Mapping for Vital Kyoto:

A Case Study on Kikuhama

An Interactive Qualifying Project Report by

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WPI

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An Interactive Qualifying Project Report submitted to the Faculty of Worcester Polytechnic Institute in partial fulfillment of the requirements for the Degree of Bachelor of Science.

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Executive Summary

Kikuhama has an interesting and unattractive past. It's history with prostitution and Yakuza gang activity has left a stain on the neighborhood, following it into the present. As Kikuhama tries to rebrand itself it struggles to leave this past behind. Many native Japanese residents know of this history and hold a stigma against the area. With this project work, we hope to further revitalize the neighborhood and highlight opportunities where weaknesses could be turned into strengths.

Through our project, we analyze the urban design and policies of Kikuhama through the identification of key markers of vitality, specifically looking at housing trends, facilities and land use, urban form and construction, and location and landscape. Using mapping data collected through Google Street View, we highlight the areas of struggle versus the strengths of this neighborhood. The goal of our project work is to investigate Kikuhama, Kyoto to provide information for scholarly researchers and other interested organizations to help generate ideas for a healthy and sustainable neighborhood.

Goals and Objectives

To accomplish our project goal, we adopted 3 specific objectives and specific methods to achieve those individual objectives. Our methods are both qualitative and quantitative in order to better capture all the perspectives of these issues. The objectives are listed below:

1. Identify key markers of urban vitality and utilize them to assess the neighborhood of Kikuhama.
2. Utilize and update the mapping techniques and layout of Kikuhama as established by the 2019 IQP group.
3. Use the data collected to create a modern profile of Kikuhama to inform interested researchers and policy makers about the current trends within the neighborhood.

Data

We sorted the buildings of Kikuhama into 10 different categories, residential, businesses, guesthouses, hotels, empty lots, warehouses, places of worship, parking lots, closed buildings, and unknown. We also found one school in the region, which did not have a separate category on the map. Using these categories, we found that the main changes between the 2019 and 2021 mappings were with residential housing, businesses, and temporary housing, comprising both guesthouses and hotels. Out of 520 buildings, residential housing decreased by 93 buildings, from 313 to 220. The number of businesses increased by 40, from 46 to 86, and temporary housing increased by 20 buildings, from 59 to 79.

Analysis of Vitality Markers

In our categories of housing trends, facilities and land use, urban form and construction, and location and landscape, we found that there was an increase in vitality for facilities and land use, and urban form and construction, but a decrease for housing trends and location and landscape. The massive decrease in housing and increase in guest housing are both negative signs of vitality. The increase in the number of businesses is a positive sign of vitality. The construction of buildings on empty lots is a positive sign of vitality.

The housing trends overall had a negative effect on the vitality of the area. One reason for this trend might be due to the increase in land values. Increasing land values means that newer, younger homeowners are being prevented from purchasing homes in this area. This is also exacerbated by stagnating and declining federal wages across Japan. The increase in guest housing and hotels is a negative sign to vitality considering that tourism has declined sharply due to the COVID-19 virus. All of these things, as stated, are probably responsible for the decline in the housing trend portion of our data.

The facilities and land use vitality marker suggests positive urban vitality through the increased presence of local businesses and increased land use mixture. Unfortunately, the complete lack of tourist attractions has a negative effect on the district's vitality, but this particular impact is overruled by the aforementioned positives. Overall, within the facilities and land use marker, these aspects create a positive urban vitality.

There was an increase in vitality for urban form and construction because more buildings were constructed than closed down. The increase in new buildings and decrease in older ones is usually a sign of lower vitality. However, the fact that most buildings were constructed on empty lots is a positive sign and indicates an increase in vitality

Overall, the location of Kikuhama has many strengths. While public transportation and regional assets are within walking distance, there are some areas within this district that can be improved on internally. With all of this analysis, we can say that Kikuhama has many strengths, so it is confusing as to why this area still isn't gaining the attention other smaller Kyoto districts have

Limitations

When looking at the data we presented, it is important to understand the limitations that occurred throughout this project. Due to COVID restrictions we were unable to travel to Kikuhama for our data collection and had to remotely map the district. Because of this, we do have a large section of buildings that had to be labeled as "unknown" because we had no way of verifying or cross referencing these buildings. These unknown buildings could affect the conclusions we made and the recommendations we have brought forward. In addition, there is a language barrier between us and many of the people we intended to work with. We missed out on many interviews and surveys that could have aided us in our analysis and provided us with some necessary context to the underlying problems Kikuhama is facing.

Despite these limitations, we were able to gather as much data as possible for an informative profile on Kikuhama as we strive to provide information for interested scholars and policy makers. We have found that in addition to the pandemic, the ever-aging population, and unsavory past weighs on this small urban neighborhood. Although some of our data supports this struggle, other findings prove that this community is striving to meet its potential.

Recommendations

Based on what we have seen, we were able to generate the following recommendations. First, we recommend the use of some of the guesthousing for semi-permanent apartments for potential residents. Some other guesthousing could also be repurposed for local community events to draw in people, residents or tourists. We also have found that it may be beneficial to have some space allocated for bike storage. Lastly, as we know, shuttered and closed buildings directly decrease the vitality of an area. Although this

is one of the more difficult aspects to manage, we think getting someone to invest in those buildings or tearing them down would aid in increasing urban vitality.

For future projects, we would recommend an investigation of ways in which Kikuhama can become not only vital, but livable. To elaborate, our analysis focuses almost solely on urban vitality and does not take into account what markers would be needed to assess the quality of life of residents in Kikuhama. Also, looking at the population density in Kikuhama may be a beneficial avenue to explore for a future project. Because our group did not have the means to see how populated the area currently is, we could not make any claims surrounding this subject. The population density of an area can have significant effects on the urban vitality of a neighborhood and quality of life the people who are present there have.

Abstract

Kikuhama, Kyoto is a district in a state of transition. Our project goal analyze the urban vitality of the district. We mapped the neighborhood using Google Street View and used vitality markers to analyze the trends. We determined multiple trends that led us to conclude that Kikuhama is in a lower state of vitality.

We compared our data to the data from a previous WPI group. This helped us establish significant trends in Kikuhama. We recommend building on the strengths of Kikuhama, such as using empty guesthouses as semi-permanent apartments, or hosting community activities. The neighborhood could also take advantage of numerous unused parking lots for bike storage. Lastly, it would be beneficial to gain interested investors for the many abandoned buildings in the neighborhood.

Acknowledgments

Benoît Jacquet and Jennifer deWinter are our sponsors who have provided knowledge and direction for this project work.

Benoît Jacquet currently lives in a small neighborhood on the outskirts of Kyoto. As a realtor investor, he cares deeply for the culture and well-being of the area that he works in. His previous projects throughout the neighborhood relate closely to the problem we intended to address, so his experiences and connections with the people in the surrounding area greatly benefit our understanding. His input and help were also crucial for the data collection portion of this report.

Jennifer deWinter is the director of the Japan Project Center at WPI. She specializes in Kyoto preservation work and has a wealth of knowledge about life in Japan. She provided information regarding her experiences living in Japan and her experiences on her previous project work. Her input, guidance, and experiences were crucial to the analysis of our data and the conclusions we have drawn.

In addition to the sponsors we worked with during this project, we also had the help of our Interactive Qualifying Project advisors, Jeniffer deWinter and Melissa Belz.

Both advisors worked closely with us every week to help enhance our writing and lead us in the right direction to complete our project goals. Melissa Belz is a part of the International and Global Studies Department at WPI and has worked closely with multiple WPI groups. Her advice and instruction on our report are greatly appreciated. As stated before, Jeniffer deWinter acted as our sponsor, but she also advised us closely in other aspects. She has been a great help throughout the writing and presentation portion of our final project. This paper would not be the same without their tremendous contributions.

We would like to thank everyone else who helped us along the way, whether that was classmates, friends, or family. Additionally, we would like to thank Andrea Urushima for attending our meetings even though she was not obligated to attend. Her knowledge about the area has provided us with helpful insight and feedback along the way.

Authorship

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1.1 Revitalization and Project Goal

Through our project, we analyze the urban design and policies of Kikuhama in Kyoto through the identification of key markers of vitality, specifically looking at housing trends, facilities and land use, urban form and construction, and location and landscape. We analyzed these markers utilizing mapping software, to not only map the area as it is now but to also build and compare it to data collected in 2019. Through our analysis, we highlight the challenges and strengths that Kikuhama possesses within these specific themes to produce a detailed profile of the area. This profile will be available to interested scholars and policy makers to inform any of their future decisions regarding the evolution of this neighborhood.

1.2 History of Kikuhama

Formerly known as Gojō Rakuen (Translated to "Fifth Street Paradise"), Kikuhama struggles to separate itself from its past as a popular red-light district. The district was once peppered with brothels and Yakuza (Japanese organized crime syndicate) compounds, filling the area with crime and prostitution. The gang influence in the area allowed for prostitution and brothel services to be run through local shops and tea houses along with other criminal pursuits (Besch, 2019). Figure 1 outlines the timeline of Kikuhama throughout its transition. While these activities were outlawed in the 1950s, the people and businesses responsible continued their transactions in secret. In 2017, law enforcement infiltrated the Yakuza compound, putting a stop to the prostitution and gang activities, thereby making the area safer. Unfortunately, this history has left Kikuhama undesirable to many citizens of Japan due to the stigma surrounding the Yakuza and prostitution (Besch, 2019). While criminal activity in Kikuhama has dwindled, its architecture and aesthetics are a reminder of its shameful past that many people from Japan wish to avoid.

Figure 1: *A timeline of major events affecting Kikuhama from 1950 – 2021*

1.3 Transition and Current Outlook

Ideally, Kikuhama could outgrow its past with the implementation of proper urban revitalization to aid in its development and allow it to become more sustainable. Fostering a healthy and thriving community in place of the currently decaying neighborhood, could fight the stigma and make Kikuhama a desirable destination for both tourists and permanent residents.

1.3.1 Housing in Japan

Kikuhama is a small neighborhood in Kyoto and is considerably less dense by comparison. Despite having a large residential presence, Kikuhama is defined as a commercial district, meaning that local businesses, shops, and residents coexist. Many districts are defined as either commercial, residential, or industrial in Japan, and they are often further broken down into levels, such as residential 1, 2 or 3. These levels, however, are not as important to the analysis as the main categories. The classification of this area as commercial allows the citizens of Kikuhama to benefit from some urban infrastructure. They do not receive the same resources for the infrastructure renewal and upkeep over other districts of Kyoto that bring in more revenue (City Planning Division, 2003)**.** Infrastructure in these smaller urban areas is often underdeveloped compared to the bigger cities. Smaller roads, more closed/shuttered buildings, fewer areas designated for public use, and other properties like this.

