



WPI

Identifying Growth Opportunities in the Venetian Cultural Economy

An Interactive Qualifying Project submitted to the faculty of
Worcester Polytechnic Institute

August 2021 - December 2021

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Abstract

Our project aims to identify growth opportunities in the Venetian cultural economy by creating an interactive map with the capability to display all the cultural venues and events local to Venice. Through a partnership with EVenice, and the creation of a database, we expanded both Venetians' and tourists' knowledge on the venue and events within the field of art and culture in Venice. To provide a comprehensive presentation of the data on cultural venues and events, we created a website titled *osservatorio d'arte Venezia* to complement the map, providing additional information on the details of each venue and corresponding event as well as new visualization techniques.

Executive Summary

This project constructed an observatory of the current state of the Venetian cultural landscape, detailing currently existing venues and events related to the cultural economy of the city through an interactive map. This observatory, in addition to being available to the public, has been used by our team to identify growth opportunities in the Venetian cultural economy.

There is great importance on the completion of this project, for the Venetian cultural economy is currently over reliant on tourism. As seen with the recent global pandemic, economic reliance on tourism can pose major issues in a changing world and is not a stable economic model. Therefore, this project will provide insight to possibilities to grow the cultural economy in this time of economic rebuilding as the severity of the global pandemic begins to fade and the world begins to return to normalcy.

The main deliverable for this project is an interactive map, hosted on a corresponding website titled *osservatorio d'arte Venezia*. This map displays the island of Venice and surrounding areas, marked with dots indicating points of interest. These points correspond to a database of venues and events important to the Venetian art economy, where data about each point is stored, such as name, organizational association, address, runtimes, and other related information. Due to the vast number of cultural locations in the city, these points of interest can be filtered by category, date, and search term.

To develop this map, we first decided upon the goals of the user interface and experience. It was obvious the application should be user-friendly and attractive to the public. Our team initially considered using a geographic information system software called arcGIS. We decided against this as this software relied on a license provided by WPI, which could expire in the future and render our map unusable. We opted to use Leaflet; an open-source JavaScript library made for creating interactive maps. Using this library, map data from OpenStreetMap, and imagery from Mapbox, we created a webpage with a user-friendly interface where people could search through our data and see the results in a live-updating map.

In order to support this map, we needed an organized and consistent data structure that could contain the thousands of points of interest that exist within the city. Our team first began with a spreadsheet and a short list of the main cultural players in the city, acquired through online research. However, we realized this incredibly slow method would not be sufficient. A collaboration with an organization called EVenice became the main source of data following the

initial collection. This data was drawn from their repository of events in Venice. Our team then sorted and filtered the information to better align with the goals of our project. With the addition of this data, around eight-thousand data points, it was decided a spreadsheet was not the most efficient way to store data.

An SQL database was constructed to store our data. This database holds two tables, one for location data and one for event data. These tables each have multiple columns for the individual information about each location and event, such as address, coordinates, name, and other identifying features. In addition to being more organized and less volatile than a spreadsheet, a database would allow our website to draw information directly from it. This means that if a point of interest were to be added or removed from the database, it would subsequently be added or removed to our website and interactive map. Features like those mentioned helps to future-proof our project, allowing for possible updates by future project teams.

The final part of our project development was the integration of the database with the website, allowing for optimal functionality. The webpage was built with HTML, CSS, JavaScript and PHP programming. The database was constructed using XAMPP, an open-source web server package. The background programming of the webpage makes HTTP requests based on the filter settings specified by the user. These requests go to the server hosting the aforementioned database and return the data corresponding to the filter settings. This data is then displayed by the webpage for the user to interact with and gather information from.

In the future, this map and webpage could be improved as our team was tasked with the initial set-up of these deliverables. Venice is an ever-changing city which comes with constantly changing data. Therefore, the database hosting information about the Venetian cultural sector could be updated to add more points of interest and remove those that may no longer exist. The database and website could also be updated to provide even more information about these points to users that they currently do not, such as providing images of all locations.

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Chapter I: Introduction

Venice, Italy is a popular travel destination known as “The Floating City” or the “City of Canals.” Millions of tourists flock to this historic city for its picturesque views, architecture, and food. Unfortunately, this also means that the number of tourists is increasing at an exponential rate each year with consequences for full-time residents. The influx of visitors has caused many local businesses to turn towards tourism to sustain profits. Dependence on tourism in a changeable world can lead to an unstable economy. This has proven to be the case during the COVID-19 pandemic, which dramatically limited global tourism.

This project addresses economic resilience and the quantity of cultural events in Venice. The sector of the arts is a major area of income for the city, spiking in popularity when world-renowned local events are taking place. However, the organization and planning within the city is not efficient. Events are often not advertised effectively and hence can be missed by the majority of locals and tourists alike. The venues where these events are held have yet to be mapped in their entirety or to be systematically categorized. Therefore, a mass of elementary data is currently unknown such as how many events are occurring in the city on a regular basis, the peak months for events, and the venues with the longest occurring events.

Our project will contribute to the efforts of identifying growth opportunities in the Venetian cultural economy, advancing the knowledge and organization of the cultural venues in Venice. The main goal of this project is to identify growth opportunities for new models in the cultural and artistic sector of Venice to support the program COSMO. To meet this goal, we have identified the following objectives:

1. Collect data on the existing cultural venues in the city of Venice.
2. Analyze this data and categorize these spaces into concise and useful groups.
3. Create a user-friendly online observatory of the Venetian artistic spaces, complete with interactive map.

This project will explore the current state of the cultural economy in Venice in order to identify growth opportunities within the artistic sector. The data collected will support the capacity of the arts within the city to promote new sustainable possibilities within the market.

Chapter II: Background

The Venetian economy has a deep connection to the arts and cultural history in the city, and this relationship is vital in understanding the significance of categorizing cultural venues within the city. This chapter outlines some critical background about the stakeholders and locations which currently support the arts in Venice and highlights efforts to bring change. We begin with a look at the context of the Venetian cultural economy.

2.1 The Venetian cultural landscape

Venice is known around the world for its rich cultural events held throughout the year. It is also known as a spectacular tourist destination, attracting millions of visitors and enabling the arts to thrive. The growth of tourism in Venice has pushed local jobs towards the tourist economy at the expense of a wider range of occupations in production jobs; namely artists, musicians, and filmmakers. This has caused occupations in other sectors to be nearly impossible to find, resulting in residents who do not want to work within tourism to turn towards work within the Venice Biennale, since it is better than serving pizza or being a street vendor for tourists (Piovesan, 2021).

Additionally, tourism has displaced local residential housing with the growth of hotels and other lodgings for visitors to the city. The local Venetian population has dropped from approximately 150,000 residents in 1960 to a mere 50,000 residents in 2019 (Moretti & Zirpoli, 2016). It is expected that without change this imbalance will continue to worsen, with an economy that is not stable long-term, and lose the opportunity for Venice to remain a place where arts and culture can thrive (Cristiano & Gonella, 2020).

Fortunately, Venice has a strong foundation from which to build. The city hosts a multitude of expositions that showcase its rich cultural heritage at venues including local museums, theatres, churches, and festivals. Not only do these events and exhibitions showcase local culture, but they also promote artists from around the world. In fact, the city is known globally for organizing the largest art exhibition in the world known as the Venice Biennale. For over a century this festival has been deemed the most prestigious of its kind, offering significant opportunities for artistic growth and innovation (*Venice Biennale (Italy)*, n.d.). As a center of artistic exploration and experimentation, Venice has been at the forefront of artistic advancement for decades (*The European Cultural Centre - The Gem of the Continent in Venice*, n.d.).

2.2 Key stakeholders

SerenDPT is a benefit corporation that focuses on the modern revitalization of Venice; they have established a clear mission to generate jobs in the city by developing new technology that will resolve some of the major problems in Venice. The company was created in 2017 to develop technology designed to solve issues in the local area, aiming to eventually market these solutions internationally. SerenDPT stands for Serenissima Development and Preservation through Technology and is a company that aims to develop an innovative business model which focuses on Venetian residents in order to create solutions for the community (Apollo, n.d.). In order to build community collaboration, SerenDPT collects, compiles, and hosts an archive of its data. SerenDPT aims to achieve success by working with the H3 factory, which allows them to develop projects and startups, host events, facilitate training courses, and create networking experiences (SerenDPT, n.d.). This helps to promote the economy by aiding Venetian citizens in getting high profile jobs, thus leading to a more sustainable job market.

Among those trying to rebalance economic and residential resilience in Venice, COSMO a program organized as an offshoot from the larger company SerenDPT. This program was formally created in September 2020 to offer project management, technical direction, and management (COSMO - SerenDPT, n.d.). This independent production is located inside the H3 factory space in the ex-church of Saints Cosma and Damiano. Their mission is to aid in the artistic and cultural needs of artists in Venice (SerenDPT, n.d.). They provide incubator space for local artists to produce and exhibit their work while surrounded by like-minded individuals and resources. It was created to respond to the demand for new production models. This includes supplying artists and producers with cutting edge technology that can allow them to express themselves in innovative and modern ways (E. Wiltsch Barberio, personal communication, September 15, 2021).

2.3 COSMO: Innovators and changemakers in the arts

COSMO aims to achieve their goals by working with the H3 factory, which serves as a headquarters for both the program and its parent company, SerenDPT (COSMO – SerenDPT, n.d.). This independent production and event space was created in response to the artistic and cultural needs of the music and sound fields. Together, their emphasis is on the modernization of the city, weaving digital and technological innovation throughout the rich cultural heritage

already present.

The H3 factory aims to meet the needs of the city by supplying the tools and space necessary to foster the arts. The main goal of this innovation center is to provide a space that can reply to any request, allowing for artists to create and exhibit their work, while also allowing this entity to develop projects and startups (SerenDPT, n.d.). In the 2008 renovation, the space was equipped with meeting rooms, offices, makerspaces, and in-house studios available to rent for the artists to use. The newly renovated offices within COSMO's first floor are displayed in Figure 1 below.



Figure 1: Offices and studios for COSMO on the bottom floor of the H3 Factory (SerenDPT, n.d.).

