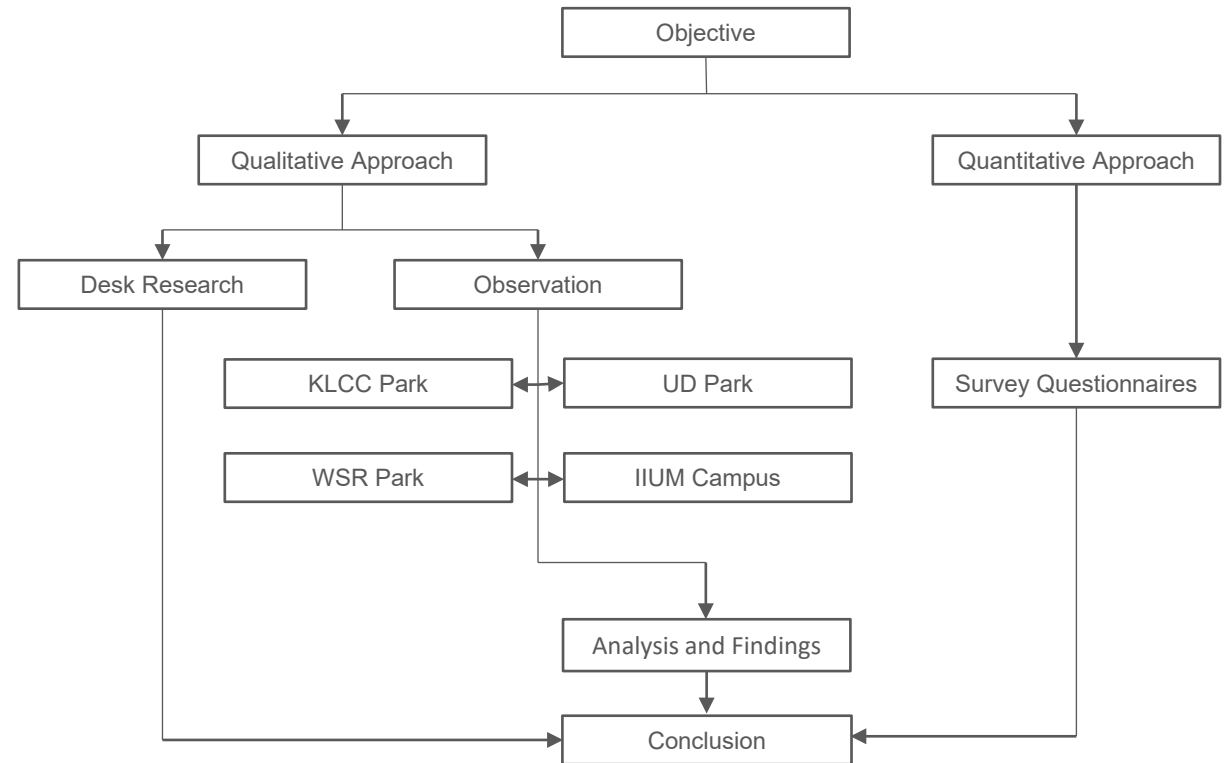
Research Finding

The questionnaire was addressed to get the public opinions on comfort concerning the environment of the existence of locative AR games at public spaces.

The respondents who answered "yes" stated that it was fun and happening to see the crowd of people playing in public spaces.

The public recognized that public parks are shared places, so everyone has the right to play in the public space.

The respondents who answered either "no" or "maybe" are totalled 56.8%.

They emphasize that it would become uncomfortable if the players cause a disturbance and distracted people movement.

The public perceived that most AR games players were not aware of their surroundings since they only focused on playing the games.

