

The Impact of Ticketing System Agent-Based Modelling and Simulation Applied at Komodo National Park

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Abstract. In the online ticketing system, so many things must be considered. They are starting with communication technology that must be built first because there will be a reduction in resources. The most popular method today is online ordering, which can provide customers with benefits such as speed, comfort, and accessibility at any time. The review methodology of this article is based on the Featured Reporting Items for Systematic Literature Reviews and PRISMA diagrams. The tools to search used are ScienceDirect and Researchgate. The literature review further identifies the categories of research studies and methodologies used. This article provides a summary of suitable methods for analyzing and identifying agent movement

1 Introduction

In essence, technology was designed to make human movement simpler and to bring comfort to its consumers. Technology is the design of critical stages to reduce uncertainty about the relationship between cause and effect in reaching the desired results. The importance of communication technology nowadays has grown due to the numerous demands for a quick and exact flow of information. Humans may now communicate with one another without regard for distance, location, or time, thanks to advances in communication technology.

One example is when purchasing tickets to natural tourist attractions which were previously done with a manual system which resulted in difficulty for officers in monitoring and controlling the density and movement of visitors, it would be easier if it could be done using an application on a smartphone. From the changes that will be made, the results and impacts can be analyzed.

2 Literature Review

Mobile phones are becoming common systems in our culture. Mobile phones may be utilized to modernize services in a variety of activity areas. The public facilities industry is no exception. The present service delivery mechanism and value proposition are altered by public facilities. Customers of public facilities may be able to gain access to new services via the only one channel. Not only that, but alters the whole traveling impression, as tourist can access actual time information, maps, schedules, discuss comments, It changes how providers manage their resources and how customers pay for their outings. [1]. The most frequent method is online booking, which provides clients with

benefits such as quickness, convenience, and accessibility at any time [2].

A web-based survey was administered to travelers of both public facility systems under research to discover the important characteristics associated with the use of mobile payments in public facilities. This survey was designed as seen below: (a) sample characterization; (b) mobility characterization; and (c) assessment of ticketing systems, purchase, and validation using regular and cell phones. The primary elements influencing mobile payment acceptance in public facilities. The following factors are important: ease of use, usefulness, attitude, social effect, compatibility, cost, experience, trust, risk, usage context, and mobility. Additional research back up some of these conclusions. Several writers also argue that usability issues are to blame for the limited use of different payment systems [1].

The itinerary is a possible simulation option using a random coefficient model. Each simulation contains four interconnected itinerary possibilities. Because of a mix of trip locations (business or holiday) and travel time considerations, all four variations arose (arrival or departure). They all have the same shape, with just the empirical coefficients varying; this suggests a greater sensitivity to individual tariffs than business [3].

The ABM is based on the basis of a specific decision model of random utility and mimics every passenger's conduct in the air market in the globe at the same time. ABMs have demonstrated their capacity to test size, time, actor interactions, individual behavior, and context [4].

Purchase intention is a decision-making process that customers engage in prior to purchasing anything for a product supplied or required by the customer. Purchase purpose may alternatively be defined as consumers' proclivity to buy a brand or conduct activities linked to

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purchasing, as evaluated by the likelihood of customers making purchases. Typically, external stimuli impact purchasing behavior, Both public dealing and environmental stimuli are used. The obtained stimulant is then processed in the customer in accordance with the various attributes before the final purchasing decision is made. There are four indicators of purchase intention: transaction - oriented interest, which is a person's proclivity to buy a product, index of refraction interest, which is a person's proclivity to refer products to others, preferable interests, that are personal choices that define a human personality that has a liking for the good or service, and exploratory curiosity, which is the behavior of an individual who is always searching for the details of the good they're involved in and going to look for information [5].

ABMs are particularly well-suited to modeling as well as the simulation of complicated adaptive cultural systems. Agent-based modeling is a method for better understanding a system, its components, and their interactions. It allows us to evaluate a wide variety of system attributes and values that might prove to be inefficient and expensive in the real world, allowing us to comprehend the system's working "in-silico". The modeled representatives are social, independent beings with specific behaviors, as well as technology artifacts with properties that enable process to take place. Patterns from the relationship between several agents with diverse qualities, revealing insights into the system's overall operation. Consequently, agent-based modeling and simulation enable CBM experiments to examine micro and macro interactions between the environment, actors, and technology resulting in behaviors that are consistent with the concepts of the circular economy [4].

Several models based on agents have previously been used to examine the complexity and dynamics of circular economy activities in the domains of Diversity and Industrial Environment Studies. Many researches have been conducted to investigate the formation of partnerships among agents in order to increase economic profitability and resource efficiency [6]. Several CBM features, like as goods, partnerships, costs, and revenues, have been simulated in these studies. Additional research concerned the production of environmental value [7]. Moreover, some researchers used an ABM to model aspects that influence the emergence of industry in liveable, well-balanced communities [8]. The others validated, assessed, and categorised indicators for capturing value [9]. Many ABMs have been utilized to conduct customer approval study [10]. While others used ABMs to investigate the persistence of resource-efficient collaborative networks in a range of settings [11].