COSMO concentrates on culture-driven activities both internally and externally of the structure to promote artists and their individual artistic pursuits. The goals of the COSMO program closely correlate to the success of a strong arts economy. This type of economy is both necessary and important.

2.4 Biennale effects on rentals

The Venetian Biennale is an international exhibition, established in 1895, exploring the cultural sectors of art, architecture, film, dance, music, and theatre. Today, it is recognized as one of the most esteemed cultural celebrations worldwide (*Organization*, 2017). In 2021, the Biennale hosted 112 participants in competition from 46 different countries, with 60 national participants, providing exhibition space for the artistic or architectural works created for the event (Valencia, 2021). This international representation gives the Biennale a reputation that draws visitors from all over the globe; because of this, the months during which the Biennale takes place are a high point for Venetian tourism.

The Biennale opened on May 22nd this year and brought in 31,000 visitors within 24 days, 30% of those visitors coming from abroad. Venice has roughly 300 hotels, by the start of the exhibit 70% of them had opened with 60% of the rooms booked on the weekends during mid-June (Imam, 2021). This tourism spike makes this time period ideal for other galleries, exhibitions, and events in order to maximize visitor counts. Therefore, it stands to reason that exhibition spaces available for rent will be booked more during this time.

The never ending influx of tourists causes residents to leave their homes and these spaces are then turned into hotels or filled with an exhibition. Over the years, an unfathomable number of places in Venice have been modified to satisfy tourists' needs, changing the appearance and historical significance of these buildings. In 2012, Venice had around 60,000 residents, whereas 6 years later in 2018 that number had decreased by 10%, standing around 54,000 residents (Tantucci, 2018). Due to the constantly increasing tourism and forced emigration of Venetian citizens, Venice is losing its historical roots by taking on a more modern and commercial front in response to overtourism, causing a detachment between residents and their territory (Fiorin, 2019).

2.5 Importance of the arts in the Venetian cultural economy

An economy that supports arts and culture is important for the diversification of value in the market (Vickery, 2017). Services related to the arts and culture supply cause direct economic benefits to the region in which they are located. In addition to providing jobs and attracting individuals through means of tourism, these industries can increase the quality of life and contribute to community development (*Arts & the Economy*, 2019).

To develop a strong economy in the arts, the cultural industries must broaden their scope, which can be successfully done through the marketing of the artistic and cultural sector. It is argued that this marketing should be left to agents and dealers rather than the producers of the art (Flores et al., 2010). However, a value-based approach aiming to strengthen an economy in the arts aligns with the ideals of those who reside in the art world for their profession. Artistic spaces and events often do not have clearly defined opportunity costs or elasticities in their supply and demand, so they must rely on the governing body and general public placing significant importance on the subject (Klamer, 2016). Marketing of the arts will allow a greater number of individuals to place personal value on the arts, hence increasing their willingness to pay for related events in the future.

For an economy as such to thrive, a shift in mindset about what defines a skilled individual must occur. Traditionally, advanced economies are defined by those in higher education, often university graduates with post-graduate education. Instead of defining skill through fixed capabilities, it is vital to consider an individual's value in a skill set through a model of their talent and knowledge makeup (Vickery, 2017).

2.6 Types of venues (definitions)

Venice has dedicated space to host and amplify cultural events. The rich expression of the arts and the preservation of art spaces give Venice a tremendous advantage in its efforts to restore and grow a local artist economy. Fortunately, there are organizations that are local to Venice, continuously immersed in the cultural economy, and well-positioned to take the lead. We have separated the venues of the Venetian cultural economy into the following 5 categories: exhibits, museums, music, shows, and other.

Exhibits

There are both indoor and outdoor exhibits to be found throughout Venice, many of which are publicly displaying art. Galleries allow an artist to display and sell their work, as well as create connections with other artists to be established. They also aid in promoting the works of artists, and are home to various types of artistic works, such as paintings (oil, acrylic, watercolor), sculptures, and wooden carvings (Koshal, 2011). The Venice Biennale is internationally one of the biggest events in the artistic world, with it changing from focusing on

art to architecture every year. There are two main venues, the Arsenale and the Giardini della Biennale, although there are various off-site locations throughout Venice. The 17th International Architecture Exhibition ran from May 22nd-November 21st in 2021, whereas the 59th International Art Exhibition will take place from April 23rd-November 27th in 2022, next year (*La Biennale Di Venezia*, n.d.).

Museums

There is no shortage of museums to visit in Venice, defined as a building where the exhibited objects are the most important feature, rather than the building's architecture (*Museums in Venice, 2021*). Museums, much like galleries, are also dedicated to showing predominantly visual artwork. However, museums tend to have fixed exhibits for non-profit, whereas galleries are constantly changing and are commonly profit-based. The Fondazione Musei Civici di Venezia (MUVE) is a private entity founded by the City of Venice that hosts 11 museums, some of the most notable being: Doge's Palace, the Museo Correr, Ca' Rezzonico, and Ca' Pesaro (*Fondazione Musei Civici Venezia | MUVE*, n.d.).

Music

Venice is a town full of music, whether it be street performances, concerts, orchestras, or operas. Opera houses are theatres that are specifically designed for the performance of opera, rather than a multitude of performances, which theatres house. One of the most notable being Fenice Opera House, where you can listen to music and opera of the highest quality. In the early 18th century, Venice housed 7 full-time opera houses, and throughout the centuries gave way to many great composers, such as Igor Stravinsky or Antonio Vivaldi (Norwich, 2013). In addition to the historical opera houses in the city, there is also a multitude of jazz clubs, concerts, and orchestras occurring. Churches and palaces are used as the stage for musical performances, allowing the spectator to be fully immersed in the experience and granting them a memorable night (*Music in Venice*, n.d.). One such experience is the Collegium Ducale Concerts, which is a notable musical performance taking place in the reception room of the Prisons Palace at Doge's Palace (*Concert and Opera Music and Halls in Venice Italy*, n.d.). Venice is home to the Biennale Musica, which is an International Festival of Contemporary Music. The 65th International Festival of Contemporary Music was held from September 17th-26th in 2021,

where daily events occurred that focused on the dramatic composition of vocal sounds in regard to music (*Biennale Musica 2021*, n.d.).

Shows

Many venues throughout the city of Venice, Italy hold artistic performances. These can be live, through documentation, recorded, written, or presented by other various means. One such venue where artistic performances have been held are theatres. Over the centuries, many theatres have opened throughout Venice and been host to great musical productions and other theatrical performances. Notable theatres include: Teatro di Palazzo Grassi, Teatro Malibran, and the Teatro Goldoni (*"History of Opera in Venice," n.d.*). Venice has been a film location for countless movies, whether they be Italian or foreign. Not only is Venice a popular city to shoot films, it is also home to one of the oldest, and most popular international film festivals in the world; the Venice Film Festival, organized by the Biennale. This festival, first being held in 1932, usually takes place in late August or early September at the Palazzo del Cinema of Venice - Lido (*Venice Film Festival*, 2012). The 78th Venice International Film Festival was held from September 1st-11th in 2021 at Venice Lido. Venice is also home to the Biennale Danza, which is an International Festival of Contemporary Dance. The 15th International Festival of Contemporary Dance was held from July 23rd-August 1st in 2021, only running for approximately one week. This festival features soloists, international companies, and specific training projects daily (*Biennale Danza 2021*, n.d.).

Other

These events are not limited to one main category and one subcategory, they can be multiple. Subcategories can be paired with any main category in order to further specify the nature of the event; every event listed has at least one main category, but only some events have subcategories, since not every event necessarily has one.

Chapter III: Methodology

The main goal of this project is to create an online observatory of the local artistic spaces in the city of Venice. In Italian, the word observatory, or *osservatorio*, stands for a company or entity that collects and “observes” data on a certain topic. In our case, our team has created an entity that is centered around identifying the local artistic venues of Venice along with their corresponding events. This project provides a place where locals and tourists alike can discover and explore the vast array of artistic spaces the city has to offer. By providing knowledge and accessibility of the events in the cultural sector, awareness of the rich culture within Venice will grow and new growth opportunities can be identified.

The scope of this project is restricted to interacting with the field of art and culture in Venice. Specifically, we will focus solely on the existing physical spaces and the events held within them. The first task our team completed upon arriving in Venice was creating a list of culturally important venues. Venues our team deemed as culturally important were chosen by their encouragement of art that is created by locals or smaller, independent artists. We also included large museums that heavily influence the touristic sector in Venice. We then forwarded this list of locations to our sponsor to get feedback from a local on whether the selected locations were accurate. After this first round we went and gathered more data on each of these locations, and then had it reviewed by four more people, all directly involved in the Venetian artistic scene. After this review we finalized this list of culturally important locations as places of interest for our project going forward.

After making this list we were in search of more data and made a connection with Filippo Merlo, the founder of EVenice. EVenice is a website that aggregates and displays events happening all around the city of Venice, they are categorized, and each has a location associated with it. We met with Filippo, and he aided us in understanding how the EVenice website is set up, as well as the data structures behind it. With this understanding in place, we were able to write a script in Python that collected all of the data from the EVenice website. More details about the data scrape can be found in Appendix C. The data scraped from EVenice came classified with a variety of tags describing each event’s category and focus. These were adapted to tags in English that could be applied to events in our analysis. The exact conversion can be seen in Appendix D, while the final tags can be seen below. There are Category 1 tags in bold: These tags are the best description of what an event was, while remaining general to an extent.

Category 2 tags are listed below the bold: These provide more detail about an event and are not restricted to a single Category 1 tag, they are simply there to provide more detail on what an event can provide.

Table 1: Classification of categories

Exhibit	Museum	Music:	Show:	Other:
(Rotating):	(Permanent):	Orchestra	Dance	Party
Gallery	Classical	Band	Theatre	Nightlife
Collection	Contemporary	Opera	Film	
Historic	Civici	Biennale	Biennale	
Biennale	Historic			

This feature is one that our team adopted when creating our observatory, categorizing the events into sections and subsections. The collected data was entered into a database created by our team. Data can be drawn from our personal database and is used in both an interactive map and our website.