The smaller population density results in fewer accommodations. For long-term residents the layout of the neighborhood has pretty much remained the same since their childhood, as many of the people who live there have been there, and will stay there for their entire lives. Japan has one of the oldest populations world wide and that is highlighted in neighborhoods like Kikuhama. Many of the native residents are above the age of 65 and not many younger citizens are moving into these older neighborhoods outside the city (Besch, 2019). While this may be the case it does not mean that young families do not exist. Young homeowners or renters have to deal with housing policy issues that are directed at them, and neighborhood associations which heavily influence where they choose to live and what they can afford (Izuhara, 2003).

Housing options and costs are significant considerations for younger generations. Most traditional residences are expensive to maintain because they are drafty and old. In Kikuhama specifically, some housing features, such as large second story windows, represent the unattractive historic activities that stain the present with its past. Japan's housing policies favor multi-generational loan options making it harder for young families to move out and away from their parents (Pinker, 2003). For those who wish to live on their own it is extremely difficult to own a home. For some, staying home is fine, but for others the wants and needs of a younger family are much different than that of an older couple in Japan, making it difficult to live in a multigenerational house.

Another factor faced by new homeowners is the institution of Neighborhood Associations. Every neighborhood in Japan is overseen by an NA. They collect censuses, dues and distribute volunteer work to neighborhood residents. To younger generations, at least the majority who rent homes, participating in the institution of neighborhood associations is an unappealing concept. Being responsible for your elderly

neighbors is seen as an inconvenience that people do not want to be held responsible for, leading many new homeowners to move away from rural or smaller urban areas where volunteer work is at the center of NA participation (Pekkanen, 2016). These points are pertinent when discussing housing trends within Kikuhama as it provides context to better understand the housing market and relocation patterns of long-term residency in Japan.

The other major factor in housing trends are temporary housing options within the neighborhood. Temporary housing includes guest housing and hotels. For the past 100 years, temporary housing for tourists usually congregated in districts that were separate from regions where local residents lived. The 2010s saw the rise of a new type of temporary housing in which owners could advertise private rooms or apartments on a website and rent them to prospective tourists or residents without the need of a company owned building (Allen, 2017; Guttentag, 2013). Companies such as Airbnb, Vrbo, Homestay, and Bookings.com provided a way for people to post short term housing and earn money for hosting. Airbnb and similar companies allow people to advertise residences to a wide audience, which previously was only possible with pre-established and well-known hotels and rentals (Allen, 2017). This form of temporary housing increases tourism and tourism-related income in areas that might not normally have very much, but it discourages potential permanent residents from living nearby by causing the area to cater more to tourists, and by using lots for temporary housing that might previously have been used for permanent housing (Álvarez-Herranz, 2021; Yoshida, 2021).

Factors such as housing policies, neighborhood associations, and guest housing trends continue to play a large role in the shift seen in these rural/smaller urban areas (Pekkanen, 2016). All of these issues and obstacles are explored later on in our analysis as we discuss the housing trends in this neighborhood.

Chapter 2: Driving Ideas and Methods

The goal of our project work was to investigate Kikuhama, Kyoto to provide information for scholarly researchers and other interested organizations to help generate ideas for a healthy and sustainable neighborhood. There are several objectives that aided in accomplishing this goal. Our methods are both qualitative and quantitative in order to better capture all the perspectives of these issues. These methods and the objective they inform are displayed in Table 1 below. The specific objectives of our project were:

1. Identify key markers of urban vitality and utilize them to assess the neighborhood of Kikuhama.
2. Utilize and update the mapping techniques and layout of Kikuhama as established by the 2019 WPI IQP group.
3. Use the data collected to create a modern profile of Kikuhama to inform interested researchers and policy makers about the current trends within the neighborhood.

Table 1: Objectives Informed by Each Method Throughout the Project

	Vitality Markers	Interviews	Survey	Mapping	Research
Objective #1					
Objective #2					
Objective #3					

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Vitality Marker Identification

As part of our effort to provide information for those who wish to revitalize Kikuhama, we aimed to identify which aspects of a neighborhood exhibit vitality. We determined that housing trends, facilities and land use, urban form and construction, and location and landscape can be analyzed to determine the vitality of an area. As we analyzed 5 different urban revitalization case studies, these specific markers were discussed frequently. We assessed Kikuhama based on these markers, through the use of data we gathered from the mapping. When reading the literature we decided that they would be important aspects to look at when it came to drawing conclusions about the urban vitality of Kikuhama. We also tried to focus our vitality markers based on Eastern urban standards. We did this by taking into account where the case studies we read took place and identified where our own biases on urban vitality stand.

To analyze housing trends, we examined the ratio of permanent housing to temporary housing, compared housing data to the 2019 project to find larger trends, and looked at the geographical location of the different types of housing to determine where different types of housing were most concentrated.

To analyze trends with Facilities and Land Use, we wanted to analyze the longevity of businesses to determine their sustainability, however we were unable to do so without interviews or surveys. We were successfully able to compare which businesses remained from 2019-2021, and any new businesses that we mapped in 2021. We also examined hotels and guesthouses in a context of business rather than housing to find a more accurate depiction of business in Kikuhama.

To analyze trends for Urban Form and Construction, we estimated the amount of construction that occurred between 2019-2021 via the change in location of empty lots from the 2019 and 2021 mappings. This provided information on changes in the average age of buildings in Kikuhama, which we also analyzed. In addition to this, we looked at the change in number of closed buildings, and at sections that had higher concentrations of closed buildings and warehouses.

When analyzing the Location and Landscape vitality marker, we looked into three different topics: green spaces, transportation, and regional assets. For green spaces, we looked at where spaces allocated to foliage are located and whether or not it is maintained. Looking at this allowed us to draft recommendations based on what we found. For transportation, we looked into the street sizes as well as the capacity for parking. We took into account public transportation in the area as well, as this can affect the need for private forms. Lastly, for regional assets we looked at what was available in the direct vicinity outside of Kikuhama. This is because these assets can influence the traffic Kikuhama sees and provide services that do not exist within the district.

Interviews

In order to gain information from people who are either present in the area or knowledgeable in the topics of our project, we wanted to conduct interviews. We brainstormed different sets of specific questions for each demographic we planned to interview [See Appendix A and B for interview questions]. These demographics included: business owners in Kikuhama, guesthouse managers, and professionals who work in urban design and planning. We contacted people through email, and through social media (Facebook, Instagram, Twitter).

During the project our group received very few responses to our initial messages. Even after sending multiple follow-up emails and messages, we only received one response agreeing to the interview. However, after sending the questions via email, we did not receive another response in time. Despite this, we found it was still important to include this method in our report because the questions formed throughout the process helped develop our understanding of important topics and guided our research.

Surveys

In addition to the interview questions, we also curated different survey questions to distribute to local residents and tourists to gain better insight on what everyday life in the area was like for people living there and for people visiting. These questions were made with the intent of receiving short responses about topics such as rent prices, residential satisfaction, and pedestrian traffic. These questions were distributed via email and social media depending on which method of communication was favored by the specific contact [See Appendix C and D for Survey Questions].

Much like our experiences with our interviews, we received no responses to the surveys we sent out. We still included our sample survey questions in our report because they guided the way we thought about the scope of this project. When coming up with our questions, we conceptualized different topics of interest, including land value and residential satisfaction. When doing supplemental research, we kept these avenues of information in mind, ultimately leading us to find online sources that could answer some of our questions.

Mapping

A significant portion of our data came from mapping the district of Kikuhama and from previous mapping initiatives done by other groups. By looking at how the neighborhood is currently laid out, we were able to analyze what affected its overall growth. We split up the neighborhood into 5 different sections on Google Street View (as shown in Figure 2), comparing each section by the street view pictures and the overhead pictures. The date on which pictures were captured often changed between streets, so in order to make our map as accurate as possible, the addresses of different buildings were cross-referenced with multiple travel sites and business pages. This was done to ensure the different buildings within our map were labeled as correctly as possible. We also analyzed the distance spanned by Kikuhama and determined how long it would take to walk across the district, walk to the train station, and walk to the public garden to aid in contextualizing the area. We also compared our findings with previous IQP groups, allowing us to identify ways in which the neighborhood had changed since their last data collection, or if the data they had collected were the most updated versions we could find.

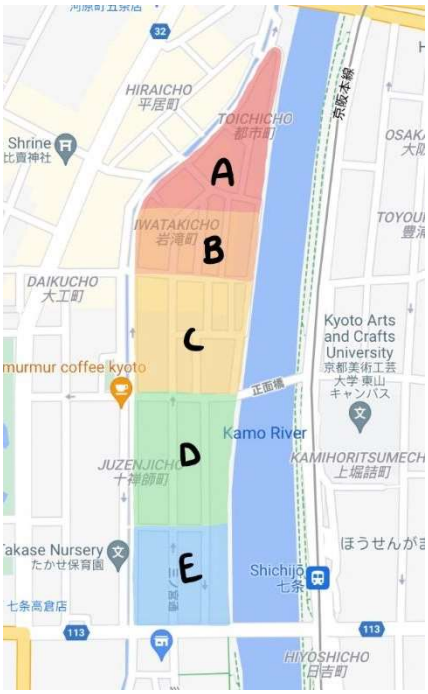


Figure 2: Before mapping, Kikuhama was separated into 5 different sections as seen here. These sections will be referenced throughout the report.

In addition to our own mapping data, we used a different mapping software to gain more information on aspects of life in Kikuhama that cannot be gathered simply from surface level building mapping. In order to gain insight on property tax prices and other types of land value, we used Chikamap.jp, a database developed by the Research Center for Property Assessment. Using the data from this site adds context and bridges an understanding of some of the underlying issues that people in the neighborhood face. Additionally, different public transportation maps guided our investigation of the types of transportation available surrounding Kikuhama. These maps included bus routes and the Kyoto Station train route.

Comparative Analysis

Because the scope of this project is ever changing, most of the information we gathered was through our research in different databases. This is a method we used throughout the entire project, and was objectively the most used. We used the databases from WPI Gordon Library website to access scholarly journals, with additional support from the research librarians. The information gathered throughout this process aided our investigation and helped inform our analysis on the trends we found throughout Kikuhama. The different topics we investigated with the assistance of these databases include: Urban planning, vitality markers in urban design, Japanese standards of vitality, land value and taxes, Japanese zoning, regional assets surrounding Kikuhama, public transportation in Kyoto, and Kikuhama's history.

