PUBLIC PERCEPTION OF ADAPTIVELY REUSED BUILDINDS IN SINGAPORE A CASE STUDY OF CHIJMES

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INTRODUCTION

Adaptive reuse is an increasingly common approach to conserving heritage buildings by discovering new uses for them. When the heritage building is adaptively reused, the building and its impact on society are transformed. Whether their heritage values need to be reassessed is a question worth examining. This study proposes a methodology that examines people's perceptions of adaptively reused buildings and whether perception changes with time and the perceiver. The CHIJMES was selected as case studies. This paper uses social media data to analyze and summarize the heritage attributes and values perceived by locals and tourists. The non-parametric hypothesis test is used to determine if there were differences in people's perceptions across time. By analyzing social media data, this paper summarizes the eight heritage attributes perceived by locals and tourists when they visit CHIJMES. They are Monuments and Buildings, Building Elements, Interior Views, Landscape, Activity and Association, Gastronomy, History, and Economy. The study result indicates that there are significant differences in people's perceptions across time for Monuments and Buildings, Building Elements, Activity and Association, Gastronomy, History, and Economy. There are no significant differences in people's perceptions across time for Interior Views and Landscape. This study could provide insights for future heritage value reassessment work.

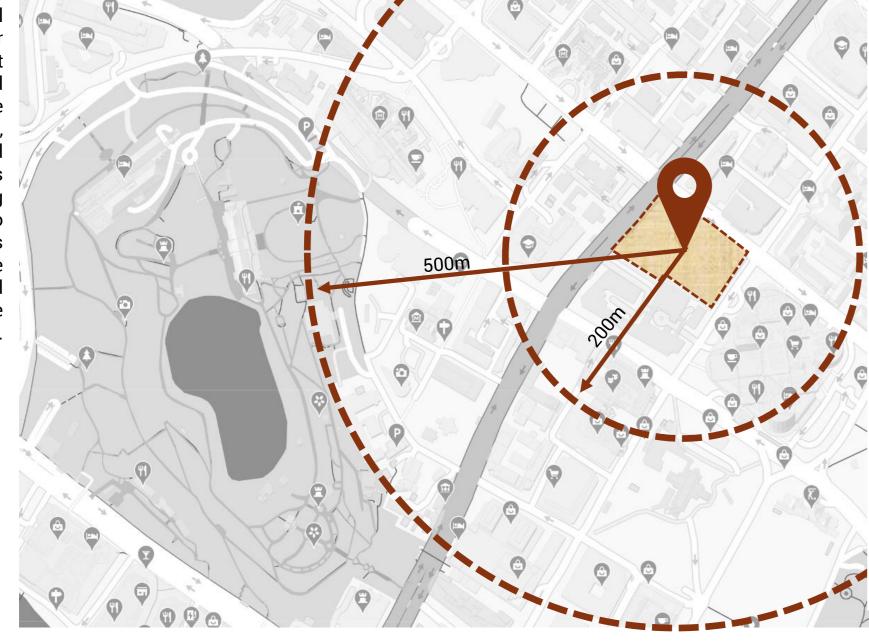
BACKGROUND

Heritage adaptive reuse is becoming an increasingly popular approach in heritage conservation, which can be attributed in part to their economic, cultural, and social benefits to communities. However, the current lack of stakeholder participation in this approach has led to a reliance on individual experience in studying functional regeneration and a lack of public perception of heritage values. Agenda 21 highlighted that sustainable development cannot be achieved without the involvement of communities at different levels of intervention. Public perceptions and preferences are becoming increasingly important in this regard. This emergent phenomenon poses new requirements for the conservation and adaptive reuse of heritage buildings. These developments have emerged in tandem with a new urban science based on multi-source urban data and computer technology, which focuses on human perceptions in the context of data and employs a bottom-up ideology in terms of understanding cities. On the one hand, people achieve information dissemination through it, and collective memory and local identity are achieved online. On the other hand, this mode of communication expands people's interaction with cultural heritage, but this phenomenon has not yet been sufficiently studied and applied in the context of cultural heritage conservation.

CHIJMES is a famous historical complex located in the heart of Singapore. The complex was originally built in the 19th century as a convent school for girls, and its name is an acronym for Convent of the Holy Infant Jesus Middle Education School. In the 1980s, the school moved to a new location, and the complex was redeveloped into a commercial and entertainment complex with restaurants, bars, galleries, and a wedding venue.