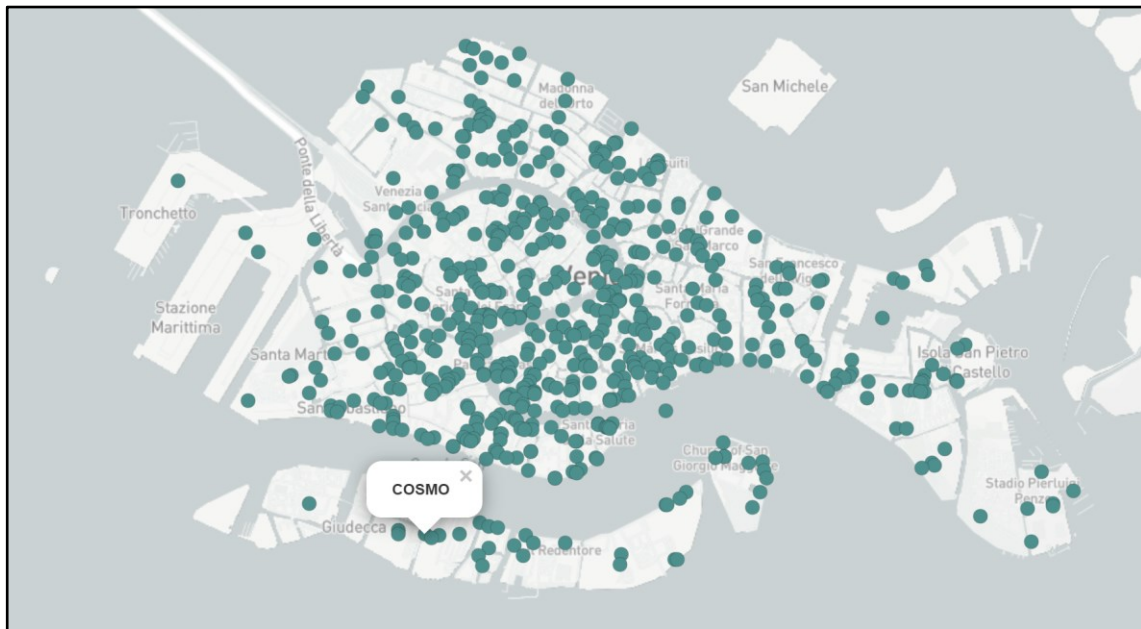


Figure 2: Image of the interactive map with the venues shown as point markers.

The main deliverable developed by our team is an interactive map for the observatory we created. An image of the map display can be seen in Figure 2. A key feature of this map is its ability to stay up-to-date automatically with E Venice's new events and locations so that it requires very little maintenance in the future. In the case that it does need maintenance, or improvements are to be made in the future, we have outlined details on how to download and work on the site's code in Appendix E. This map has the capability to display all cultural venues local to Venice, as well as the events which take place there. The map also features a navigation panel, which contains a search bar where users can search for venues and events by name or keyword, category checkboxes to filter the results, and date fields to specify a certain time range of events. A visual of the search and filter options can be seen below in Figure 3. Each venue listed within the map contains information on all of the events held at this location from 2015 to present.

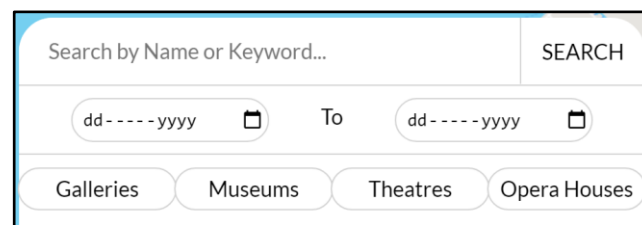
The image shows a search and filter interface for an interactive map. At the top, there is a search bar with the placeholder text "Search by Name or Keyword..." and a "SEARCH" button. Below the search bar, there are two date input fields, each with a calendar icon, separated by the word "To". The date fields are labeled "dd- ---- -yyyy". At the bottom, there are four category filter buttons: "Galleries", "Museums", "Theatres", and "Opera Houses".

Figure 3: The interactive map provides features to users including a search bar, filter by date, and filter by category.

To help support our efforts, our team also developed a website to provide data on venues and events. This site, hosted by Google Sites, is officially titled *osservatorio d'arte Venezia*, and contains details about some of the major players in the Venetian cultural economy. These include the Venetian Biennale, the Venice Civic Museums Foundation, the Querini Stampalia Foundation, and the Peggy Guggenheim Collection. On the respective pages for each of these cultural players are a description of the player, as well as a link to their respective webpages.

On the website is a link to our team's interactive map. The map accesses our team's project data from a custom SQL database, created using XAMPP, currently hosted on an independent website. This database is structured with two tables, one for locations and one for events. These tables contain entries with specific data on each entry, including coordinates, venue title, event dates, and more. The map makes live requests to the database with parameters

based on the filter and search settings set by the user through the navigation panel. The database uses these parameters to search through the tables, then sends the corresponding information back to the website, where it is displayed for the user to view and interact with. The use of a database helps future-proof the project. That is, if in the future new venues are created, they can simply be added to the database through the administration page. Then, the interactive map will automatically update to display the new information. This enables people, such as future IQP teams, to collect more comprehensive data on the venues and events in the historic city, and update the map to showcase the most recent and relevant data for analysis. Players are a description of the player, as well as a link to their respective webpages.

Finally, our team collected data on the current associations running in the city of Venice. This data is hosted on the city's official webpage. To collect data on the associations, we wrote a script in Python that captures all the data for each association and saves it. We were able to collect all the associations registered with the city dating back to 1992 with this script, which is when the city started keeping the records. This script can prove useful in future years to those looking for more recent data on the associations in Venice, so information on how to run the script and where it can be found is in Appendix F.

Chapter IV: Results and Analysis

While the full extent of our results and analysis are covered in our team's booklet, we thought it important to provide a synopsis in our report. The following expands upon the topics of interest discussed in the booklet.

4.1 Venice: A hub of arts and culture

Venice is world renowned for its artistic and cultural heritage. It is home to a vast array of museums, exhibitions, musical performances, events, and locations that make it a popular destination for tourists from all over the world. The following sections demonstrate the extent of the city's cultural importance and help explain ways in which COSMO fits into the existing artistic landscape.

Venues

According to the data provided by EVenice, there are 912 venues in Venice relevant to our project (*Eventi a Venezia Nel 2021 | Rimani Aggiornato Con Evenice.It*, n.d.). Of these, 90 are considered main venues. For a city of its size, this is an extraordinary number of cultural venues. In fact, this comes out to approximately 3.53 artistic venues for every 100 residents. This is astronomical when compared to other major cities like New York City, Berlin, and Tokyo, with 0.188, 0.0996, and 0.0037 artistic venues per 1000 residents respectively. These numbers are dwarfed by that of Venice, demonstrating the emphasis placed on arts and culture within the city.

However, despite the jarring number of cultural venues present within the historic city, the majority of these spaces are dedicated to the exhibition of artworks, rather than their production. That is where a company, such as COSMO, comes in. By implementing variegated tools, equipment, services, and spaces necessary for production of a multitude of artistic works, COSMO can fill the gap in the cultural economy and establish a foothold as an ideal workspace.

Events

Hosted at the many cultural venues in the historic city of Venice are a multitude of events. These events, ranging in type, duration, and location, span the entire year. In total, according to EVenice, there have been 7519 events since 2015. These events have a combined

runtime of approximately 18,129 days, or nearly 50 years.

The cultural events in Venice create a massive tourist draw, totalling nearly 600,000 visitors in 2019. The influx of tourists caused by the existing events in the historic city provides an audience for possible new artistic endeavors. That is, while tourists are visiting the historic city for major existing events such as the Venice Biennale, they will likely visit other attractions as well, providing a base number of potential visitors to new artistic programs.

This means a program such as COSMO has little need to create a draw of its own. Instead, the already existing pool of tourists will be present to attend any exhibitions or showings COSMO hosts. Meanwhile, local producers of the arts will be able to take advantage of its production space.

4.2 Data Sets

In order to identify specific areas of opportunity within the Venetian cultural economy, our team analyzed 4 separate data sets: EVenice, Main Cultural Players, 2019 Annual Tourism Report, and Associations data. The results from these sets of data were ultimately combined to reach a conclusion for the program COSMO.

EVenice

Through the generosity of EVenice, our team was able to acquire and analyze thousands of events held from the fall of 2015 to current. Sorting and manipulating the data allowed for the identification of trends and connections between many of the venues and the exhibitions they hold.

As previously noted, these events were split into five categories: music, exhibits, shows, museums, and other. We first decided to analyze the number of events per category. This data set included all events documented by EVenice from the company's beginning in 2015 to November of 2021. Results can be seen below displayed in Figure 4.

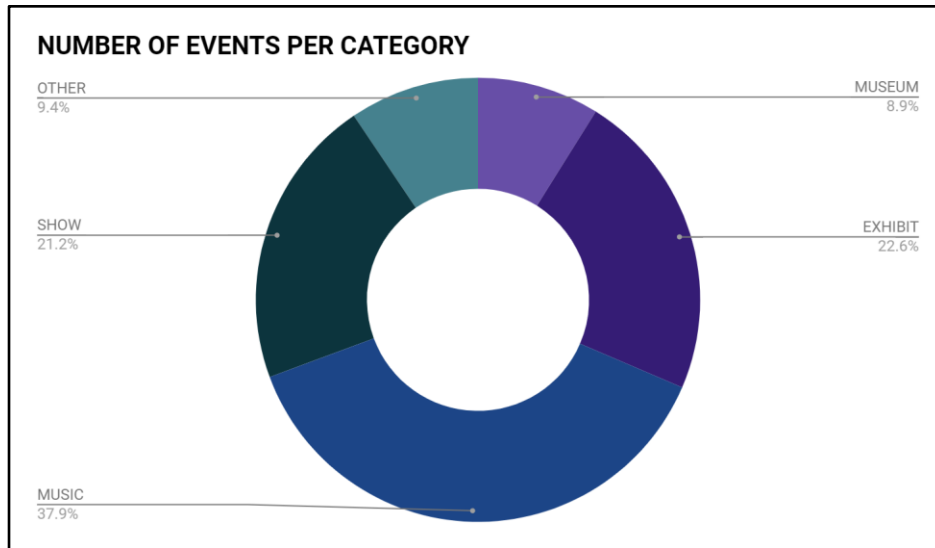


Figure 4: Number of events per category.