Chapter 3: Vitality Markers

The data we collected and the analysis we performed on the neighborhood of Kikuhama is guided through the use of vitality markers. Urban vitality is defined as "arising from a variety of unique commercial and entertainment opportunities, and a dense socially heterogeneous pedestrian population". Many case studies have identified and utilized vitality markers in their own research. In this chapter we discuss several factors that must be considered when discussing the ecological, economic, and social sustainability of an area. For the purpose of our work, we chose to look at residential and guesthouse trends, facilities and land use, urban form and construction trends, and important location and landscape features. In this section, we outline the context of each vitality marker and how each marker applies to Kikuhama.

Sustainability is a living term, it changes based on the context and application of its use. It has a significant part to play in analyzing Kikuhama, and because of this we allowed it to take on several meanings. Every town, city, business or organization should be moderately sustainable; it should incorporate practices that not only consume resources but also redistribute some product or service back into the community it serves (Fernández, 2019). For this project in particular, the products and services we analyze could be completely ecological, economic or social. Our goal in this practice is to identify ways that these organizations are not only taking from the community, but also giving back to Kikuhama. In this regard, analysis of local business sustainability comes with identification of what type of businesses are present and where, what services they provide, and whether those services line up with what we have defined as a sustainable practice. We have also assessed environmental sustainability by analyzing green spaces and landscape alterations, as well as public transportation. However, considering our methods for data collection it was difficult to make definitive assertions on the amount of greenspace and frequency and convenience of public transportation but we attempted to the best of our ability.

3.1 Housing Trends

Housing trends as a marker of vitality explores the presence of residential housing, the presence of tourist housing, the ratio between these two values, and housing prices. A high number of residential buildings (such as those shown in Figure 3) is a positive sign of urban vitality, but can become negative when residential housing occurs in large clusters (Li, 2021). Clusters of residential housing, though a positive influence on population density, creates a negative impact on urban vitality as they promote homogenous land use zones (Li, 2021).

Kikuhama is technically a commercial zone, meaning that businesses (local or corporate), shops, and residents coexist. This designation makes way for the increase in tourist housing trends that also exist within the district. High numbers of tourist housing are found to be negative for urban vitality (Li, 2021). While it could be argued that increases in tourist housing contribute to overall neighborhood growth and activity, it is found to negatively impact the overall liveliness of a district (Li, 2021). The increased presence of tourist housing also has the potential to increase housing prices for permanent residents or people seeking permanent residences (Bivens, 2019). When compared against the residential housing trends, a greater number of tourist housing is also a negative indicator of vitality (Bivens, 2019). In a vital neighborhood, there should generally be a higher presence of residential housing relative to

tourist housing (Bivens, 2019). Of course, in a commercial district this may be slightly more difficult, but overall, a lively urban neighborhood has a considerable amount of residential housing compared to the overall district lot categorization.

Housing prices are also an important consideration when analyzing housing trends as a vitality marker. Housing prices influence who can live in an area, directly affecting the vitality of the area. According to Yu and Cai (2021), rising housing prices also have an overall negative effect on the vitality of an area as they tend to prevent different types of people from living within a neighborhood.

***Figure 3**: Depiction of regular housing throughout the neighborhood of Kikuhama (Map Data Japan ©2020 Google)*

3.2 Facilities and Land Use

Facilities and land use as a vitality marker analyzes the presence of businesses (food, shopping, life services, and tourist attractions) and other commercial buildings. It also takes into account the land mixture and the land value trends as the price of the land often impacts what types of businesses and buildings can be present in the area.

Kikuhama is a commercial zone, meaning that residential buildings and businesses of all types are permitted in the area. The businesses, however, cannot be industrial facilities or factories. These restrictions do not seem to have an impact on the area though, as it houses a plethora of businesses that range from small, family-owned shops to large corporate buildings, creating a diverse business atmosphere. The presence of businesses such as shops, restaurants, life services, and tourist attractions have a positive impact on the vitality of an area (Li, 2021). In short, high numbers of neighborhood amenities contribute to high neighborhood vitality (Mouratidis, 2020). More specifically, high numbers of surviving small businesses are a strong indicator of urban vibrancy as these types of businesses rely on increased pedestrian flow (Zhang, 2020). Small businesses do not alter the overall urban landscape of an area as they often take up small previously residential lots or they exist below the owner's apartment, but they act as a strong indicator of urban health as their survival denotes a colorful urban presence (Zhang, 2020).

While the presence of thriving, small businesses is integral to understanding urban vitality of an area, it is also extremely important for land use to be mixed. This means that the district cannot consist of solely small businesses. A thriving district is filled with different types of businesses, buildings, and services. Mixed land use directly relates to the sustainability of urban vitality, meaning that more variation in land use boosts the ability of an area to remain vibrant (Ren, 2020). This grants Kikuhama a potential advantage as a commercial district, allowing the area to house all sorts of buildings and potentially creating an ideal land use mixture.

In addition to business presence, the presence of tourist attractions and services play a role in the urban vitality of an area. Though we originally believed the opposite, tourist attractions actually contribute to positive urban vitality. According to numerous case studies, places lacking tourist attractions have lower urban vitality (Li, 2020; Li, 2021). This is likely due to the positive commercial impact of tourism on an area. An area with tourist attractions draws tourists in. These tourists then do business with local businesses, guesthouses, and hotels, contributing to the urban vitality attached to the thriving businesses (Ratcliffe, 2004).

3.3 Urban Form and Construction

Urban form and construction as a vitality marker considers the urban layout of an area, analyzing building density and the ways in which available space is being used. While a high number of buildings in a small area is a positive sign of urban vitality, it becomes negative if those buildings aren’t in use. Empty lots and closed buildings both have a negative influence because they aren’t being used for anything that could create more pedestrian traffic or interest in the region.

Both construction and demolition drive the overall development of an area and indicate resilient businesses and facilities within a district. They also are the result of a need for development which is often caused by an increase in population, creating a need for more buildings or a need to repurpose old buildings (Lu, 2019). In general, construction and demolition imply improvement in a built environment as both are integral to the development of an area (Lu, 2019). The cost of maintaining old and abandoned

buildings generates social and economic stress on neighborhoods, so the demolition and repurposing of old buildings is an indication of positive urban vitality (Mallach, 2012). However, older, well-maintained buildings are a positive indicator of urban vitality as well. This is due to the historical significance of these buildings which gives the area more importance (Li, 2021). Kikuhama contains a great number of old and shuttered buildings, making this marker an important area of analysis in our project. Using this marker to analyze the vitality of Kikuhama allows for a deeper understanding regarding the specific urban health of the area.

Another aspect of this vitality marker is lot occupation and population density. How space is used and how much of that space contributes to density are aspects that influence the vitality of an area (Li, 2021). Warehouses and storage tend to take up space that could be occupied by housing or businesses. The presence of many storage facilities and warehouses fills available space and decreases population density, thereby decreasing the overall vitality of an area (Li, 2021). Urban form also refers to the walkability of a district. Walkability impacts social cohesion of a district which then speaks to the vitality of the district (Mouratidis, 2020).

3.4 Location and Landscape

Location and landscape as a marker of vitality refers to the more ecological and pedestrian aspects of everyday living. Oftentimes, these are aspects outside of the location being assessed in this project. Some of the areas encompassed in this section include available green spaces, the capacity for transportation, and other geographical characteristics found in a specific area.

The term “green space” relates to the ecological side of a specific area. Parks, forests, community gardens, and wild vegetation are all components that make up a neighborhood’s green space. Many urban studies have conflicting views on the importance of green spaces when assessing urban vitality of an area. Whether green space has a positive or negative impact has been debated for years. According to Xin et al., high levels of vegetation in the landscape has a negative effect on the overall vitality of a specific area, citing that the presence of many large parks disturbs the human flow and takes up space that could potentially be used for higher priority facilities (Li, 2021). Not only do large areas of vegetation cause division in an urban landscape, but they also become something that residents and workers need to upkeep. On the other hand, there are plenty of people who support the need for green spaces, stating that it improves the quality of life and increases the capacity for better mental health of those present in the community. With areas set aside for community gardens and parks, people have access to places where physical activity and social interaction are encouraged (World Health Organization, 2016). Furthermore, the air quality and pollution can be greatly reduced with the increase in trees and vegetation.

From an urban revitalization standpoint, we have found that green space as a vitality marker negatively affects the vitality of Kikuhama. With this in mind, we would like to acknowledge that green space *does* serve a purpose in the quality of life and well-being of people in the community. However, the scope of this project deals particularly with urban vitality and we do not have the means and data to draw conclusions on the quality of life in Kikuhama.

With an area as small as Kikuhama, it is important to assess the accessibility of travel in and out of the area. The capacity for both public and private transportation has been cited as an indicator for urban vitality and has a positive impact on the outlook of a neighborhood. With increased availability of public transportation, street vitality is increased because pedestrian traffic and green environment are promoted (Liu, 2021). “Green environment” refers to the way public transportation is better for the environment and promotes ecological sustainability. Also, because many necessary amenities such as grocery stores, health centers, and public safety departments are located outside of the district, it is important that an accessible mode of transport exists in or around the district.

While private transportation may be the preferred mode of transportation for many, there are specific facets a neighborhood must contain for it to be considered sustainable or positive for urban vitality. Parking lots for cars take up larger plots of land and if parking lots tend to be empty, they are functionally the same as empty land plots (Li, 2021). Furthermore, street size plays a big part in the capacity for private vehicles. If streets become too narrow for cars and trucks to pass through safely, the overall value of vitality is negatively impacted because traffic backs up. Similarly, the potential for sustainable public transportation is dependent on a plethora of factors. The location of stops and proximity to the area are all things to consider when assessing this aspect. In addition, public transport can influence location surrounding them by generating a new avenue of interaction and revenue. Large public transportation stops have the potential to become hubs of social interaction from the people using them, and businesses or property owners can develop their services in these areas (Koning, 2017).

The last factor that is encompassed in the location and landscape vitality marker is the geographical features present in or around the area of interest. Because Kikuhama is such a small area, many of the assets that promote or harm vitality are located outside of the district. Although they may not directly affect the trends in our area, they could influence future work, and they are important for helping us paint the entire picture of the area we are investigating.

Chapter 4: Statistical Findings and Data Collection

In this next section, data collected from both our mapping and the 2019 map is displayed to catalogue significant differences over the span of time between 2019 and 2021. These maps and the subsequent analysis allow us to determine the changes in the factors that affect urban vitality of a region. Using the most recent map, we discuss the prevalence of the 10 different categories of buildings, which types of buildings are more common in specific regions, and which features close to Kikuhama serve as assets that can have an effect on its urban vitality.

