

# Development of a Shrine Festival Support Application with Non-Technical Management Features: Functional Evaluation and Sustainability for Future Generations

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## Abstract

This study developed a web application and video content to help raise awareness and interest in the myths surrounding the local shrine, Yakudo Shrine, and the annual festival, Chibikko Sumo Tournament, as well as to help participants establish memories of the event, and evaluate its usefulness. The application is designed to be used not only this year but also over the long term, and incorporates features that will allow easy maintenance and updating by non-technical personnel and the next generation of management members. The main functions are as follows: (1) accurate and convenient provision of detailed event information, (2) AR photo function utilizing original character illustrations to capture memorable photos, and (3) administrator-only functions to update and edit necessary information. web application can be used from publication to The web application delivered accurate and detailed information to a large number of people from the day of the festival to the day of the festival, helping to increase the number of festival participants by 2.5 times compared to the previous year. The video content, in particular, increased awareness of and interest in shrine-related myths.

*Keywords:* shrine, shrine-related mythology, web application, easy maintenance

## 1. Introduction

Yakudo Shrine (Fig. 1) is a small shrine in my hometown, but since 2017 it has had an exciting annual festival that both the “Chibikko Sumo Tournament” (Fig. 2) entrants and audience get excited about, with the goal of revitalizing the community and developing it as a tourism resource. In addition, the festival is volunteer-run by local residents, and this management structure has an important significance in enhancing local attachment and intergenerational cohesion, which will be passed on to the next generation. In anticipation of further development and an increase in the number of participants, a joint stamp



Fig. 1: Yakudo Shrine



Fig. 2: Sumou Tournament

rally event was held at the same time this year with the festival committee from the neighboring district.

The purpose of this study was to increase awareness and interest in this shrine and festival, as well as to promote a memorable and memorable experience for participants.

In terms of increasing awareness and interest,

- Development and release of a new official website with detailed information about the festival (contents, neighborhood information, sponsoring partners, stamp rally).

- Created video content in the form of a conversational drama that introduces the myths and gods associated with the shrine. By bringing the cultural value of myths and gods to the forefront, we expect to increase the shrine's attractiveness as a tourist resource.

In the promotion of memorable experiences,

- The AR photo shooting function using the original characters appearing in the video was implemented. With this function, the experience of the festival was recorded in the form of a photograph, with the aim of creating opportunities to recall the event at a later date.

In addition, previous studies and existing AR applications supporting local events have generally been developed by researchers[1] or companies[2], and introduced only for the year of the experiment, maintained and operated by the companies. On the other hand, since the festival to be supported emphasizes the fact that local residents are responsible for the operation of the event, we designed the application as a Web application that can be used by local residents over the long term by implementing functions that allow non-technical personnel to easily modify and update the content.

## 2. Support Method

### 2.1 Official Home Page

The first objective of the study was to increase awareness of and interest in the event by creating and publishing an official website. By posting detailed information on the website that could not be included in the flyers, the appeal of each festival and stamp rally was promoted and the interest of visitors was increased. In addition, by posting the information on the SNS[3] of the local city hall, accurate and detailed information was spread to many people, which is expected to increase awareness of the event. The list of information (Fig. 3) and a screenshot of the website are shown below. (Fig. 4, 5)

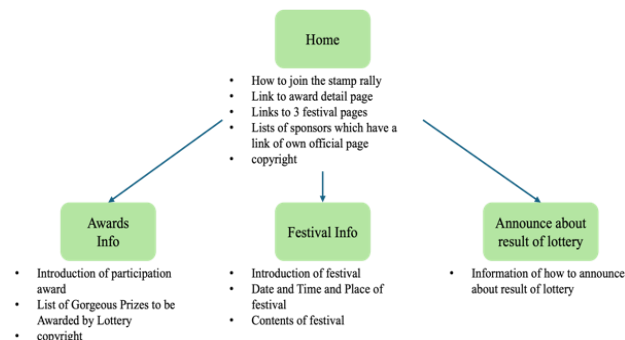


Fig. 3: component of web site



Fig. 4, Fig. 5: screenshots of website

### 2.2 Video Contents

The video content is structured as shown in the (Fig. 6). It introduces the mythology of the shrine, its connection to festivals, and the fact that festivals are made possible by the power of local residents. It also serves to strengthen participants' interest in the shrine and its festivals, raise awareness of the significance of little-known myths and festivals, and increase their value as a tourism resource over the long term. In addition, the content will be permanently installed at the shrine as a digital interpretation board from December 8, 2024, as shown in the (Fig. 7).