Based on the data we can conclude that the category ‘Music’ held the greatest number of events in the past 5 years. The next greatest in number was Exhibits, followed closely by Shows. Music holding the greatest number of events was unexpected. Venues such as opera houses and theatres tend to host larger musical events at a long duration, but without immense frequency. We can therefore attribute the inflation of musical events to those held at bars and clubs scattered throughout the historic city. We can conclude these bars and clubs may advertise local showings on a more frequent and consistent basis.

We can also conclude that the category ‘Museums’ held the least number of events in the past 5 years. Although great cultural venues of the historic city, museums do not tend to host recurring events. They instead contain permanent exhibitions year-round for visitors to view at their leisure. Events such as the opening of a temporary exhibition can occur but are not to be expected on a regular basis.

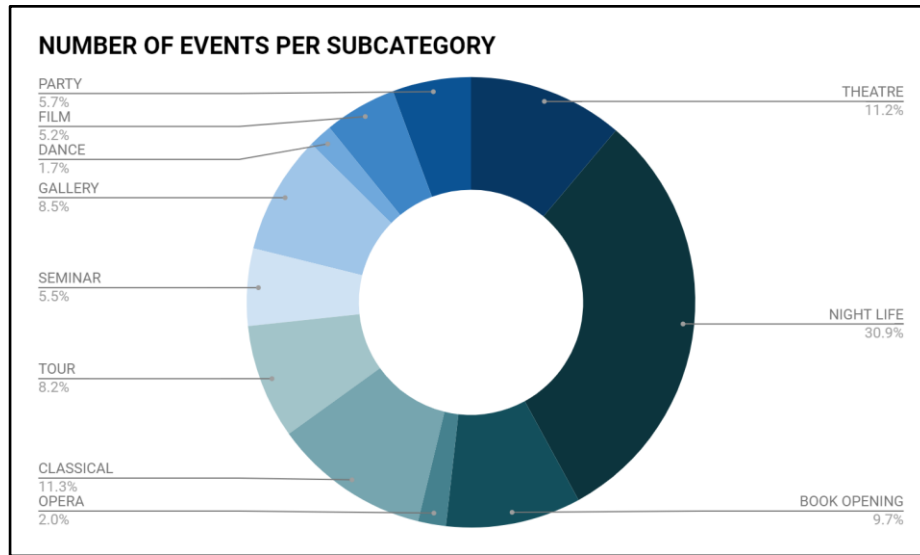


Figure 5: Number of events per subcategory

Events were further categorized into subcategories. These subcategories were added in addition to the main categorization in order to further specify the type of event and its purpose within the historic city. Subcategory labels include party, film, dance, gallery, theatre, seminar, night life, tour, classical, opera, and book opening as previously outlined. Figure 5 above includes the total number of events since the beginning of EVenice in 2015 to November 2019.

After graphing the number of events per subcategory as displayed in Figure 5, our team discovered that night life appears with the greatest frequency, with 30.9% of total events containing the subcategory. This finding was not unusual and further supported our research indicating that many of the events in the historic city, especially when related to music, occur most frequently at smaller evening venues such as bars, restaurants, or clubs. Following night life was classical and theatre, nearly tied at 11.3% and 11.2% respectively. The subcategory ‘classical’ refers to classical music events hosted within the historic city; however, it can also refer to museums hosting classical artworks and exhibitions. Due to the fluidity of the classical, it was not surprising that many events were able to fall into this subcategory. The presence of classical within the event data strengthens the previous finding that the music category holds the greatest number of events as well. The subcategory ‘theatre’ interestingly accounts for over half of all category events in ‘Show’. Although this appears to provide a basis for the argument that there is a lack of event frequency in this area, we must account for the manner in which EVenice lists their events. All theatre, film, and dance events that have recurring showings in the historic

city were listed as one long event for the duration of the entire showing rather than several shorter events. Therefore, the number of shows displayed in the data set will be skewed.

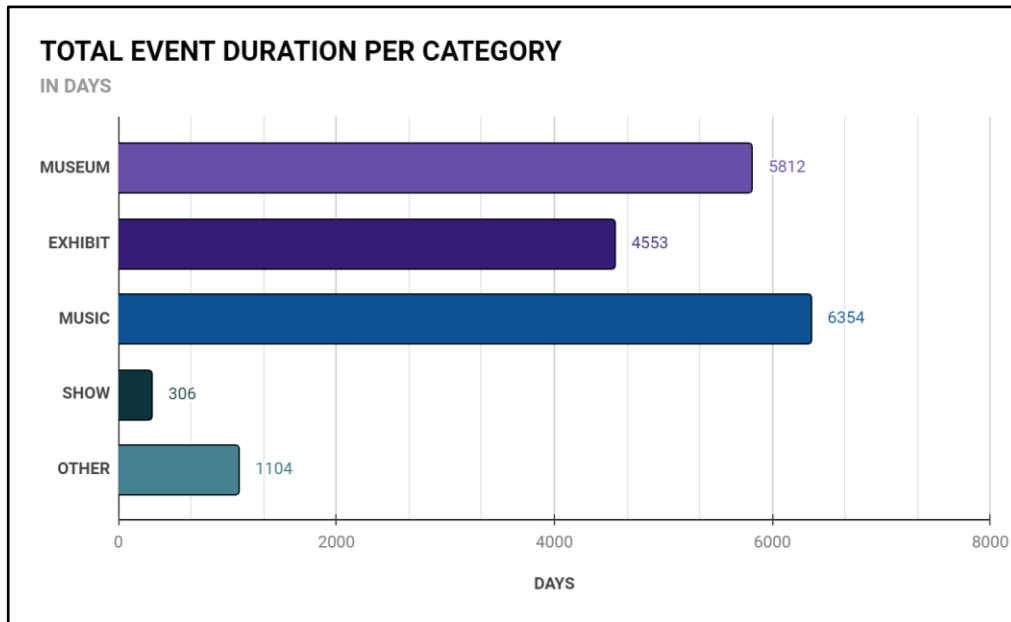


Figure 6: Total event duration per category

Our team also analyzed total event duration per category, as seen in Figure 6 above. The results, while interesting, may be skewed due to the data entering methods of EVenice. Events that had recurring showings or recurring hours were listed as one long event rather than separate shorter events. Therefore, it must be acknowledged that this could affect the results. However, most of these events whether shorter separate events or longer singular events would be sorted into the same main category, confirming the validity of providing figure 6 above.

The category with the longest duration was determined to be Music with a total of 6354 days. This finding means that there must be overlap to when the events occur, as this number exceeds the number of days in the late 2015 to November 2021 timeframe. However, the single event in particular with the longest runtime in Venice, Italy is the Venice Biennale as discussed earlier. The art and architectural exhibits, alternating annually, take place over a period of 6 months in the historic city. Other events corresponding to the Venice Biennale also take place throughout the year, including events focused on film, dance, and theatre. When categorizing our data, the Venice Biennale of art and the Venice Biennale of architecture were categorized as exhibits. As such, it was surprising that the exhibit category did *not* subsequently have the

longest total duration. Upon further analysis, the result is logical as the music category had the highest number of events by a significant margin. Additionally, many music venues have a specific “season” during which they continually host events. Noting that these seasons were listed as single events with longer runtimes, it becomes easy to see how the music category attained such a long total duration.

Museums had the second longest total event duration at 5812 total days. Although museums have the least number of events, the temporary exhibits hosted at museums often run for a long period of time. Hence there do not need to be a large number of these longer duration events, as the total number of days accumulates quickly.

2019 Annual Tourism Report

The most recent data set released by the city of Venice, the 2019 Annual Tourism Report, contains numerical data on many of the popular venues in the historic city. Three venues in particular identified as main cultural players are included in this data set: the Venice Biennale, Civic Museums of Venice, and State Museums of Venice.

There is a large investment in the city’s promotion of culture on the island, with 570 associations out of 1186 associations based in Venice’s historic center being related to culture. This implies that culture plays a key role within the dynamic of the city since nearly half of the historic center’s associations are related to culture. The Venice Biennale, Civic Museums of Venice, and State Museums of Venice are venues that are significant in providing space for both local and outside artists. These exhibitions serve as rich, reputable sources of artistic information, and although they are known to attract the majority of tourists that visit the historic city, they hold crucial cultural value for locals and tourists alike.

The Venice Biennale is a temporary exhibition held in Italy; our data has proved that out of all the temporary exhibitions in the country, the Venice Biennale is the most visited. In 2021, the Venice Biennale attracted 31,000 visitors within 24 days, 30% of those visitors coming from abroad. By the opening week, 70% of hotels had opened with 60% of rooms booked on weekends in mid-June (*La Biennale di Venezia*, 2017). This proves that during the months of the Biennale, the cultural economy is boosted due to the influx of tourists coming to visit the international art exhibition.