CHIJMES has undergone several renovations over the years. In 1996, it was renewed and opened to the public, and in 2011, it was renewed again. This provides an interesting opportunity to compare people's perceptions of the building before and after these renovations

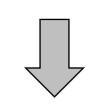




METHODS

Step 1: Data Collection and Pre-Processing

 Crawl Facebook data, including author information, text, time and location • Filter out irrelevant posts, only includes posts made by individual users who visited CHIJMES Used MATLAB Text Analytics Toolbox to clean texts



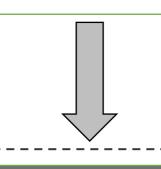
Step 2: Textual Analysis

 Used MATLAB to split the text into individual words, and obtain the number of occurrences and proportion of each word Trained a model using MATLAB to classify the words according to their meaning, and words were grouped into different heritage attributes



Step 3: Perception Differences Across Time

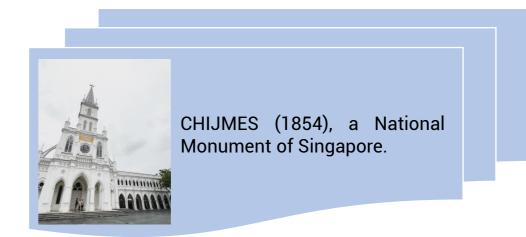
Used non-parametric hypothesis testing to explore whether people's perceptions had changed over Analysis of differentiated and undifferentiated reasons



Discussing developments and public perceptions of CHIJMES since it was opened in 1996

Discussing the factors that influence people's perceptions and the effect of people's perceptions on heritage value assessment

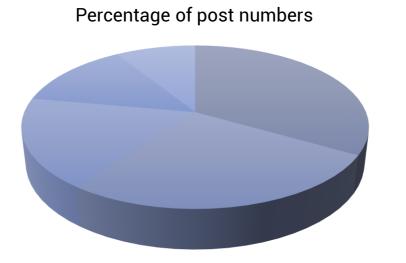
ANALYSES AND RESULTS











Percentage of post numbers

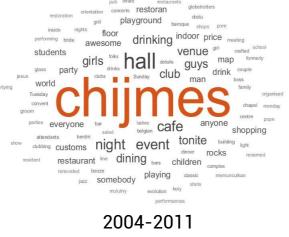
■2022 ■2021 ■2020 ■2019 ■2018 ■2017 ■2016 ■2015 ■2014 ■2013 ■2012 **■**2011 **■**2010 **■**2009 **■**2008 **■**2007 **■**2006 **■**2005 **■**2004

"at end of the state of the sta #chijmessingapore edding singapore new night convent beautiful jesus perreni

STEP 1. To collect data on people's perceptions of CHIJMES, this study uses Facebook, one of the earliest social media platforms. We can find some evaluation data from earlier years that reflect the most realistic perceptions of people's experiences. The study then divided the text data into two periods for analysis based on temporal information. The first period includes 545 posts from 2004 to 2011 before the 2011 renovation, and the second period includes 2,441 posts from 2012 to 2022 after the renovation. Because the original format of the text data of the posts is not uniform and may contain a lot of noise. This study then used MATLAB Text Analytics Toolbox to clean texts. These word clouds illustrate the raw text data and

the cleaned text data.

0.03 0.025 0.02 0.015 0.01 0.005 0.015





Economy

Business

E.g. Developer;

The percentage of the total number of words in each heritage attribute provides a basic comparison of the differences between the two periods. However, it's impossible to conclude whether these differences are significant, so a test of the significance of the differences is required. With the Nonparametric Hypothesis Test, it can obtain the data called Sig. When Sig is less than 0.05, the original hypothesis is rejected, and therefore the difference is significant. Otherwise, the difference is not significant When Sig is less than 0.01, the difference is highly significant. The results of the non-parametric hypothesis test lead to the following conclusions.

Attributes	Sig.	Difference
Monuments and Buildings	0.000<0.01	Highly Significant
Building Elements	0.000<0.01	Highly Significant
Interior Views	0.095>0.05	Not Significant
Landscape	0.667>0.05	Not Significant
Activity and Association	0.000<0.01	Highly Significant
Gastronomy	0.000<0.01	Highly Significant
History	0.007<0.01	Highly Significant
Economy	0.000<0.01	Highly Significant



More Monuments and Buildings and Building Elements were perceived in the 2004-2011 period than in the 2012-2022 period. This may be due to the declaration of Caldwell House and the CHIJMES Hall as a national monument in 1990. People showed more interest in the buildings that were named national monuments. buildings. Also, because there were relatively few historic buildings open to the public at the time, people had a greater sense of novelty about historic buildings.



Less History was perceived in the 2004-2011

period than in the 2012-2022 period. In the last ten

years, more people have become interested and aware of the history of CHIJMES. This is probably because this renewal has focused more on the

impact of the intangible aspects of CHIJMES. The

renovated CHIJMES has a heritage trail about the

CONCLUSION

This study emphasizes how crucial it is to consider how people view adaptively reused buildings when determining their heritage values. According to the study results, people's perceptions of most heritage attributes have changed significantly over time. This suggests that opinions about heritage can change over time and are not fixed. This finding has implications for the work of reassessing heritage values and emphasizes the need to re-examine the heritage values of adaptively reused buildings regularly.

In conclusion, the study's findings demonstrate that using social media for heritage conservation can provide knowledge about everyday interactions with historic buildings and adaptive reuse that is not otherwise available by experts. Therefore, combining traditional survey methods with those that rely on social media is conducive to achieving inclusiveness in the field of cultural heritage. The main challenge is offering an integrated strategy that combines the results of various approaches to support specific applications and guide decision-making.