4.1 Mapping Data 2019 – 2021

We sorted the buildings of Kikuhama into 10 different categories. The maps in Figure 4 (see next page) show the different types of buildings in Kikuhama according to these categories which are described further in the map key. The 2019 data was reorganized and recolored to fit into these categories so the maps could be more easily compared and analyzed.

Figure 4 - *The 2019 map of Kikuhama recolored and the 2021 map of Kikuhama using 10 colors to categorize buildings as shown in the legend.*

We found a growth of over 40 businesses since 2019. This leads us to believe that the data from 2019 may not be completely accurate because a sudden growth of that scale during a pandemic does not seem as likely as mislabeling businesses as residential homes in the previous mapping project. We also saw an increase of 5 places of worship, which is also unlikely as in Japanese culture, a new shrine indicates the discovery of a new god (Bernhard, 2012).

Below (Table 2) is a chart comparing the 2019 and 2021 maps of Kikuhama. In the 2019 map, the categories of Shops and Services, Public Service Buildings, and Company Buildings were all combined into Local Businesses. The categories of Construction and Renovation as well as Empty Lot were also combined into Empty Lots, and the categories Residential and Apartments were combined into Residential Buildings.

Table 2: Comparison of Lot Numbers and Building Percentage Between 2019 and 2021

2019 Map of Kikuhama, Kyoto				*2021 Map of Kikuhama, Kyoto*		
Percentage (%)	**Number of Lots**	**Lot Category**	**Color Legend**	**Lot Category**	**Number of Lots**	**Percentage (%)**
61.49	313	Residential Buildings		Residential Buildings	220	**41.50**
9.04	46	Local Businesses		Local Businesses	86	**16.20**
10.02	51	Guesthouses		Guesthouses	59	**11.13**
		N/A		Unknown	41	**7.70**
3.93	20	Parking Lots		Parking Lots	38	**7.20**
3.34	17	Shuttered or Closed Buildings		Shuttered or Closed Buildings	22	**4.20**
1.57	8	Hotels		Hotels	20	**3.77**
4.91	25	Storage or Warehouses		Storage or Warehouses	18	**3.40**
4.52	23	Empty Lots		Empty Lots	14	**2.60**
1.18	6	Places of Worship		Places of Worship	11	**2.00**
		N/A		Schools	1	**0.18**

The largest number of buildings in 2021 belong to the residential, local business, and guesthouse categories. It is also important to note the black unknown category. This category was included to account for the buildings that we could not quantify via Google Street View or through the maps from the previous WPI group.

4.2 Data on Housing Trends

We found that out of the five sections and 530 lots, there were about 220 residential lots. That is 41.2% of the total lots in the neighborhood. We found one elementary school in section D towards the southern half of the neighborhood. We also found 11 places of worship or shrines scattered throughout the neighborhood, so about 2% of buildings are either a place for residents to practice religion or they have shrines attached to them for worship.

One thing that we had to be conscious of was the limitations in our ability to identify some of the buildings. Lots are always changing and the times when the pictures were taken on Google Street View were not always up to date or signs were not legible. This meant that in some cases, we were not comfortable placing a structure in one category or another. There were 41 structures that we could not identify (about 7% of the map). These buildings could very likely all be residential as the structure and architecture match criteria for other residential buildings, but without signs it is difficult to say, leading us to place the building in the "unknown" category.

If both unknown and residential lots are combined, they account for 49% of all buildings, while residential alone accounts for only 41.2% of all buildings (see Figure 5). We report this here because it is probably more accurate to what actually exists in this neighborhood and it introduces error into our data.

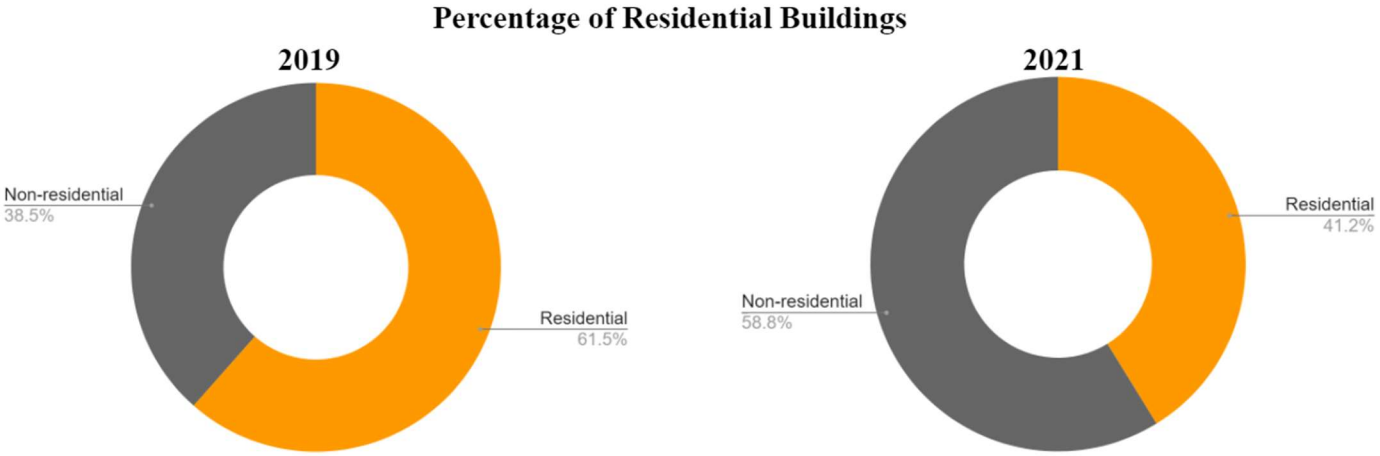


Figure 5: *Two charts comparing the proportion of residential and non-residential buildings in 2019 and 2021*

In comparison to the 2019 map in which 61% of all buildings were residential, there is significantly less residential housing. Residential housing occupied a maximum of 49% of the total buildings. We also found that 11.13% is guesthousing and 3.77% is hotels (59 and 20 buildings for each respectively). When analyzing the 2019 report, we found that they had 51 buildings reported for guest housing and 8 buildings labeled for hotels (see Figure 4).

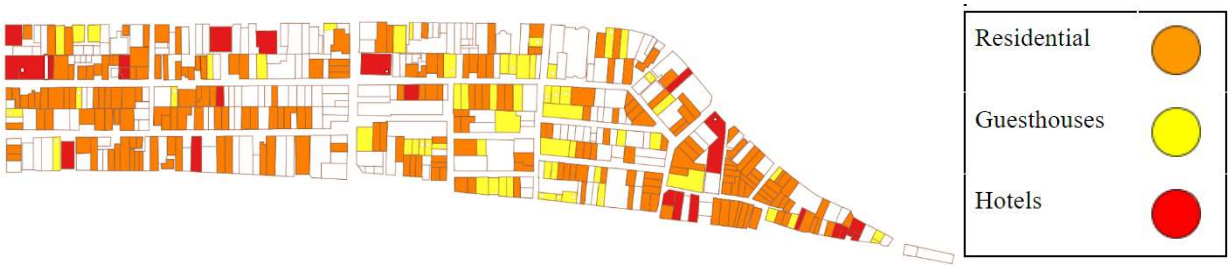


Figure 6: *Mapping data of residential buildings, guesthouses, and hotels throughout Kikuhama*

From Figure 6, it is clear to see that most of the residential buildings appear in the southern (left) portion of the map, and northern (right) portion. Most hotels appear on the western side of the Kikuhama towards the area of Kyoto station (See Figure 11 for location). And guesthouses are congregated mainly in the middle, northern portion of the neighborhood.

By overlaying and comparing the two maps (Table 3), we cataloged which buildings we remapped that were originally residential, and found that out of the 76 buildings that changed, 66% or 50 buildings are now either businesses or temporary housing.

Table 3: Changes in Kikuhama's Residential Buildings from 2019 -2021

	Local Businesses	Guesthouses	Empty Lots	Parking	Hotels	Closed Buildings	Places of Worship	Warehouses
A	3	1	1			1	1	
B	4	7	1			2	1	
C	5	13					1	6
D	7	2		5	1	2		3
E	6			1	1	1		
Total number of lots	25	23	2	6	2	6	3	9

This table indicates the number of buildings in each of our sections that were once residential, but have since changed to other building types. This data comes from the comparison of the 2019 IQP mapping data and our own group's mapping data (2021).
[ie. "In section A, 3 residential buildings became local businesses since 2019"]

In order to contextualize the land value of the area, we consulted Chikamap.jp, a Japanese database containing different tax values for areas of Japan. We assessed the property tax route price, a value that represents the average property tax for a given street. In Kikuhama, it was found that the price range for

this specific tax ranges from ¥39,000 – ¥150,000. The areas with higher price points tend to be located along the river and on the main roads connecting the two rivers. In these areas, more businesses and guesthouses are located, rather than residential housing.

4.3 Data on Facilities and Land Use

We found that there was an increase of 40 local businesses since 2019 according to the mapping data of the previous WPI group. According to our data, businesses make up 16.2% of the district as of 2021. The previous group found that businesses made up 9.04% of the district. While an increase such as this would hint toward an improvement in urban vitality, it is unlikely that the number of businesses increased by such a large margin, especially considering the global pandemic. We can only assume that some mistakes in mapping have occurred either due to our limitations, or due to confusion of the previous group when completing their mapping data. However, if this increase in business presence is legitimate, this would indicate increasing urban vitality.

The change over time in the presence of businesses in the district can be seen in Figure 7 below. In 2019, a few businesses were scattered throughout the district and no true pattern can be seen in the distribution of these properties. In the 2021 map, more businesses can be seen with a clearer pattern of congregation toward the center of the district, along the main road.

Figure 7: *Mapping data on business locations in 2019 compared to data collected in 2021*

In addition to local shops and restaurants, hotels and guesthouses can be counted as businesses. Below in Figure 8 the comparison between all types of businesses in the 2019 and 2021 maps can be seen. A clear increase in overall business presence can be seen in the 2021 map as shops and guesthouses form clusters along main roads in the center of the district. A distinct increase in guesthouses and local shops is clearly seen between the two maps, bringing more business presence into the area.