Agent-Based Modeling refers to as "complexity theory," which entails studying multiple actors and their interactions. According to him, this intricacy is challenging to examine using normal mathematical and statistical approaches, with computer simulation being the best option. Axelrod regarded ABM as "the third method to perform science," equal to the concepts of deduction and inference. Yet, it does not result in the proof of a theorem, unlike deduction. In contrast, Agent-

Based Modelling generates simulated data that may be examined inductively. Because the purpose of induction is to discover patterns in data and the goal of deduction is to discover the implications of ideas, the objective of Agent-Based Modelling is to aid intuition." Yet, Agent-Based Modelling is undeniably a strong tool for studying the genesis of complex patterns as aggregations and micro-level rule interactions that are not generally available on data.

3 Methodology

By using VOS viewer and prism diagrams to identify and analyze everything related to the keyword you want to search for such as author, country, institution, and the relationship between the keywords.

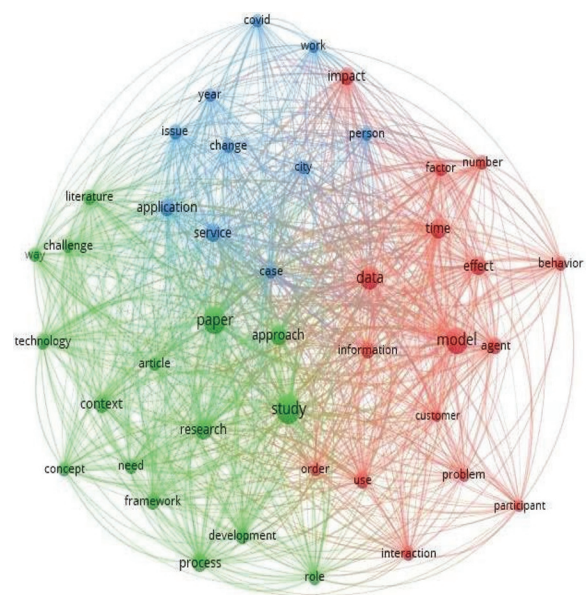


Fig. 1. Term analysis map

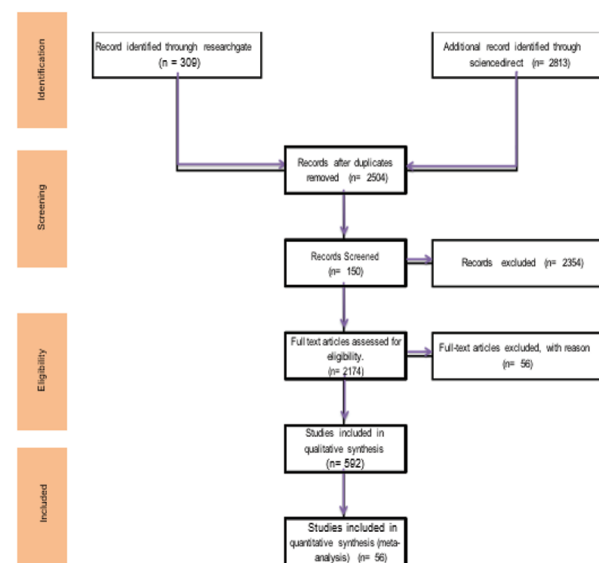


Fig. 2. Prism Diagram

4 Result and Discussion

Several studies have been undertaken to synthesize research on the elements that convinced researchers to utilize ABM to tackle the problem. We employ an agent-based model (ABM) in a design science technique that is iterative and participatory [4]. By working directly with practitioners, design science research is recognized as a beneficial research technique for testing novel ideas in real-world circumstances while tackling domain issues through artifact production. ABM enabled academics and practitioners to discover new information and solutions iteratively. In this study, with the goal of collectively and progressively enhancing business survival. This also suggests that ABM is not meant to give direct quantitative analysis to answer queries regarding the optimum or optimal conditions for a developing business to grow optimally.

To explore business continuity, several studies propose following and using these modeling and simulation phases yields the following methodological approach to business experimentation:

1. Selection and description of the case
2. Conceptualization of participatory and iterative models
3. Software implementation
4. Experimental design
5. Exploratory and repetitive business experiments and analysis

5 Conclusion

An illustration on one of the important results on an agent-based simulator is to evaluate the unpredictability inherent in travel demand, due to dependency. It is hard to evaluate suggested improvements in services without first implementing service alterations and evaluating the outcomes against realized outputs.

Previous research found that consumers who made travel arrangements accommodations using internet vacation agencies and low-cost travel companies but there was no analysis of agent movement behavior and system dynamics at the time of evacuation. Thus, this study will use ABM as a method to analyze agent movements and system dynamics when ticket purchases are made.

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