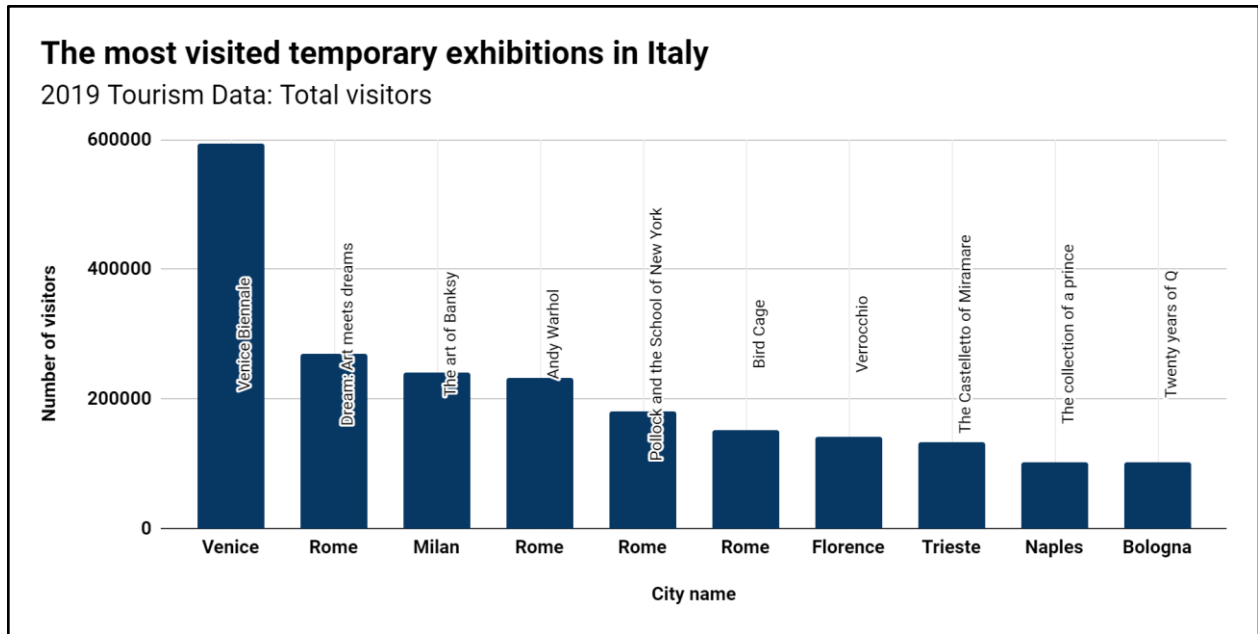


Figure 7: The most visited temporary exhibitions in Italy from 2019 tourism data.

As displayed in Figure 7, this temporary exhibition attracted 593,616 visitors in 2019, which is more than double the number of visitors than any other temporary exhibition in the country (Yearbook of Tourism, 2019). This number approaches the sum of all visitors to Rome’s top four temporary exhibitions combined at 683,303 visitors. 28% of all total visitors that traveled to temporary exhibitions in Italy attended the Venice Biennale. With over ¼ of the visitors to these temporary exhibitions in the historic city, there will be an increase in visitors to other nearby venues as well. The Biennale works to draw in additional visitors to Venetian cultural venues, ultimately increasing the value tourists place on the artistic sector as a whole.

The Civic Museums of Venice is a collection of museums run by the city, and holds over 700,000 works of art and culture (*Musei Civici Venezia*, 2014). These venues host research, education, and temporary exhibition production for local and outside producers alike. The Venice Civis museums regularly receive over 2.2 million visitors per year (*Yearbook of Tourism Data*, 2019). Figure 8 below shows the number of visitors per month in the year of 2019.

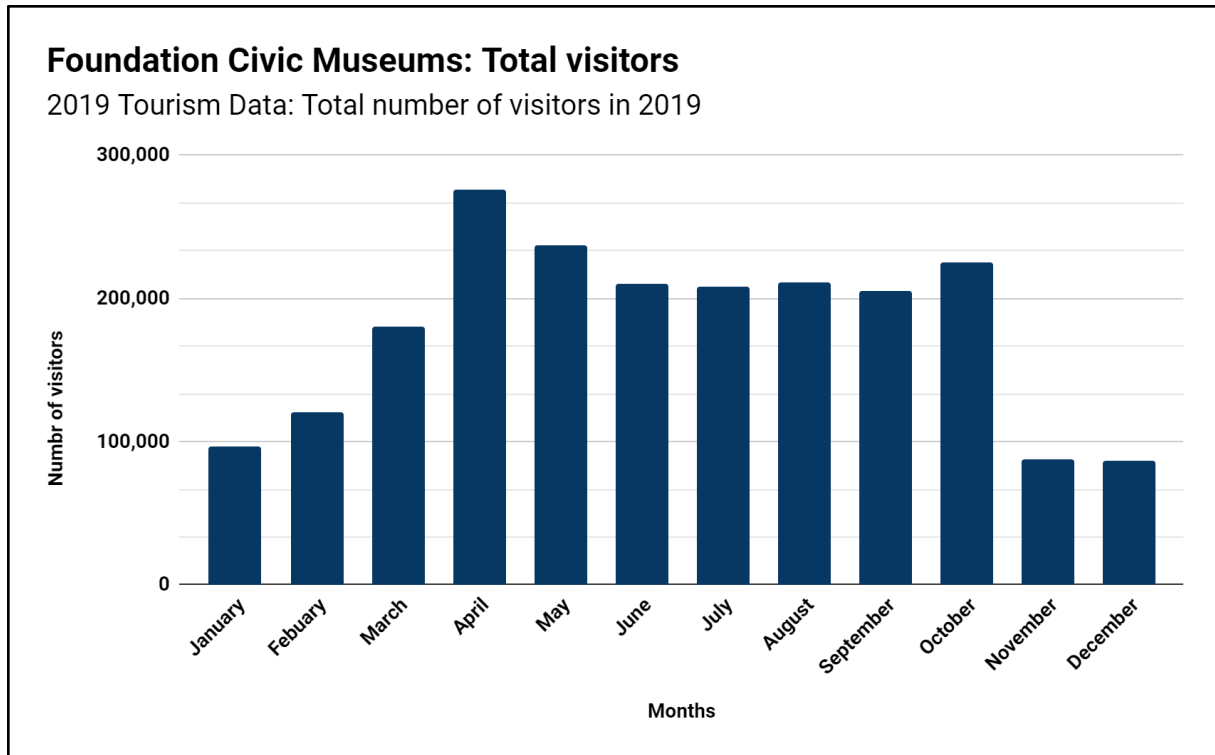


Figure 8: Total visitors to the Foundation Civic Museums from 2019 tourism data

In Figure 8 above, note the peak number of visitors in the months of April, May, and October. We can attribute these peaks in the number of visitors to the beginning and end of the Venice Biennale, as tourist numbers rise to witness the temporary exhibition. These tourists, already in the historic city, then are available to visit other cultural venues during their stay. This therefore increases the number of visitors for related venues that the city holds. We can see again in figure X that when the Venice Biennale is not occurring from mid-November to March, the number of attendees to the Civic Museums of Venice subsequently decline as a result.

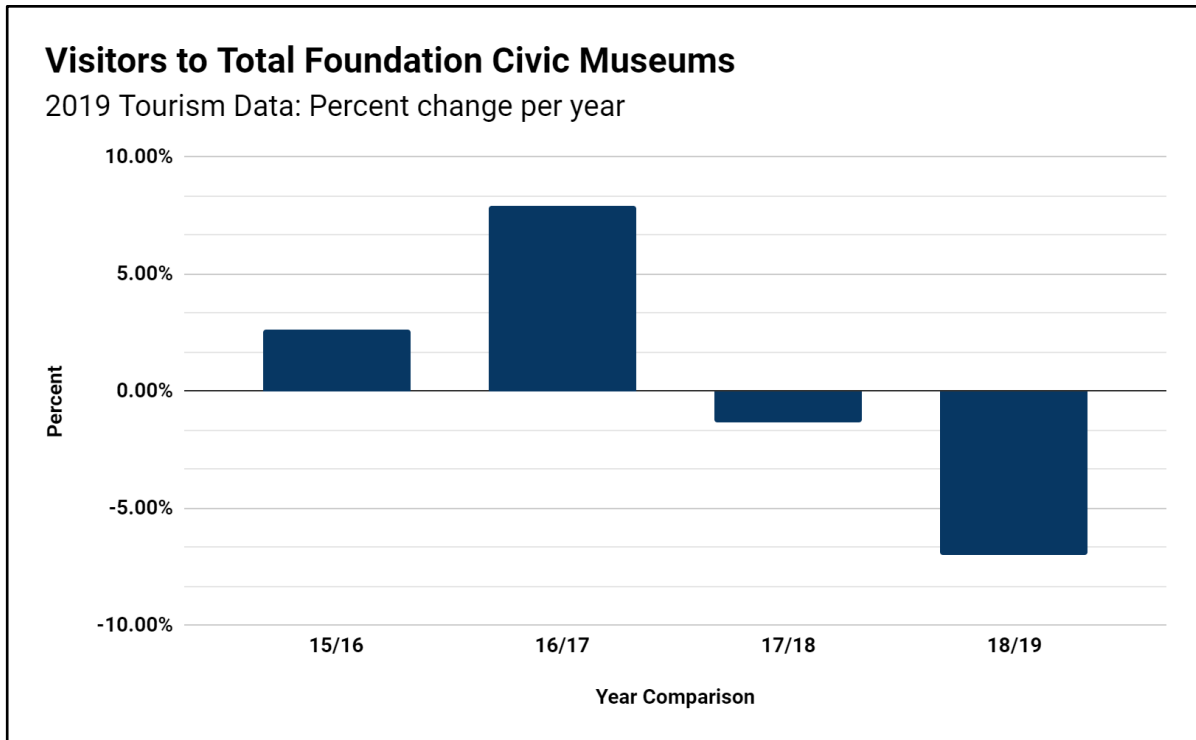


Figure 9: Visitors to Total Foundation Civic Museums from 2019 tourism data

Figure 9 above displays the percent change in visitors, at most approaching 8%. This shows that there is a consistent flow of tourists visiting the historic city, with over 2.2 million visitors expected to attend the Civic museums each year.

The State Museums of Venice attract around 800,000 visitors annually (*Polo Museale Veneziano*, 2014). These venues consist of palaces and museums which showcase not only historical architecture, but also extensive art collections available to the public. Our findings have proven that the most visited State Museums are the Accademia Galleries and the Archaeological Museums, combining for a total of over 600,000 visitors (*Yearbook of tourism data*, 2019).