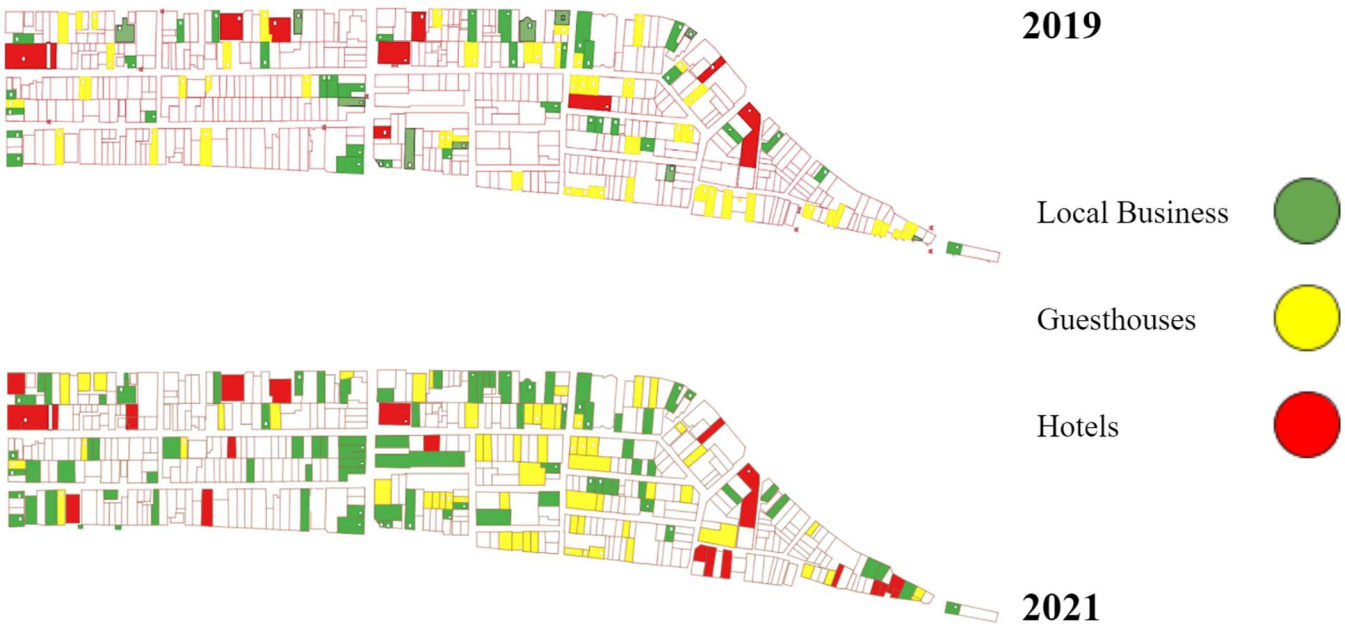


Figure 8: *Two maps showing the layout of businesses, guesthouses, and hotels in 2019 and 2021*

There is a distinct lack of tourist attractions, contributing negatively to Kikuhama's urban vitality. Despite a significant business presence and considerable tourist housing, none of these businesses act as true attractors to tourists, minimizing tourism opportunities within the district.

The increase in business presence also suggests more variation in land use. As the number of businesses increase, the number of residential housing and residential clusters decreases, creating more mixture in the types of buildings present. The change over time displayed in these maps, shows greater land use mixture as more space is used for new and varied purposes.

4.4 Data on Urban Form and Construction

By 2020, there were 9 fewer empty lots but 5 more closed buildings. The 9 lots that were originally empty in 2019 became 5 residences, 1 closed building, 1 shop, 1 guesthouse, and 1 unknown.

Kikuhama has a high population density because buildings are very closely packed, with little to no space between buildings.

Figure 9: *A map of the warehouses and closed buildings in 2021, with section B of the map outlined in black*

As shown in Figure 9, the closed buildings are heavily concentrated in the north end of Kikuhama, in section B, while the warehouses are located in the lower middle. The majority of the newly closed buildings were categorized as residential by the 2019 project, and 2 were categorized as religious and cultural.

4.5 Data on Location and Landscape

When looking at the data collected from the 2019 IQP group, one of the categories they included in their map of Kikuhama was green space, specifically what areas contained maintained greenery, and which ones were more overgrown. Their mapping data can be seen in Figure 10 below. In their analysis, they found a good majority of the maintained greenery was concentrated along the Takase River, and the abandoned buildings and guesthouses were either overgrown or completely void of maintained greenery.

Figure 10: *The figure above depicts the mapping data for trees and plants, gathered by the previous IQP group in 2019. As you can see, most of the collected data was collected along the Takase river along the west side of Kikuhama.*

When looking at the mapping data our group was able to gather in 2021, the mapping of trees turned out to be much trickier than we anticipated. However, when looking through the most updated versions of Google maps, we were able to see that most of the marked areas in the 2019 report were consistent with

the current data. Greenery located throughout the area tended to be potted plants, rather than grown trees or bushes. In areas labeled empty lots, there was sparse vegetation growing.

We decided to look in the areas surrounding the district, and found that Kikuhama itself was about an 8-minute walk from Shoseien Garden, a traditional Japanese strolling garden, and many other smaller gardens and parks. Because these spaces are located in the direct vicinity of Kikuhama, we wanted to take them into consideration when analyzing the green spaces available in the area. There are no parks or lots devoted to greenspace in Kikuhama. The main source of plant life comes from isolated potted plants, backyards, and trees lining the river. However, nearby assets such as Shosei-en and several smaller parks can serve the same role in the community.

Kikuhama's main locational assets are the two rivers that border it, the Kamogawa and the Takasegawa. We found that on average, walking from the northernmost point of Kikuhama to the southernmost point takes about 10 minutes by foot. Because this area is as small as it is, in the Google Street View of the area, we noted that there were no large gathering spots such as parks, temples, or train stations directly in Kikuhama. However, when zooming out and looking in the surrounding areas we found that the Kyoto train station, Shoseien garden, Kyoto National Museum, and Rengeoin Sanjusangendo temple are all within a 20 minute walk from Kikuhama, and these contribute to its location based assets.

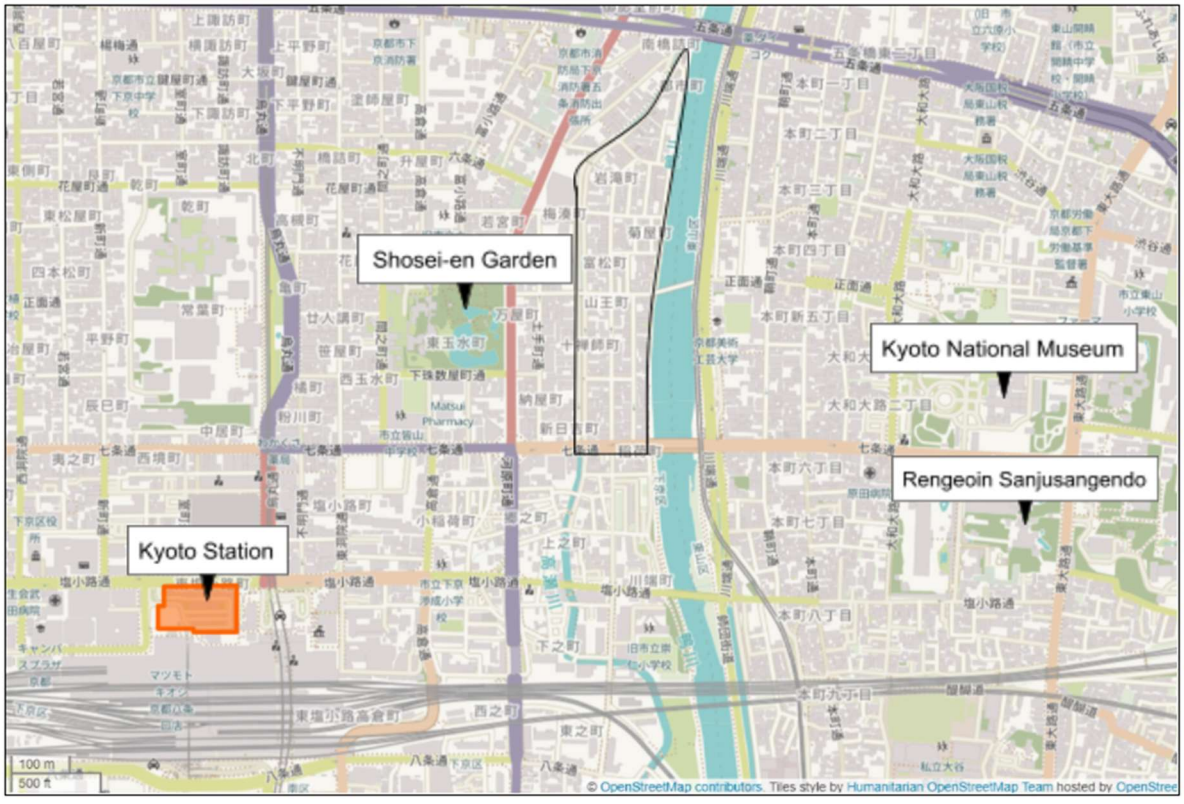
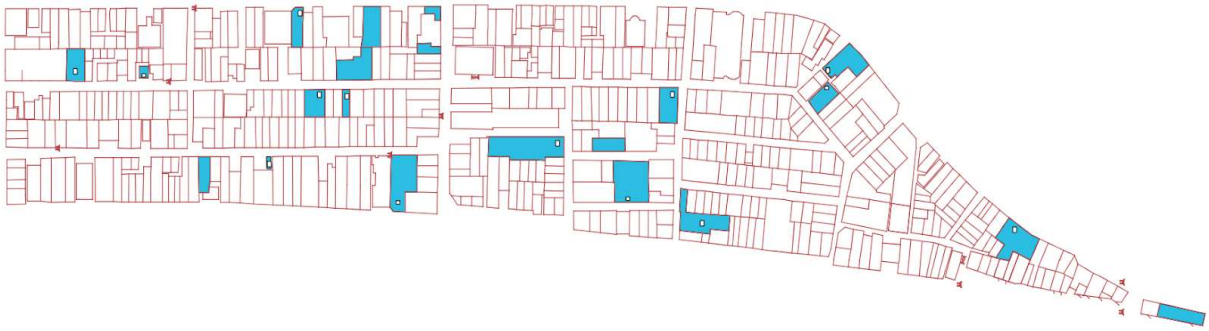
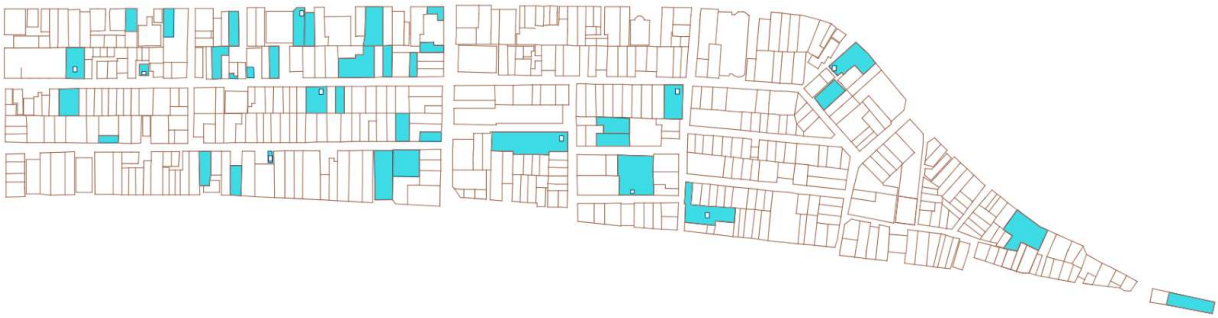


Figure 11: *Above, assets in the direct vicinity of Kikuhama (outlined in black) are highlighted. All of these features are within a 20 minute walk from Kikuhama.* *(Map data: Humanitarian OpenStreetMap Team)*

When starting to gather data on the different aspects that comprise private transportation, the first thing we looked at was parking lots. From 2019-2021, we found that the number of parking lots increased from 20 to 38. This increase seems larger than expected, but this is because these are multiple places where previous parking lots have increased their size (see Figure 12).