Building Interior Views Landscape Monuments and Buildings Elements E.g. Chijmes hall; E.g. Dome; E.g. Theatre; E.g. Garden; Gothic; Glass Architecture Collection Turf There is no significant difference in people's perception of Interior Views and Landscape between the two periods. This suggests that people's perceptions of Interior Scenery and Landscape have remained relatively constant over time. There has been little change in concern for interior and exterior landscaping, probably because

History

Caldwell

E.g. Catholic;



text was analyzed by

splitting it into

individual words and

classifying and

grouping them into eight heritage attributes.

The study used

MATLAB to train a

model to classify words

based on their meaning.

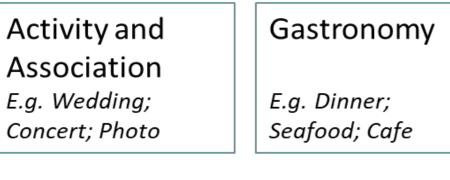
Word frequency

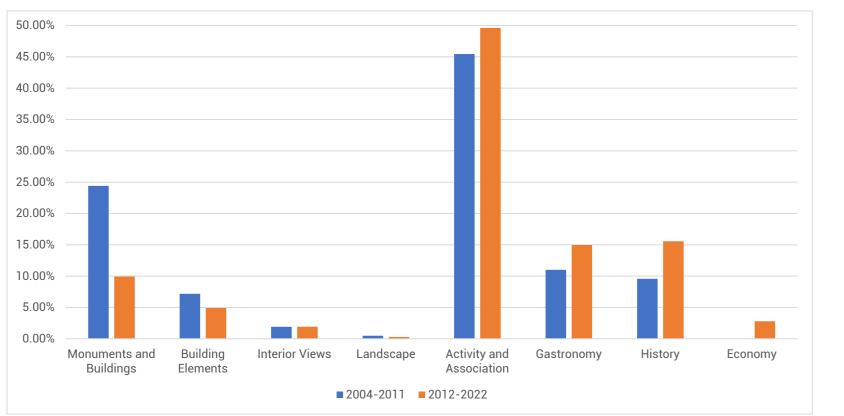
statistics were then

performed for two

different periods, 2004-

2011 and 2012-2022.







the 2011 renovation program did not include many

alterations to interiors and exterior landscaping.

More Activity and Association and Gastronomy were perceived in the 2004-2011 period than in the 2012-2022 period. This is probably due to the increasing variety of events held at CHIJMES. In addition to the concerts and weddings that are often held at CHIJMES HALL, there are also events, exhibitions, and workshops that are held in the garden, such as light shows. At the same time, the range of food and drink available at CHIJMES has also become more varied.



BIBLIOGRAPHY

Board, S. T. (2005). Singapore Mirror. Retrieved 11 23, 2011, from Singapore Tourism Board: www.singaporemirror.com.sg

CHIJMES. (2023). The History about CHIJMES. https://chijmes.com.sg/history/

Facebook. https://www.facebook.com/search/top?q=chijmes Henderson, J. (2011). Understanding and using built heritage: Singapore's national monuments and conservation areas. International Journal of Heritage Studies, 17(1), 46-61. İslamoğlu, E., & Yenice, T. K. (2022). Cultural Perception Performance Assessment of Adaptively Reused Heritage

Kunashakaran, S., Benoist, A., Peng, L. C., Yong, N., & Chua, J. (2014). CHIJMES: The Forgotten Story. Available at

Plevoets, B., & Van Cleempoel, K. (2012). Adaptive reuse as a strategy towards conservation of cultural heritage: A survey of 19th and 20th century theories. Cultural Heritage, 8, 9.

Buildings: Kilis Eski Hamam Case Study. ICONARP International Journal of Architecture and Planning, 10(1), 203-

UN Educational, Scientific and Cultural Organisation (UNESCO). UN Conference on Environment and Development: Agenda 21 UNESCO World Heritage Centre: Switzerland, 1992.

Ying, L., Tian, T., & Xiaojie, S. (2019). (NEW) URBAN SCIENCE: STUDYING" NEW" CITIES WITH NEW DATA, METHODS, AND TECHNOLOGIES. Landscape Architecture Frontiers, 7(2), 8-22.

Yung, E. H., & Chan, E. H. (2013). Evaluation for the conservation of historic buildings: Differences between the laymen, professionals and policy makers. Facilities.



Based on some newspaper news from 1996-2011, this study has found some reports of conflict at CHIJMES. The convent was demolished in 1984, sparking a wave of protest from alumni and the public, claiming it was a loss to the national heritage and collective memory.

A number of surveys between 1996 and 2011 showed that many visitors, vendors, and service staff reacted negatively when asked about their knowledge of the history of CHIJMES. Much of what visitors know about the history of CHIJMES come from guidebooks and tourist websites.

After CHIJMES was opened to the public as an entertainment venue in 1996, for visitors to CHIJMES, the impact of the entertainment far outweighs the church's role as a landmark. The fact that it no longer has a worship function may affect the perception of the building.

The renovation plan in 2011 was designed to respect the history of CHIJMES by adapting the type of tenants and activities at CHIJMES. The establishment of the CHIJMES heritage trail and the historical information boards about the building have brought the history of CHIJMES to the attention of more visitors.