1. About Yakudo Shrine and Sumou Festival
2. Awards and Women Hip Sumou
3. "Takemikaduchi" history
4. Stuff message
5. Epilogue

Fig. 6: Video Contents



Fig. 7: Video QR in Shrine

### 2.3 AR Photo

This function was prototyped as the second objective of the research, to promote content that would encourage participants to fix their memories and memories of the event. The function of displaying and photographing characters without the need for markers, which improves on the limitations of Web AR, has been realized, but the degree of freedom in character placement is low, and there is still room for improvement, so other approaches need to be considered. However, the degree of freedom in character placement is low, and there is still room for improvement, so other approaches need to be considered.



Fig. 8: Sample of ARPhoto

### 2.4 Editing Function (useable only stuff)

Fig. 9 shows an overview of the editing function. With this function, the aim is to realize continuous page

management by local residents who run the festival. The editable information was targeted at text and images whose content may change from year to year. Specifically, this includes the introduction and contents of festivals and stamp rallies, date and time information, and sponsor information. In addition, an authentication function using Firebase [4] was implemented to prevent people without appropriate account information from accessing the editing function, thereby preventing unexpected tampering.

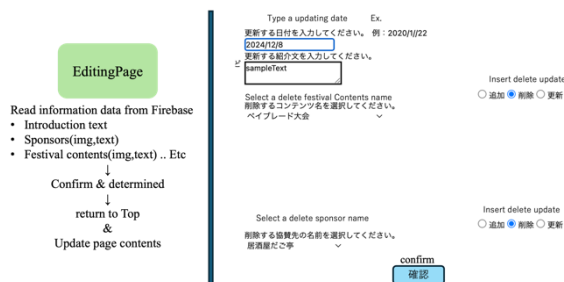


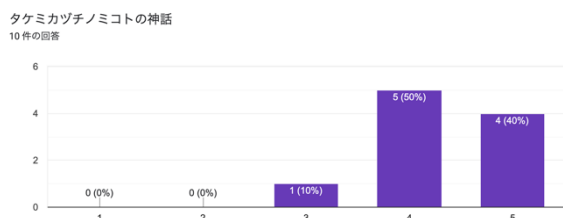
Fig. 9: Editing Function

### 3. Result

The number of participants in the stamp rally and sumo tournament (Table 1) suggests that the official website made a significant contribution to the research objectives of increasing awareness and communicating accurate and detailed information. The editing functions, from entering numbers to reflecting updated information, functioned well. It is also expected to speed up the response to urgent data updates, such as the change of sponsors' official SNS links, which was an actual case in FY2024.

However, the AR Photo did not perform well in promoting participants' memories and memory retention; as discussed in section 2.3, the low degree of freedom in character placement was a major factor in lowering the level of satisfaction with the AR Photo.

Although the number of viewers of the video content is still small (45 at this time), the responses to the questionnaire (Graph 1) indicate that the content was highly rated, especially the value of myths associated with the shrine. Therefore, the potential to help create value as a tourism resource can be expected. Further efforts should be made to increase the number of viewers in the future.



Graph 1: Degree of increased interest in myth

Table 1: Number of festival participants

	SumouTournament participants	Stamp rally applicants
2023	61	/
2024	153	183

### 4. Future Works

For the official website, we will introduce analysis services such as Google Analytics [5] to collect detailed data on the number of accesses, pages viewed, etc., to create better pages. We will also expand the contents that can be edited.

For AR photos, we would like to verify and improve multiple improvements in the form of A/B testing, such as providing hybrid web and apps and remaking them using a different approach.

For video content, we will devise ways to increase the number of viewers by using animation and abundant materials, and by using production techniques and cut-outs.

### Acknowledgements

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### Authors Introduction

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He is a graduate student at the Graduate School of Engineering, University of Miyazaki.

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