2019 Parking Map



2021 Parking Mapping

Figure 12: *Above is the comparison of the 2019 and 2021 mapping data for parking lots found in Kikuhama. Parking lots are denoted in blue.*

When looking at the Google Street View images, we noticed many of the parking lots in the area were nowhere near full capacity. To investigate further, we looked back on every capture image and found similar results.

We also took into account the size of the streets when collecting data about bigger vehicles such as trucks and cars. Many of the streets (excluding the main roads connecting the rivers) were narrow enough to fit a single car traveling one way. It is evident that cars are allowed to travel on these roads, due to the many residents and facilities with cars parked in front of them. Despite this, it seems that many of these roads are one-way roads and are unable to fit two cars across. In addition to this, many (if not all) of the roads have labeled bike routes. Bikes seem to be a major form of transportation in the area, and this too can be seen by the number of bicycles found throughout the Google Street View images.

In the 2019 IQP report, the group was able to find data relating to the amount of pedestrian travel made up by cyclists. When comparing walking traffic and bicycle traffic, cyclists made up 46.78% of pedestrian travel through the center streets of Kikuhama (Besch pg 22, 2019). They also stated that while bikes make up a substantial portion of this traffic, there seems to be no designated parking for bicycles in Kikuhama.

When analyzing public transportation, we looked for the different stops surrounding the area. We found that there were about 10 bus stops on the outside borders of Kikuhama. These stops are not necessarily inside the bounds of the two rivers, but they are located within a short walk and can be utilized by the residents in the area. In addition to this, there are three train stations located in the direct vicinity of Kikuhama, one of these stations being Kyoto Station, the second largest train station in Kyoto. These train and bus stations expand residential travel to many parts of Kyoto.

Chapter 5: Vitality Analysis Based on Mapping Data

5.1 Why Does This Data Matter?

Before any analysis or recommendations are discussed it is crucial to be transparent and understanding about certain biases. The tools and techniques utilized in one part of the world may not be totally applicable in another part. There is a noticeable difference between what American or western societies see as a marker of vitality and what eastern countries and specifically Japan identifies as a marker of vitality. We attempted to base most of our recommendations and analysis on case studies done in the easterm hemisphere of the world to provide an accurate scope of how to handle the challenges, and recognize the pertinent strengths of Kikuhama. A case study done in Wuhan, China highlights some of the major points of this perspective (Li, 2021). Eastern standards state that guesthousing and hotels is a negative marker of vitality if it takes away from residential housing. If ratios state that there is a larger amount of residential housing, and residential housing is not being taken over by guesthousing, then guesthousing and hotels can be a positive marker of vitality. There are several other examples that play a role in our conclusions and recommendations for Kikuhama, but they will be addressed as necessary.

Another aspect of data collection we wanted to address was how our group took time to look over the mapping data as reported by the 2019 Kyoto WPI group that worked in Kikuhama prior to us. There was some difficulty when trying to identify what buildings they considered residential as the only category they had listed in their legend that matched up with ours was “Apartments”. The number of apartments in the map did not translate to the statistics they reported on total residential lots. They only labeled 16 apartment buildings, but 58% of their total buildings were reported as residential, along with other discrepancies, so we had to make some inferences on their data and legends. We made sure to try and avoid the same confusion with our data.

5.2 Analysis as Related to Vitality Markers

5.2.1 Analysis of Residential Trends

The prior WPI group reported 61% of the lots to be residential, that is their 58% statistic reported with the addition of apartment buildings. our group reported 41%. That is a 20% decrease in residential housing. We also know that the congregation of residential buildings in one area decreases the urban vitality. 2019 saw more residential clustering then we see currently in the neighborhood so that is a positive sign, but that could also just be because of the drastic decrease in buildings. That downtrend negatively impacts the vitality of Kikuhama. Less long-term residents mean the sustainability of the area is impaired. A neighborhood cannot be lively without a stable population bringing life to the community and being present to teach and learn the local culture (Mouratidis, 2020).

One aspect driving the decrease in residential housing is the land value of the surrounding areas. Due to its local parks, transportation, businesses, and landscape, land values have been steadily increasing in Kikuhama. When using the data from Chikamap.jp, we found that the property line tax prices around the

main roads and rivers were higher than the rest of the area (¥139,000 - ¥150000). As land values increase, property taxes also increase. These trends make it difficult for interested people to move to the area, especially the younger demographic who already face so many obstacles in trying to buy a house.

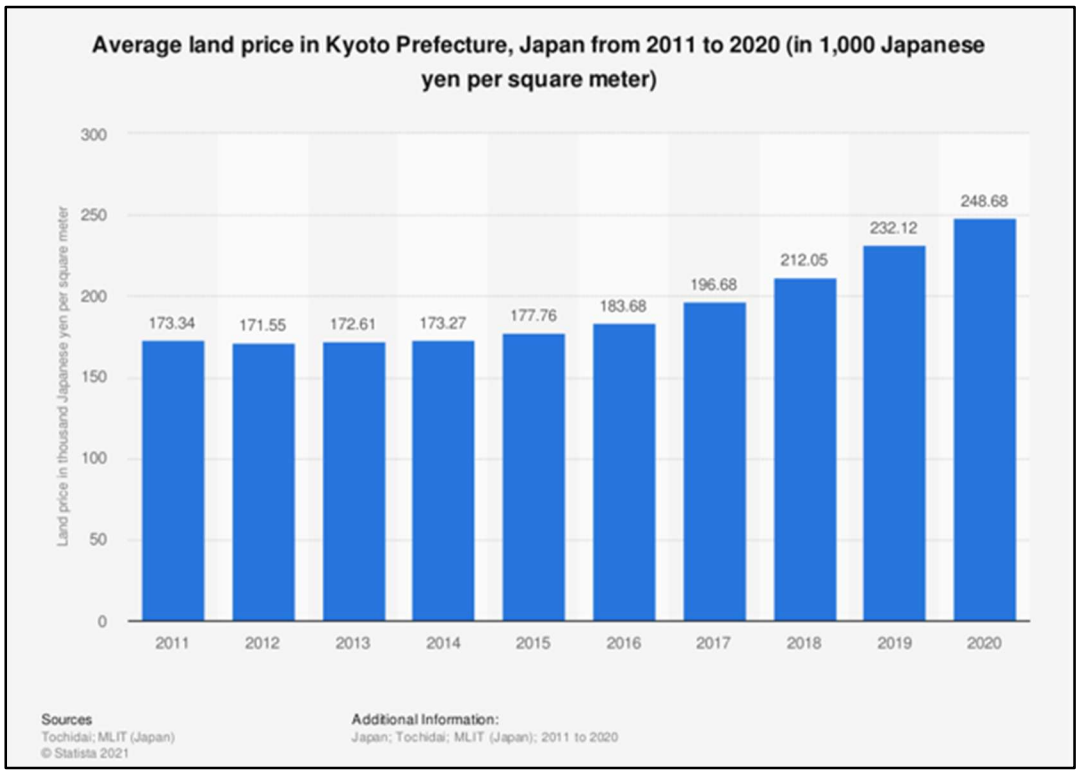


***Figure 13**: Bar graph depicting the land value changes throughout Kyoto from 2011 to 2020 from MLIT Japan.*

Other trends in housing that we have studied are guesthouses and hotels. Both types of housing are experiencing an increase. Guesthouses increased by 1.11% and hotels increased by 2.2%. In Kikuhama's particular case, twenty-five residential buildings were replaced by either a guesthouse or hotel in the last 2 years. When the ratio is skewed more towards guest housing, residential housing suffers, negatively impacting vitality.

The land value increase occurring in Kyoto (see Figure 13) acts as an obstacle preventing new homeowners from entering the market in Kikuhama. This change brings considerable difficulty to homeowners and small business owners as it becomes difficult to afford rent and maintenance.

5.2.2 Analysis of Facilities and Land Use

The increased presence of small shops and businesses suggest that urban vitality is increasing in the area. The ability of small businesses to thrive is directly related to pedestrian flow and population density, which are indicators of positive urban vitality. This only truly applies to the presence of small businesses, though, as corporate buildings and chain stores have no real effect or indication of an area's urban health due to

increased funding from the corporations that own them. The ability of these types of businesses to thrive has no reflection on the vitality of the area, but it might aid in drawing more people in. The increase in tourist housing also feeds into the increase in business presence, but likely has the same influence on the area as large corporations and chains. The increase in guesthouses would also suggest similar things about the urban health of a neighborhood as small business presence does. Based solely upon the presence of these businesses, it can be concluded that Kikuhama has positive urban vitality, especially considering the increase in business prevalence over time.

Despite the presence of all sorts of businesses, Kikuhama lacks any sort of tourist attraction. This leaves the general audience of Kikuhama to be residents or local people on a quick trip to visit some of the shops. The area does not draw in tourists, indicating a negative urban vitality as tourism drives foot- traffic and business. Based upon this aspect, Kikuhama has a negative urban vitality, but this specific factor has less of an influence on overall vitality relative to business presence and land use mixture.

To further analyze the business data, a ratio of local businesses to residential housing was calculated. We found that this ratio was roughly 2.5:1. We also calculated the ratio of residential buildings to all types of businesses (local business, guesthouse, hotel) and found that this value was roughly 1.3:1. These values indicate a large business presence relative to the number of residential lots. This makes sense due to Kikuhama's commercial district designation. This also intertwines with the land use mixture, and combined with the fact that both residential and business buildings are interspersed throughout Kikuhama suggests that the use of land in the area is varied to a considerable degree.