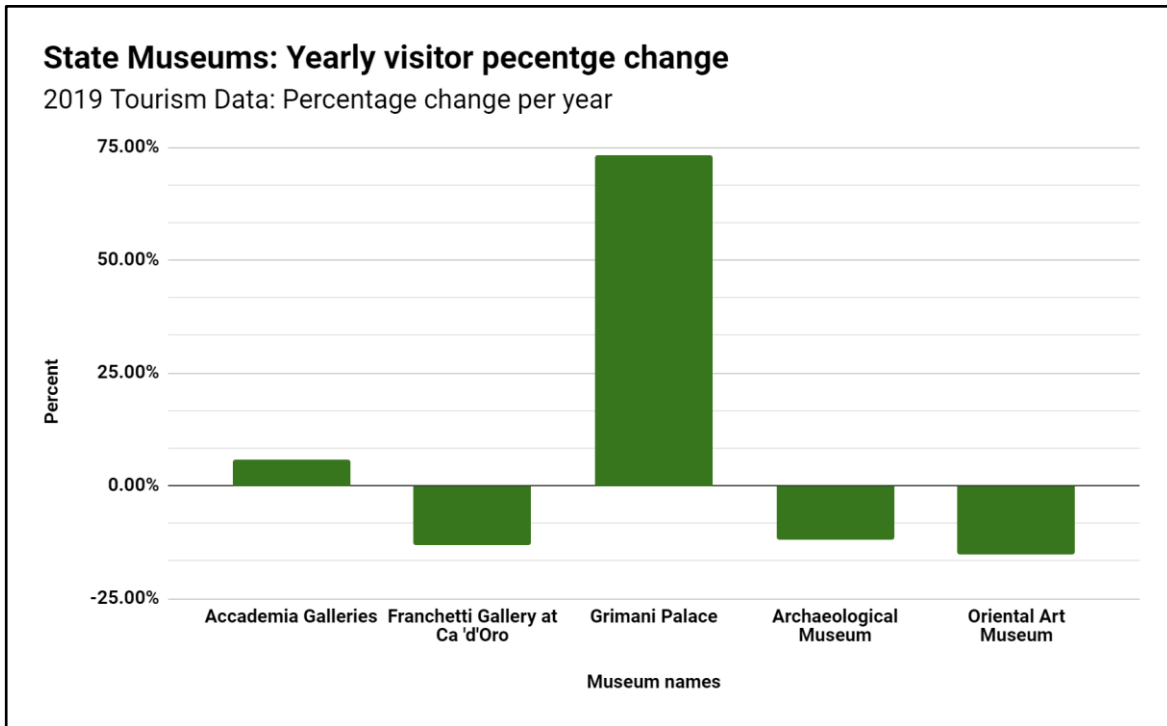


Figure 10: State Museums yearly visitor percentage change based on 2019 tourism data.

In 2019, the state museums totaled just over 750,000 visitors. Figure 10 above displays the percent change in the number of visitors from 2018 to 2019 (*Yearbook of tourism*, 2019). Based on previous findings from the Biennale and Civic Museums, as stated above, these visitors are likely to attend other events in the historic city, ultimately increasing the opportunity for other cultural venues to see increased attendance.

Main Venues

Identified by our team with the guidance of a member of the cultural economy, this data set only included the most noteworthy venues in the historic city that provide for both tourists and locals alike. The data set was later reviewed by four members who work in the cultural sector to confirm its validity. In total, 90 main venues were settled upon.

When compared alongside the venues identified by EVenice, our team discovered that only approximately 10% of the EVenice venues can be considered “main venues.” This indicates that the vast majority of current venues that support events in Venice cater almost completely toward tourists rather than locals. In turn, a gap can be identified for venues that are centered around the needs and wants of locals within the cultural economy. Since COSMO is a program

focused on building innovative creative pursuits specifically for local producers, there is growth opportunity within this specific sector of the economy.

Associations

The association data, gathered through the City of Venice website, contains a list of every association that has been run in the city, whether or not they are still active. The dataset started on October 10th, 1992, and has been kept up to date ever since. Importantly, if an association became inactive or stopped, the date of disbandment is listed. From this we can achieve a very accurate understanding of which associations are running in the city at this current time.

The data points we are interested in from the scraped data is where each association is based in the city, and what the association is focused on. Below. Figure 11 displays the most important findings from this data. The chart displays that nearly half of the current associations in the historic center of Venice are based on supporting city culture. This is a large amount and shows the dedication the people of Venice have when it comes to promoting and preserving their culture. This also shows that there is a large local push to keep cultural and artistic events happening, something that COSMO can benefit from.

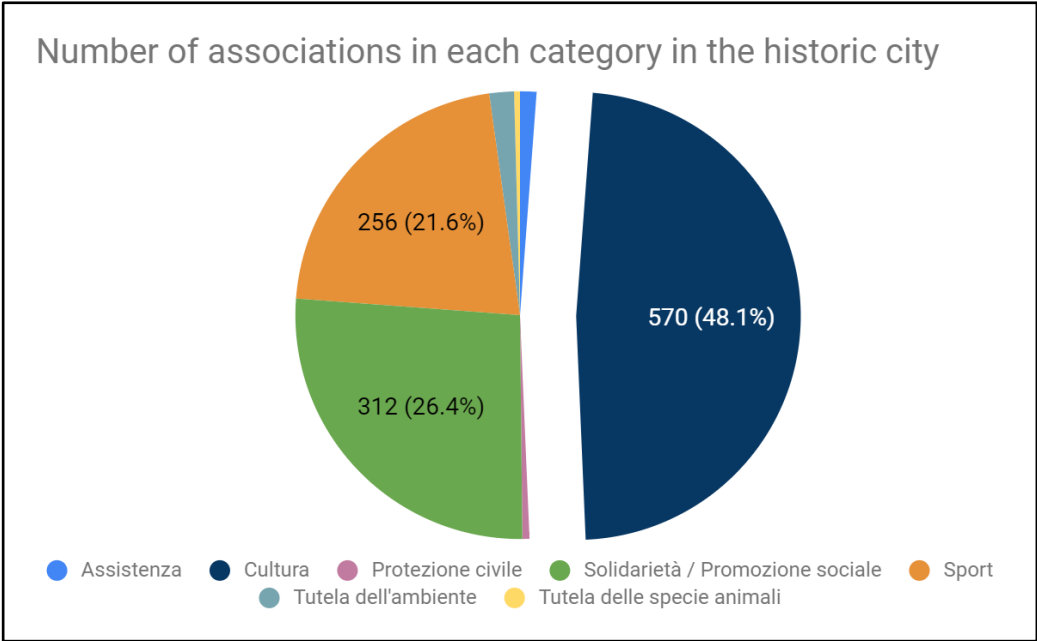


Figure 11: Total number of active associations in each category in the historic center of Venice.

Chapter V: Conclusions and Recommendations

COSMO aims to fulfill the artistic and cultural needs in Venice by providing a space that can reply to any request. For ease of analysis, categories have been created corresponding to the areas that the program caters to. These categories are as follows: music, installations, performances, cinema, and digital media. Analyzing what the program COSMO has been able to complete in the past and its current state, our team was able to determine aspects of the program that will propel COSMO to a successful future.

The H3 factory has ample space with a variety of uses that local artists can take advantage of. Although the historic city has a large number of artistic venues per capita, these facilities are specialized and do not offer the flexibility that the H3 factory provides. Whether a producer wishes to create visual art, music, film, or an installation, they will have the resources to do so. COSMO is the first program to introduce this type of model to Venice, Italy, therefore providing local producers with means of construction they have not had access to before.

Relating to musical endeavors, private recording space can be provided for the production of digital audio, as well as equipment, support, and management. Performance space is also available in an environment acoustically ideal for live performance of vocals, instrumentals, and more. For installations, COSMO can manage the storage of traveling installations, ensuring the safety and preservation of the works. The location is also able to support the setup and breakdown of traveling installations. Artists can choose to display these installations inside the apse of the H3 factory as well as other sections of the vast space, utilizing the venue as a temporary exhibition space. For performances, space can be provided for artists to display their works and host showings. These showings can be either public or private and aim to either display the works or auction them off to buyers. An auction such as the latter option may attract visitors to the venue that otherwise would not attend, as well as provide some extra funds if COSMO chooses to take a percentage of the sale price. Space for the production of films and movies is available as well. Sets can be constructed for the films, along with recording equipment, lighting, and other production necessities. Both indoor and outdoor space can be provided for film showings, along with seating and sound setups. Setup locations, internet access, technical support, and moderation for digital media broadcasting can be provided with access to equipment such as microphones, cameras, computers, and servers.

It must be noted that an art incubator space requires funds in order to stay open and provide for local artists. Employees must be paid for jobs such as set construction and maintenance. Additionally, necessary equipment must be purchased, maintained, and updated. The COSMO model is able to generate income in a variety of ways: A record label could be created to generate income through on-site recording studios and music promotion. Space can be rented out for exhibitions and installations, tickets can be sold to live performances and film showings, and fees can be applied to the storage and maintenance of travelling exhibitions.

There are many areas of art where it is possible to use the same location for both the production and the exhibition of works. The H3 factory, the headquarters for COSMO, is a space where artists can both produce and perform. This is mutually beneficial for both the program and the artists. The artists benefit by not needing to move production equipment or materials between locations which makes the process easier, and COSMO benefits from the increase in business when they provide two services as opposed to just one. Film and musical productions are ideal for this proposed method of collaborative endeavors. These two categories take advantage of the possibility for the program to host and support all steps of the production to exhibition process, further increasing profit and popularity. For example, if COSMO provides a space, set, and equipment for a film to be produced, it can then also provide a venue for the showing of the film. These collaborations with artists will not only promote the local producer, but also the community and the company.

Based on our team's results, we have concluded that there is opportunity for growth within the Venetian cultural sector. The Venice Biennale, being the most visited temporary exhibition in the country, works to draw in additional visitors to Venetian cultural venues which ultimately increases the value that tourists place on the artistic sector as a whole.

As discussed in the results section, the Venice Biennale attracts heightened numbers of visitors to the historic city. Our team recommends that COSMO hosts more events during the months of April through November, and it is likely to result in a higher number of attendees due to the influx of tourists in Venice when the Biennale is occurring. Tourists who come for the Biennale will be available to attend other exhibits during their visit as well, leading us to believe that during these months there will be more people in the historic city looking for art, thus boosting the number of visitors willing to attend COSMO's events

COSMO is an encouraging model that so far has proven its viability in the Venetian

cultural economy. The program has the capability to go in several directions in the future, but we emphasize the need for COSMO to support the local economy. To conclude, our data has proven the sustainability of the model.