Figure 6: Comfort of Shared Environment of Locative AR Games in Public Space

Maybe: 26.9%
Yes: 46.2%
No: 26.9%

■ Yes ■ No ■ Maybe ■
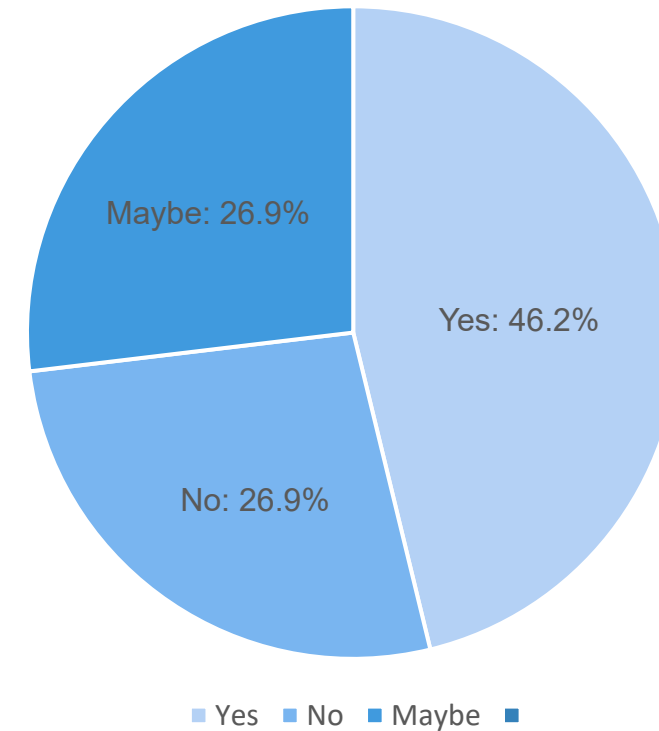
Research Finding

The respondents were asked about the suitability of the gameplay of locative AR games in public space.

69.6% of the respondents agreed that the games were suitable for being played in the public space, and 30.4% disagreed.

Finally, the respondents suggested that public spaces should have separated pedestrian walkways for locative AR games players to subdivide the circulation from the primary pathways.

Other respondents added that locative AR games should have their own designated public space for gameplays.

One of the respondents thought that the locative AR games should have their designated stadium with essential facilities for the players because it is in great demand.

Figure 7: The Suitability of Locative Augmented Reality Games in Public Spaces

No: 30.4%

Yes: 69.6%

■ Yes ■ No
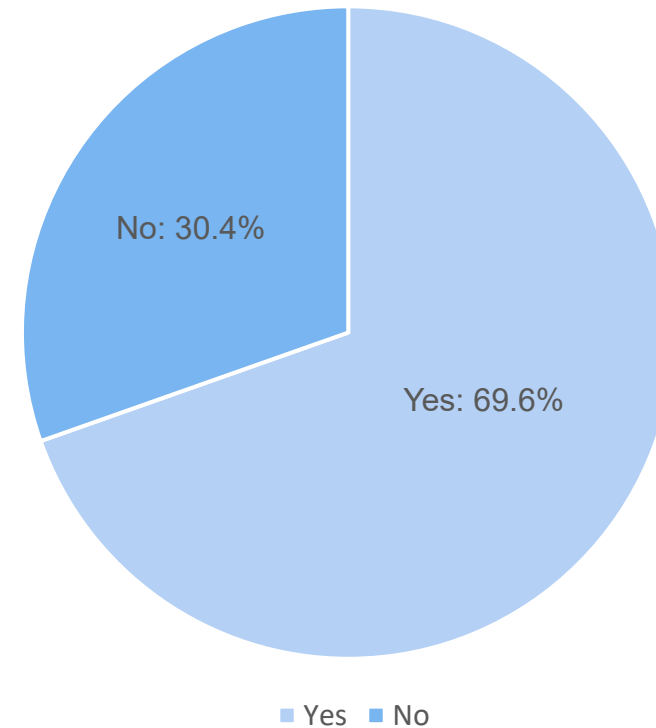
Conclusion

The locative AR games have indeed intervened in the public space and affected the visitors of the spaces.

The public mainly was concerned with the following issues: safety for both players and the public, interaction between the players and the public, the crowd generated by the games, and the trespassing of the player in public spaces.

The public also thought that the AR game-players intervened in their space by making noise, creating heavy pedestrian traffic, and interacting among gamers only. Some respondents also felt uneasy having players coming to public spaces at the same time as other visitors.

The parks should be designed for the locative AR game's architecture, with specific characters that enhance the games experiences without intervening in the existing public spaces.

Figure 8 – Locative AR players gathering under the shaded area to play the game in public park.