Taking into account the positive urban vitality suggested by this particular vitality marker, the state of Kikuhama is troubling. It makes little sense why Kikuhama is seeing a decline in population and overall liveliness as the presence of businesses and land use variation would suggest a healthy urban environment.

5.2.3 Analysis of Urban Form and Construction

Because building density is positively correlated with urban vitality, the high density of buildings in Kikuhama is a sign of good urban vitality. However, closed buildings are a sign of decreasing urban vitality, and the 5 additional closed buildings indicate a decrease in vitality. The region that saw the highest increase in closed buildings, section B (See Fig. 9), also has a significant number of empty lots, making it the least vital of the 5 sections according to the vitality markers we used. Additionally, a large cafe known as efish that served as a major draw to Kikuhama closed over the pandemic, and the building it left empty remains closed, which both is a negative indicator and lessens the incentive for people to visit.

Another facet of buildings that is an indicator of vitality is their age. A tendency towards older buildings is a positive sign of urban vitality, and when older buildings are torn down and replaced with new buildings, it impacts urban vitality negatively. In Kikuhama specifically, older, historic buildings can bring in local and foreign tourism. Based solely on data on empty lots, at least 10 new buildings have been built or renovated in the past 2 years in addition to the newer non-traditional housing that existed in 2019. Since these buildings were all completed in lots already mapped as empty or under construction in the 2019 project, this indicates an increase in vitality in 2021, rather than a decrease because no old buildings were

torn down. In Kikuhama, land prices are abnormally high compared to surrounding communities, with prices of 3 million yen per square meter. These prices, combined with loss of tourist income due to the pandemic, are causing residents to sell their homes and move away. Traditional houses are expensive to maintain in their original state, and expensive to renovate to be more efficient. The fact that the majority of the newly constructed buildings have been residences is indicative of the fact that homeowners want to live in newer buildings that are cheaper to maintain, which may cause more old buildings and traditional houses to be torn down in the future.

5.2.4 Analysis of Location and Landscape

The lack of greenspace in Kikuhama means that more buildings can be created, leading to a greater number of people and more flow of traffic, which is a positive indicator of urban vitality. Empty lots and greenspace are both negative signs of urban vitality, and the only signs of entire lots dedicated to greenery have been empty lots overtaken with grass. Overall, the decrease in empty lots and lack of greenspace is a sign of increasing urban vitality. The numerous parks outside of Kikuhama such as Shoseien Garden improve the quality of life in Kikuhama, but do not impact the urban vitality in any meaningful way.

The two rivers bordering Kikuhama serve as a draw for tourists and are Kikuhama's main locational asset. The increased housing and rent prices near the river bring more income into Kikuhama, but also encourage people to sell their houses and move away, creating more potential plots for guesthouses and hotels. This leads to a decrease in the urban vitality of the area. Outside of Kikuhama, the proximity to Kyoto Station and nearby train stops such as Kiyomizu Gojo provide a means of easy travel to and from Kikuhama that serve as a major reason why tourists stay in the area and could be a reason as to why Kikuhama became heavily focused on tourist housing. The access to nearby parks and gardens, several temples, and the Kyoto National Museum all also provide incentives to stay in Kikuhama, but fail to provide a way for temporary and permanent residents to find entertainment within the neighborhood itself. Kikuhama's problems with urban vitality stem from the lack of ways to spend time in the neighborhood, which relegates it to serving as housing alone. The numerous transportation stops nearby encourage residents and tourists to spend their time in other locations, and overall Kikuhama's locational assets are not used in a way to increase urban vitality, but instead serve to do the opposite, and provide easy means for people to travel elsewhere.

5.2.5 Overall Vitality Analysis

The overall trends in each vitality marker can be seen in Figure 14. Housing trends saw an overall negative indication of vitality as residential housing decreased to make way for increased numbers of tourist housing. This shift created an unfavorable ratio, leading to the overall negative urban vitality designation. Facilities and land use saw an overall positive urban vitality as business presence has increased and land use mixture has increased. This creates an overall positive trend despite the negative indication granted by the lack of tourist attractions. Urban form and construction indicated an overall positive vitality as construction is occurring and lot density is increasing.

Unfortunately, there is a significant presence of shuttered or abandoned buildings, suggesting negative vitality. However, overall this marker indicates positive vitality. Location and landscape saw a neutral trend in urban vitality. The lack of green space (from an objective urban planning perspective) was positive, while the transportation accommodations (lack of parking for bikes, many empty parking lots, etc) suggests a more negative vitality. The regional assets were found to be neutral because they are not located directly in Kikuhama, meaning they have no influence on the vitality within it. However, we decided to include regional assets in our analysis because they still have the potential to affect how much traffic (tourist and/or residential) is seen in the area. These three topics lead to an overall neutral effect on vitality.

Figure 14: *An infographic detailing the overall trends within the selected vitality markers. Arrows up indicate a positive effect on vitality while arrows down indicate a negative effect on vitality.*

Chapter 6: Discussion and Future Work

6.1 Recommendations and Future Considerations

6.1.1 Biggest Changes and Trends

We found that the main causes of Kikuhama's decrease in urban vitality was the lack of tourist traffic, an aging population, and the fact that many residents are selling their homes and moving away. The lack of foreign tourist traffic is caused by the pandemic, and caused many tourism related urban vitality factors that would normally be positive to have a negative effect. Tourist focused buildings do not serve as an effective method of encouraging liveliness when foreign tourists are unable to enter Japan and domestic tourists are already wary of the stigma of the area. The dramatic increase in land value which Kikuhama has seen in the past year prompts many to leave. Also, upkeep and renovation on historical buildings can be considered too expensive to be justified. The biggest difference between 2019 and 2021 in the mapping data was the decrease in residential housing and increase in guest housing and hotels. The fact that guesthouses are replacing residential buildings implies that more people are leaving Kikuhama, and the increase in guesthouses despite the ongoing pandemic indicates that more people are moving elsewhere but hoping to retain a supply of income from Kikuhama, further cementing its current role as tourist housing and detracting from the neighborhood's sense of authenticity which could draw more people to visit Kikuhama outside of needing a place to stay for the night.

6.1.2 Limitations on Project Work

Obviously with COVID-19 restrictions there were several limitations that we had to work around during data collection. The 2019 IQP group had the ability to be in Kikuhama while mapping out the area, we had to map the area through Google Street View. The pictures for Google Street View were not always up to date or easy to analyze. We also did not have the ability to ask local residents, business owners, or guesthouse owners for interviews or surveys in person. Additionally, the language barrier made it extremely difficult to email these groups to try and conduct data collection virtually. This meant we lost a significant portion of our information for analysis; the interviews and surveys would have provided a perspective on the neighborhood that we could not obtain from using Google Street View. There were also a few limitations with using our mapping software, QGIS. The software required a bit of a learning curve, so computer science background is helpful. We also found that it was difficult to draw polygons for mapping, so the shape of some buildings may be misrepresented. Overall, QGIS is a useful tool. However, it does present some challenges. We would also like to note that no one in our group has had the opportunity to go to Japan and experience the culture, but we tried our best to acknowledge how our perspective and biases would impact our analysis and recommendations.

6.1.3 Future Group Focuses

The best way to keep enhancing this project work forward is to keep an eye on trends that pertain to urban vitality. There are definitely some areas that will need more attention than others. Also depending on whether COVID-19 restrictions are lifted will determine whether or not our recommendations will be helpful. If future groups are facing similar limitations with data collection it would probably be more helpful to try and enact some of the guest housing changes, and find reliable and stable contacts to talk with, which we were unable to do with our time restrictions. Our group also did not have as much time as we wanted to fully develop our website database for the mapping data of Kikuhama. We were able to start a website for the purpose of building up the information of the area, but it will take more time and effort to make it an accessible resource for interested scholars and policy makers. This would be a great point to focus on for future IQP groups. We would like to acknowledge the fact that we faced many restrictions and limitations while performing this project work. There were many elements that, if we were on site, would have worked great for this project but we had to leave out. In spite of that we were able to build-up more data for an informative profile on Kikuhama.

If another group were to take on a project based in Kikuhama, it would be best to cover some of the bases that we did not have the time or resources to cover. Our project focused on the objective vitality of the area and did not include an analysis of the quality of life. This would be easy to do in the future if later IQP groups used our definitions for the markers of vitality and also spent time building up the next section for determining quality of life. Other points to look into would be the local healthcare and the identification of public services as these seem to build the quality of life within the neighborhood. Along with this, analyzing building lots with more than one purpose would be beneficial to the clarity and consumption of our data. This would include building lots that are owner occupied businesses, parking lots with residential buildings, or other multi purposed land.

6.2 Conclusion

Aside from the pandemic, the ever-aging population and unfortunate past also weigh on this small urban neighborhood. According to the analysis of our vitality markers, we determined that Kikuhama is not currently in a state of high vitality. However, the district appears to be striving to use its potential in the areas where its strengths lie.

The biggest areas of concern were the residential housing trends, parking lot usage, and the increased presence of shuttered/closed buildings. Based on what we have seen, we were able to generate the following recommendations. First, we recommend the conversion of excess guesthouses to apartments or community buildings to draw in residents and people from neighboring districts. We have also found that it may be beneficial to have some space allocated for bike storage as many residents seemed to use bikes as their main form of transportation. Lastly, we would recommend attracting investors to repurpose or refurbish the abandoned and shuttered buildings as the presence of rundown buildings directly affects the vitality of a neighborhood.

Overall, there were many avenues and ideas to consider when implementing our project work, but we managed to collect as much data as possible for future WPI groups and other interested parties. Hopefully when a future group has the opportunity to travel again, they will be able to use our data and recommendations in Kikuhama to help enrich and build on the strengths present in the neighborhood.

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Appendices

Appendix A: Interview Questions for Guesthouses

We are a group of students from Worcester Polytechnic Institute in Massachusetts. We are conducting interviews with guest house managers to learn more about your experiences with tourism in the area. Our goal is to understand how tourism and land use has affected the neighborhood, and your insights will be extremely useful.

Your participation in this interview is completely voluntary and you may withdraw at any time.

_____

1. When did this property become a rental property?

2. What demographic tended to be your main consumer before the pandemic compared to after the pandemic?
   Before:
   Long-Term Residents Foreign Tourists Domestic Tourists Other

   After:
   Long-Term Residents Foreign Tourists Domestic Tourists Other

   Specify other:

3. Around how many days out of the year has this rental been occupied? Which season was the busiest for you? What has your occupancy rate been like within the past year?