Bibliography

- About Us*. (n.d.). Creative Capital. Retrieved September 27, 2021, from <https://creative-capital.org/about-us/>
- Artist-In-Residence Program*. (n.d.). Retrieved September 15, 2021, from <https://ofa.fas.harvard.edu/ceramics/artist-residence-program>
- Artist-in-Residence Program | Worcester Center for Crafts*. (n.d.). Worcester Craft Center. Retrieved September 15, 2021, from <https://www.worcestercraftcenter.org/artist-in-residence-program>
- Arts & the Economy: Using Arts and Culture to Stimulate State Economic Development*. (2019, May 15). Americans for the Arts. <https://www.americansforthearts.org/node/100916>
- Buehler, C. (2020, April 21). *What Basic Equipment is Needed for a Recording Studio?* IPR. <https://www.ipr.edu/blogs/audio-production/what-basic-equipment-is-needed-for-a-recording-studio/>
- Cetină, I., & Bădin, A. L. (2019). Creative and cultural industries in Europe – case study of the performing arts in Romania. *Proceedings of the International Conference on Business Excellence*, 13(1), 216–226. <https://doi.org/10.2478/picbe-2019-0020>
- Churches and Basilicas of Venice | Venice-Welcome.com*. (n.d.). Retrieved September 15, 2021, from https://www.venicewelcome.com/info/churches_of_venice/
- COSMO – SerendPT*. (n.d.). Retrieved September 14, 2021, from <https://serendptdev.veniceprojectcenter.org/cosmo/>
- Cristiano, S., & Gonella, F. (2020). ‘Kill Venice’: A systems thinking conceptualisation of urban life, economy, and resilience in tourist cities. *Humanities and Social Sciences Communications*, 7(1), 1–13. <https://doi.org/10.1057/s41599-020-00640-6>
- During Economic Highs and Lows, the Arts Are Key Segment of U.S. Economy*. (n.d.). Retrieved September 26, 2021, from <https://www.arts.gov/about/news/2020/during-economic-highs-and-lows-arts-are-key-segment-us-economy>
- Eventi a Venezia nel 2021 | Rimani Aggiornato con Evenice.it*. (n.d.). Retrieved December 3, 2021, from <https://evenice.it/>
- Feil, D. K. (1998). How Venetians Think About Carnival and History. *The Australian Journal of Anthropology*, 9(2), 141–162. <https://doi.org/10.1111/j.1835-9310.1998.tb00205.x>
- Fiorin, F. (2019). Remembering Venice: Cultural Issues for Heritage Survival. *Università delhi Studi di Siena*.

- Flores, J. I. A., Pérez, M. J. S., & Blanco, V. M. F. (2010a). El Marketing de la cultura y las artes: Una evolución. *Revista Nacional de Administración*, 1(1), 23–36.
- Gadwa, A., Markusen, A., & Walton, N. (n.d.). *How Artist Space Matters: Impacts and Insights from Three Case Studies drawn from Artspace Project's Earliest Developments*. 123.
- History of Opera in Venice. (n.d.). *Musica Palazzo*. Retrieved September 15, 2021, from <https://www.musicapalazzo.com/en/history-of-opera-in-venice/>
- Imam, J. (2021). *Visitors return to Venice - but at what cost?* The Art Newspaper. <https://www.theartnewspaper.com/2021/06/28/visitors-return-to-venicebut-at-what-cost>
- Jackson, N., & Angliss, K. (2017). *A Practical Guide to Event Promotion*. Routledge. <https://doi.org/10.4324/9781315690285>
- Kinsella, E. (2019, March 8). *A New Study Says the Arts Contribute More to the US Economy Than Agriculture. Here Are Five Other Takeaways From the Report*. Artnet News. <https://news.artnet.com/art-world/nea-arts-economic-study-1484587>
- Klamer, A. (2016). The value-based approach to cultural economics. *Journal of Cultural Economics*, 40(4), 365–373. <https://doi.org/10.1007/s10824-016-9283-8>
- Lankford, E. L., & Scheffer, K. A. (2004). Review of *On Knowing: Art and Visual Culture* [Review of *Review of On Knowing: Art and Visual Culture*, by P. Duncum & T. Bracey]. *Studies in Art Education*, 45(3), 274–279.
- Major Festivals in Italy. (2020, April 10). *Follow Our Footprints*. <https://followourfootprints.com/major-festivals-in-italy/>
- Snazzy Maps—Free Styles for Google Maps*. (n.d.). Snazzy Maps. Retrieved September 24, 2021, from <http://snazzymaps.com>
- Stach, C. (2011). Life in Modern Venice: The Effects on the Venetian Middle Class. *Wake Forest University Graduate School of Arts and Sciences*, 30.
- Stokrocki, M. (2009). Unraveling a Meaningful Mentor Relationship: A Visual Culture Dialogue Between an Art Education Professor and Her Former Student. *Visual Arts Research*, 35(2), 137–147.
- Mentoring. A literature review*. (2020, June 2). Semann and Slattery. <https://semannslattery.com/mentoring-a-literature-review/>
- Mobility Funding Guide to Italy*. (n.d.). On the Move. Retrieved September 27, 2021, from <https://on-the-move.org/resources/funding/mobility-funding-guide-italy>

- Moretti, A., & Zirpoli, F. (2016). A Dynamic Theory of Network Failure: The Case of the Venice Film Festival and the Local Hospitality System. *Organization Studies*, 37(5), 607.
- Organization*. (2017, April 24). La Biennale Di Venezia. <https://www.labiennale.org/en/organization>
- Resources*. (n.d.). Artist Relief. Retrieved September 27, 2021, from <https://www.artistrelief.org/resources>
- Russeth, A., & Russeth, A. (2019, April 17). The Venice Biennale: Everything You Could Ever Want to Know. *ARTnews.Com*. <https://www.artnews.com/art-news/market/the-venice-biennale-everything-you-could-ever-want-to-know-12373/>
- Sam Noble Oklahoma Museum of Natural History | The Encyclopedia of Oklahoma History and Culture*. (n.d.). Retrieved September 15, 2021, from <https://www.okhistory.org/publications/enc/entry.php?entry=SA014>
- SerenDPT*. (n.d.). Retrieved September 12, 2021, from <http://serendpt.net/en>
- Teatro La Fenice*. (n.d.). Teatro La Fenice. Retrieved September 15, 2021, from <https://www.teatrolafenice.it/en/>
- The European Cultural Centre—The Gem of the Continent in Venice*. (n.d.). Widewalls. Retrieved September 15, 2021, from <https://www.widewalls.ch/magazine/european-cultural-centre-venice>
- The Goldoni Theatre*. (n.d.). Teatro Stabile del Veneto. Retrieved September 15, 2021, from <https://www.teatrostabileveneto.it/en/the-goldoni-theatre/>
- U.S. Participation at Venice and Cairo Biennale Exhibitions*. (n.d.). Benefits.Gov. Retrieved September 27, 2021, from <https://www.benefits.gov/benefit/5912>
- Venice Biennale (Italy)*. (n.d.). Biennial Foundation. Retrieved September 20, 2021, from <https://www.biennialfoundation.org/biennials/venice-biennale/>
- Venice Carnival 2022 | Dates, Parades, Events & More*. (n.d.). Retrieved September 14, 2021, from <https://www.carnivaland.net/venice-carnival/>
- Vickery, J. (2017, March). *Researching SPILLOVER in the creative and cultural industries* [Working or Discussion Paper]. European Research Partnership in Cultural and Creative Spillovers. <http://wrap.warwick.ac.uk/103941/>
- Ward, K. (2020). *Researching the City: A Guide for Students* (2nd ed.). SAGE Publications Ltd.

Appendices

Appendix A: Touristic flow

Venice, Italy is one of the most popular tourist destinations of all of the Italian cities. In 2019, Venice recorded approximately 5.5 million tourist arrivals, with the United States being the leading international tourist market for Venice. However, in 2020 the overall tourist arrivals declined to roughly 1.34 million; this decrease can be attributed to the coronavirus (COVID-19) pandemic, and therefore does not imply that the tourism industry is losing popularity (Statista Research Department, 2021). This lack of tourism has left Venetian residents with much more time on their hands, however, it is at the price of money in their pockets.

Tourism is the root of wealth in Venice; the city would be unable to sustain itself without the millions of tourists who visit Venice per year, since the residents totaling less than 55,000 would not be able to manage the city's economy on their own. The job market mainly revolves around tourism, leading to occupations in other sectors to be nearly impossible to find. This causes residents who do not want to work within tourism to turn towards work within the Venice Biennale, since it is better than serving pizza or being a street vendor for tourists (Piovesan, 2021).

Venice is known for its year-round events which feature film, art, theatre, architecture, music, and dance. The major festivals include the Venice Biennale, Venice Film Festival, Carnevale, and Festa della Sensa. These events are globally famous, attracting massive numbers of tourists to the city for the occasions. Carnevale, in particular, brings over 3 million people to experience this two-week immersion into Venetian culture ("Major Festivals in Italy," 2020).

The 'Carnevale di Venezia' is an annual festival that is held in Venice, Italy, which is most famously known for the elaborate masks worn. Venetians view this Christian Carnaval as a link to their historical past, celebrated for the two weeks before Ash Wednesday ((Feil, 1998); Venice Carnival, n.d.). However, the overwhelming number of tourists have caused the authenticity of masks worn for this cultural festival to gradually decline. There are numerous vendors throughout the streets of Venice, especially around typical tourist sectors, such as St. Mark's Square or the Rialto Bridge, who sell masks that are typically meant to be worn at the Carnevale. These masks are inauthentic and cheap, bearing a "made in China" stamp rather than

being made by Venetian locals (Stach, 2011). This causes tourists to buy foreign merchandise, rather than those made within the city.

Appendix B: Main cultural players

Within Venice, there are a significant number of cultural venues which are widely renowned. In addition to the Venice Biennale, there is also the Peggy Guggenheim Collection, The Querini Stampalia Museum, The Venezia Servizi Foundation, and the Venice Civic Museums Foundation.

The Peggy Guggenheim Collection is a museum hosting artwork from the personal collections of Peggy Guggenheim, Hannelore B., and Rudolph B. Schulhof. In addition, it hosts a sculpture garden, hosts temporary exhibitions, and provides a multitude of education programs, including school programs, accessibility programs, and an international internship program (*Guggenheim Museum in Venice*, n.d.).