4. Do you feel the neighborhood has changed significantly in the past decade? If so, how and how do you feel about these changes?

5. How has land value affected your investment in the area? Can you tell us about your experiences with the land value of the area?

6. In what ways do you feel your business impacts the local community? If at all?

7. What sustainable business practices do you use, such as techniques to stay in business/manage upkeep costs, or help the environment? (A sustainable business practice is something that serves to benefit the business, environment, or community long term.)

8. How has COVID-19 impacted your business?

Appendix B: Interview Questions for Urban Design Professionals

私たちのプロジェクトでは、五條楽園・菊浜の歴史がどのように現在の状況につながっているのかを理解しようとしています。 ある場所の歴史は、その場所の軌跡にどれほど影響を与えると感じますか？

In our project, we are trying to understand how the history of Gojo Rakuen/Kikuhama has led to its current circumstances. How much do you feel the history of a place affects its trajectory?

1. 五條楽園・菊浜を京都全体の文脈で理解しようとしている。ここ数十年の間に、京都は大きな変化を経験したと思いますか？また、京都府全体に最も大きな影響を与えた変化は何でしょうか？

   We are trying to understand Gojo Rakuen/Kikuhama in the context of Kyoto as a whole. Do you feel Kyoto has experienced significant change over the last few decades? What changes have had the biggest impact in the prefecture as a whole?

2. 上記の変化は、京都府内の小さな地区にも影響を与えていると思いますか？もしそうなら、どのように？

   Do you think the changes mentioned above have affected smaller districts within Kyoto Prefecture? If so, how?

3. 観光が京都全体に大きな影響を与えていることは理解しているが、それが五条楽園・菊浜に具体的にどのように当てはまるのかがわからないのである。 観光が地域の変化に大きな影響を与えていることがわかりましたか？

   We understand that tourism has had a significant impact on Kyoto as a whole, but we don't understand how this looks when specifically applied to Gojo Rakuen/Kikuhama. Have you found that tourism has a significant influence on the change in an area?

4. 五條楽園・菊浜では居住人口が減少していることがわかりました。 これは同じような地域で見られるテーマなのでしょうか？ もしそうであれば、その地域に人が出入りする最も大きな要因は何だと思われますか？

   We have seen that there is a decrease in residential population in Gojo Rakuen/Kikuhama. Is this a theme that you also see in similar areas? If so, what do you feel is the most significant driver of people in or out of an area?

5. 五條楽園・菊浜をより良い街にするために、改善できる点を見つけたい。健全で活力のある地域の特徴とは何でしょうか？

   We want to identify areas within Gojo Rakuen/Kikuhama that can be improved to create a better neighborhood. What are some characteristics of a healthy and vital neighborhood?

6. 最近、京都の財政状況について耳にすることがあります。あなたの意見では、京都の経済状況が、菊浜のような小さな地区・区の発展にどのような影響を与えていると思いますか？

We have recently heard about the financial situation of Kyoto. In your opinion, how do you think the economic climate of Kyoto is affecting the development of smaller districts/wards like Kikuhama?

7. 私たちが現在検討している分野と似たような研究を行っていることは承知しています。私たちは、あなたの他の研究が私たちに役立つかもしれないと思っています。あなたのデータを私たちと共有していただけませんか？

   We are aware that you have performed research in areas similar to the one we are currently looking at. We were wondering if any of your other research may help us. Would you be willing to share some of your data with us?

8. 私たちはより多くの情報や調査を集めようとしていますので、もし他にこの分野を研究している方がいらっしゃれば、その方の連絡先も教えていただければ幸いです。本当にありがとうございます。

   We are trying to gather more information and research, so if there is anyone else you know that studies this area, we would appreciate if we could get their contact information as well. Thank you so much!

Appendix C: Survey Questions for Residents

私たちはアメリカのウースター工科大学の学生のグループです。地元のビジネスマネージャーへのインタビューを実施して、地域の観光と開発に関する彼らの経験について詳しく学びます。私たちの目標は、観光と開発が近隣にどのように影響したかを理解することであり、あなたの洞察は非常に役立ちます。

We are a group of students from Worcester Polytechnic Institute in Massachusetts. We are conducting interviews with local business managers to learn more about their experiences with tourism and development in the area. Our goal is to understand how tourism and development has affected the neighborhood, and your insights will be extremely useful.

この面接への参加は完全に任意であり、いつでも参加を取り消すことができます。

Your participation in this interview is completely voluntary and you may withdraw at any time.

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1. 五条楽園にどのくらい住んでいますか？

   How long have you lived in Gojō Rakuen?

2. この地域のどこが好きですか？

   What do you like about the area?

3. この地域で嫌いなことはありますか？

   Is there anything you dislike about the area?

4. 近所は時間とともに大きく変わったと思いますか？もしそうなら、あなたはこれらの変化についてどのようにそしてどのように感じますか？

   Do you feel the neighborhood has changed significantly over time? If so, how and how do you feel about these changes?

5. 五条楽園の平均家賃はいくらですか？この価格は過去10年間で大きな変化がありましたか？

   What is the average cost of rent in Gojō Rakeun? Has this price changed in any significant way in the past 10 years?

6. 近所に滞在する観光客の好きなところは何ですか？

   What is one thing you like about tourists staying in the neighborhood?

7. 近所に滞在する観光客の嫌いなところは何ですか？

   What is one thing you dislike about tourists staying in the neighborhood?

8. あなたは近所の外に旅行しますか？もしそうなら、どのような理由で？ (該当するものすべてに丸を付けてください)

   Do you travel outside of the neighborhood? If so, for what reason? (Circle all that apply)

通勤	買い物	友達や家族の娯	楽を訪ねる	その他
Commute	Shopping	Visit Friends or Family	Entertainment	Other

その他を指定してください：

Specify other:

9. あなたがその地域について何かを変えることができるとしたら、それは何でしょうか？どうして？

If you could change anything about the area, what would it be? Why?

Appendix D: Survey Questions for Local Businesses

私たちはアメリカのウースター工科大学の学生のグループです。地元のビジネスマネージャーへのインタビューを実施して、地域の観光と開発に関する彼らの経験について詳しく学びます。私たちの目標は、観光と開発が近隣にどのように影響したかを理解することであり、あなたの洞察は非常に役立ちます。

We are a group of students from Worcester Polytechnic Institute in Massachusetts. We are conducting interviews with local business managers to learn more about their experiences with tourism and development in the area. Our goal is to understand how tourism and development has affected the neighborhood, and your insights will be extremely useful.

この面接への参加は完全に任意であり、いつでも参加を取り消すことができます。

Your participation in this interview is completely voluntary and you may withdraw at any time.

---

1. ここで最初にビジネスを始めたのはいつですか？（おおよその日付）

   When did you first open your business here? (Approximate date)

2. どの人口統計があなたの主な消費者になる傾向がありますか？（該当するものすべてに丸を付けてください）

   What demographic tends to be your main consumer? (Circle all that apply)

客居住者　　外国人観光　　客国内観光　　その他

Residents　　Foreign tourists　　Domestic tourists　　Other

その他を指定してください：

Specify Other:

3. 平日の時間はどうですか？

   What are your hours like during the week?

日曜日：

Sunday:

月曜日：

Monday:

火曜日：

Tuesday:

水曜日：

Wednesday:

木曜日：

Thursday:

金曜日：

Friday:

土曜日：

Saturday:

4. この分野で事業を開始した主な理由は何でしたか？

What was your main reason for opening up your business in this area?

5. どのような持続可能なビジネス慣行を使用していますか？（持続可能なビジネス慣行は、ビジネス、環境、またはコミュニティに長期的に利益をもたらすのに役立つものです。）

What sustainable business practices do you use? (A sustainable business practice is something that serves to benefit the business, environment, or community long term.)

6. あなたのビジネスはどのように地域社会に影響を与えていると思いますか？もしそうなら？

In what ways do you feel your business influences the local community? If at all?

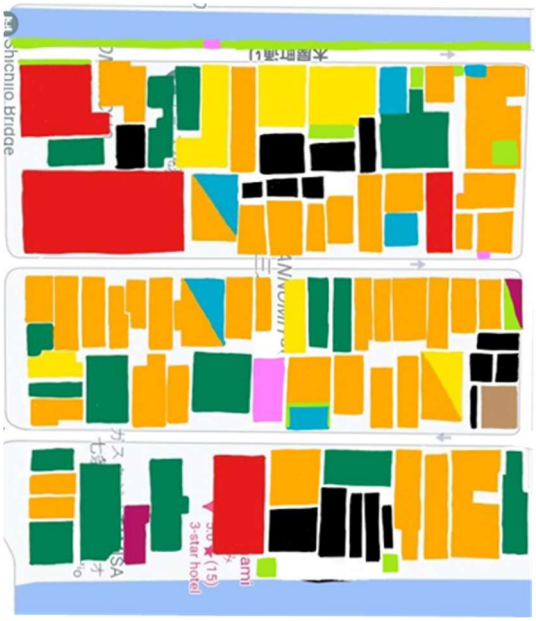
7. 近所は時間とともに大きく変わったと思いますか？もしそうなら、どのように？

Do you feel the neighborhood has changed significantly over time? If so, how?

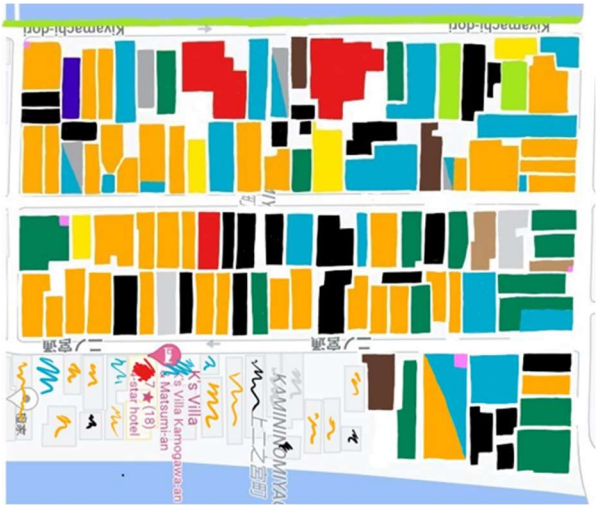
8. 観光業は、コロナの前後であなたのビジネスにどのような影響を与えましたか？

How has tourism impacted/changed your business before and after covid?

Appendix E: Rough Mapping Data



Section E Rough Map



Section D Rough Map

Section C Rough Map


Section B Rough Map

Section A Rough Map