The Querini Stampalia Museum, managed by the Querini Stampalia Foundation, is a house museum opened in 1869, aimed to preserve the house as a glimpse into the past. The museum's collections include ancient collections of decor and furnishings from the family house, as well as more modern installations acquired through purchases and donations. Some examples include works by Eugenio Da Venezia, Medardo Rosso, Guglielmo Ciardi, Alessandro Milesi, and other significant artists (*Museo Della Fondazione Querini Stampalia Di Venezia.*, n.d.).

The Venezia Servizi Foundation was created in 2014 with the purpose of identifying and preserving historical sites related to the 'artistic heritage' of the city. Since 2016, the foundation has reopened many historic buildings, including the *Scala Contarini del Bovolo*, the *Oratorio dei Crociferi*, The *Complesso dell'Ospedaletto*, the *Chiesa di Santa Maria della Presentazione*, and the *Complesso delle Penitenti*. These sites, which the foundation calls the Hidden Jewels of Venice, serve to bring the historic and classical cultural heritage of the city into the modern cultural landscape and economy ("Fondazione Venezia Servizi and the Hidden Jewels of Venice," n.d.).

Founded in 2008 by the City of Venice, the Venice Civic Museums Foundation, or MUVE, is an organization dedicated to the preservation and organization of eleven major museums in Venice. These include Doge's Palace, Museo Correr, Torre dell'Orologio, Ca' Rezzonico, Palazzo Mocenigo, Casa di Carlo Goldoni, Ca' Pesaro, Palazzo Fortuny, Museo del Vetro di Murano, Museo del Merletto di Burano, and the Natural History Museum of Venice Giancarlo Ligabue. Collectively, these museums host over seven-hundred thousand artworks. In

addition to preserving its vast collections, MUVE also hosts several cultural services, including research, education, and temporary exhibition production (“Introduction,” n.d.).

Appendix C: EVenice event and location data-scraping script

The script used to gather all the data from the EVenice website is hosted in two locations. The first location is on GitHub, at the address here: <https://github.com/dkeners/IQP-Webscripts>. The second location can be found in our team's files on drive, which can be accessed through our website, look for the "Code" dropdown. In either location the script can be found under the *EVenice-Scripts* folder. The file itself is named *initialScrape.py* and it is accompanied by two *.csv* files that contain the data from the last running of the script.

Running the script:

1. Download the *EVenice-Scripts* folder from either source
2. Make sure you have a python environment set up on your computer
3. Navigate to the folder and run *initialScrape.py* with your preferred editor of choice
4. The script will automatically detect how many locations and events are on EVenice and will run itself enough times to download them all
 - a. You will see messages for every 50 locations or events that it logs
5. Locations are downloaded first
 - a. When it has collected all of the data for the locations it will output a message saying "locations_utf-8.csv has been made in the folder and can now be accessed."
 - b. After this you can then edit and make changes to this file
6. Events are downloaded second, and take a while longer because there are more
 - a. When it has collected all of the data for the events it will output a message saying "events_utf-8.csv has been made in the folder and can now be accessed."
 - b. After this you can then edit and make changes to this file
7. The script will now be done running and have closed, leaving two new *.csv* files with up-to-date data in the folder
 - a. **If you can't find the files** it may be because the script was run from outside the folder, they do still exist and can be found by searching for them by name

Appendix D: Category conversion from EVenice tags

Table 2: Category conversion from EVenice tags to project tags

EVenice category	Logic of conversion	Project category
Art e Cultura	Very broad category that did not distinguish any specifics about the event	Individually sorted into categories listed below
By Night y Serate	Usually paired with another EVenice category	Night life
Musica del Vivo	For our project in particular, the differentiation between live and recorded music was not important	Music
Conferenza / Incontro	Conferences and meetings are not within the scope of our project	None
Laboratorio	A non direct translation relates this word to development for avant-garde experiences in an artistic and literary sense	Seminar
Mostre	This category is essential to our project as it related directly to the cultural sector	Exhibit
Mostra Temporanea	The differentiation between an exhibit and a temporary exhibit was not important for our project	Exhibit
Vita cittadina e Sport	City life and Sports were not necessary to our project, as they do not relate to the artistic sector of the city or economy.	None
Evento pubblico	We decided against categorizing into public vs. private.	None

Musica lirica y classica	This category is an essential part of our music category, and also contributes to the classical tag.	Music, Classical
Classica	Direct translation - important for the historical aspect of the cultural landscape.	Classical
Lirica	Indirect translation contributes to singing and operatic performance, which we classified as opera.	Opera
Teatro e Spettacolo	Direct translation - theatres are a main part of the show category.	Theatre, Show
Cinema / Proiezione	Cinema and productions are another essential part of the show category, especially the film festival.	Film, Show
Danze	Direct translation - contributes to the show category as an important kind of cultural performance.	Dance
Performance	Indirect translation - includes personal performances which are categorized under shows.	Show
Teatro	Direct translation.	Theatre
Visita Guidata	Guided tours, while they may be related to venues or events in the cultural sector, are not innately cultural or artistic.	None
Musei	Direct translation.	Museum
Sagra	Though cultural festivals do exist, events with this tag were not cultural festivals, and deemed irrelevant to the project.	None
Basket (basketball)	Similar to the sports tag, this	None

	was not deemed an important part of the artistic sector of the city or economy.	
Inaugurazione	Not applicable to our project.	None
Museo	Direct translation.	Museum
Party	Direct translation.	Party
Presentazione libro	Near direct translation. Was deemed relevant to our project as literature is an important cultural art form.	Book Opening
Voga	Similar to the sports tag, this was not deemed an important part of the artistic sector of the city or economy.	None
Calcio	Similar to the sports tag, this was not deemed an important part of the artistic sector of the city or economy.	None

Appendix E: Continued development and upkeep of the interactive map and database

The interactive map was itself built to be future proof, grabbing all new data on EVenice automatically. While it was built in a way such that no upkeep would be needed to make sure it is always up to date, that doesn't mean changes and improvements shouldn't be made to the system. For those looking to improve upon, or change, the website the source code is hosted in a GitHub repository in SerenDPT's workspace: <https://github.com/srdpt/IQP-COSMO-Website>. Edits can be made to these documents using GitHub's push and pull requests. To become a contributor and gain full access to the files reaching out to one of the people who manages the SerenDPT repository will have to be done, most likely through Fabio Carrera.

Because the site gets its data from an SQL database it is necessary to set up a test environment for development. To set up a local development environment for PHP and MySQL we recommend XAMPP which is free to download and use. After installing XAMPP, move the files you downloaded for the website into a folder named *IQP* in the *htdocs* folder in the XAMPP directory. From there you can start XAMPP and run the Apache and MySQL services. Navigating to <https://localhost/IQP/map.php> will now display a map hosted on the local server, but because there is no database yet no points will show up.

To set up the database for a test environment the following SQL command can be run to make the proper tables. These tables can then have data filled in through the server panel, or through the admin page on the website.

Table 3: The three main database tables, and the SQL commands used to create them.

Table	Create table code
authusers	<pre>CREATE TABLE `authusers` (`id` int(11) NOT NULL AUTO_INCREMENT, `username` varchar(64) NOT NULL, `password` varchar(256) NOT NULL, `assoc_email` varchar(256) NOT NULL, PRIMARY KEY (`id`)) ENGINE=InnoDB AUTO_INCREMENT=2 DEFAULT CHARSET=utf8mb4</pre>

Table	Create table code
eventdata	<pre>CREATE TABLE `eventdata` (`id` int(11) NOT NULL AUTO_INCREMENT, `evenice_id` int(11) NOT NULL, `evenice_location_id` varchar(20) NOT NULL, `event_name` varchar(150) NOT NULL, `location_name` varchar(255) NOT NULL, `event_description` mediumtext NOT NULL, `start_date` date NOT NULL, `start_time` time NOT NULL, `end_date` date NOT NULL, `end_time` time NOT NULL, PRIMARY KEY (`id`)) ENGINE=InnoDB AUTO_INCREMENT=7522 DEFAULT CHARSET=utf8mb4</pre>
locationdata	<pre>CREATE TABLE `locationdata` (`id` bigint(20) NOT NULL AUTO_INCREMENT, `evenice_id` varchar(11) NOT NULL, `name_IT` varchar(255) NOT NULL, `name_EN` varchar(255) NOT NULL, `description_IT` varchar(5000) NOT NULL, `description_EN` varchar(5000) NOT NULL, `organization_IT` varchar(200) NOT NULL, `organization_EN` varchar(200) NOT NULL, `address` varchar(255) NOT NULL, `lat` varchar(30) NOT NULL, `lon` varchar(30) NOT NULL, `type` varchar(20) NOT NULL, `evenice_type` varchar(300) NOT NULL, `website` varchar(300) NOT NULL,</pre>

Table	Create table code
	PRIMARY KEY (`id`), UNIQUE KEY `id` (`id`)) ENGINE=InnoDB AUTO_INCREMENT=1224 DEFAULT CHARSET=utf8mb4

Appendix F: City of Venice association data scraping

The script used to gather all the data from the Venice city website is hosted in two locations. The first location is on GitHub, at the address here: <https://github.com/dkeners/IQP-Webscripts>. The second location can be found in our team's files on drive, which can be accessed through our website, look for the "Code" dropdown. In either location the script can be found under the *City-Data-Scripts* folder. The file itself is named *scrape.py* and it is accompanied by a single *.csv* file that contains the data from the last running of the script.

Running the script:

1. Download the *City-Data-Scripts* folder from either source
2. Make sure you have a python environment set up on your computer
3. Navigate to the folder and run *scrape.py* with your preferred editor of choice
4. The script will automatically detect how many locations and events are on EVenice and will run itself enough times to download them all
 - a. You will see a message each time the data for 20 associations has been logged
 - b. When it has collected all of the data for each association it will output a message saying "associazioni_utf-8.csv has been made in the folder and can now be accessed."
 - c. After this you can then edit and make changes to this file
5. The script will now be done running and have closed, leaving a new *.csv* file with the up-to-date data in the folder
 - a. **If you can't find the files** it may be because the script was run from outside the folder, they do still exist and can be found by searching for them by name