

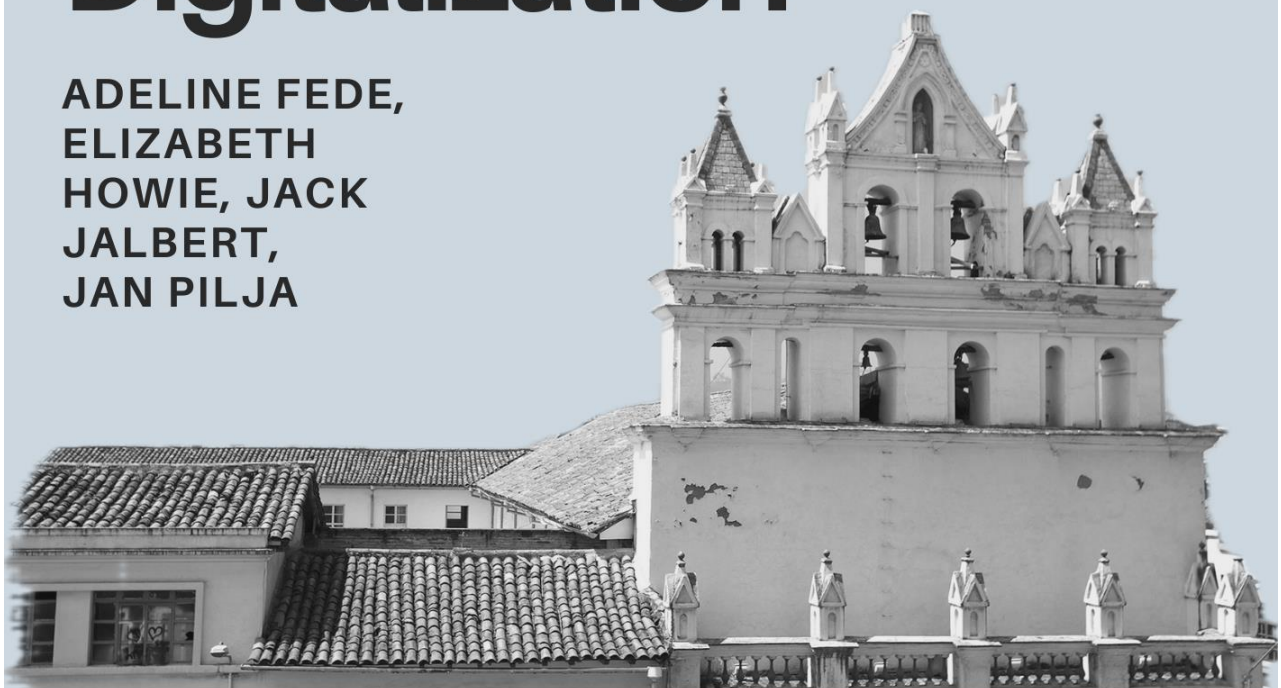
AN INTERACTIVE QUALIFYING PROJECT



WPI

Enhancing Attraction & Engagement of El Museo de las Conceptas Through Digitalization

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Enhancing User Experience, Attraction and Engagement of El Museo de las Conceptas Through Digitalization

An Interactive Qualifying Project Report submitted to the faculty of

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in partial fulfillment of the requirements for the degree of Bachelor of Science

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1. Abstract

Museums are a pillar in the preservation and safeguarding of culture and serve as an educational space to promote cultural understanding. Despite their significance, such institutions are met with critical challenges. Globally, museum attendance has experienced a significant decline, which has only been exacerbated by the pandemic. El Museo de las Conceptas, like many other institutions globally, is not immune to this trend. The repercussions of reduced attendance have brought to light shortcomings in the museum's engagement strategies. These deficiencies can be attributed to various factors including insufficient information regarding certain collections, limited activities to draw children's interest, and an underdeveloped online and media presence. This reveals the potential for growth, and in consideration of these faults, the following objectives were formed: develop an engaging tool towards a youthful audience, increase attraction and accessibility through virtual tools, and finally enhance information accessibility within the museum. Utilizing a comprehensive approach involving content analysis, archival research, ethnography, and semi-structured interviews, this study yielded valuable insights and outcomes. In employing a multimethod approach, several key insights emerged: the significance of social media, the impact of interactive approaches on youth engagement, and the role of information accessibility in shaping the visitor experience. These methods not only highlighted the challenges the museum currently faces but also pointed towards potential strategies for improvement. The development of bilingual pamphlets, a virtual tour, a social media strategy, and interactive youth activities were deemed key initiatives that address these challenges and contribute to a more dynamic and collaborative cultural space. The series of informative pamphlets stationed within each room detail the significance of the exhibited collections or individual pieces and eliminate the barrier to information accessibility within the museum. To develop youth engagement, an incentivized scavenger hunt was created that ensures the understanding and interaction of exhibits, alongside interactive questions strategically placed throughout the museum's rooms. Furthermore, to extend the museum's reach and accessibility online, a dynamic virtual tour has been established, catering to a broader audience beyond the physical confines of the museum walls. The implementation of these deliverables will result in a notable enhancement of the museum's overall engagement and impact.

2. Executive Summary

2.1.Introduction

Global museum attendance has steadily declined over the past two decades, with the COVID-19 pandemic exacerbating the situation. Ecuadorian museums saw a 61-80% attendance drop from 2019 to 2020, leading to job losses and funding cuts. El Museo de las Conceptas, like many other institutions, faced challenges in maintaining operations, preserving collections, and sustaining educational and cultural programs.

Though the museum overcame these challenges, they have created a lasting impact on attendance and visitor engagement. In response, the research question, “What are the most effective practices to boost attraction, engagement, and user-experience in the context of museums?”, was developed. To answer this question, the following objectives were formed:

1. Develop an engaging tool towards a youthful audience
2. Increase attraction and accessibility of the museum, virtually
3. Enhance the accessibility of information regarding the museum’s exhibits’

2.2. Background

El Museo de las Conceptas lives within El Monasterio de la Concepción de Cuenca. Since its opening in 1986, the Museum encompasses collections detailing the lives, work, and dowries of the nuns of the monastery, as well as the religious paintings and work of female artists. Due to the pandemic, the museum closed its doors in 2020, and was under threat of permanent closure as a lack of funding and decreased attendance caused significant profit losses. Through the support of La Universidad de Cuenca, the Museum was able to reopen in 2023 with their new exhibit, Ora et Labora, on display. Though this reopening was successful, the pandemic’s impact remains lasting, as revealed by declining visitor attendance and engagement. Youth engagement is widely known as the most important and difficult group to engage. Museums must adapt to the changing trends to engage visitors within their walls by leveraging the emerging experience economy. Interactive elements can increase engagement and understanding, while catering to all age groups. Opportunity also arises through the role of technology in daily life. Targeted advertising and the development of an online presence through social media and website design present as effective strategies to attract diverse audiences and drive engagement. Such digitalization encourages sustainability and cultural exchange, with museums increasingly utilizing tools like virtual tours to effectively engage audiences.

2.3. Methods

The goal of this project was to understand the current practices of engagement being employed in museums. These findings were used to aid El Museo de las Conceptas in increasing

attraction to the museum and engagement of the visitor at the museum through the most effective and viable practices. To complete this goal, a multimethod approach was employed. This approach involved archival research, content analysis, semi-structured interviews, and ethnography, and ensures the implementation of methodological triangulation. This approach minimizes bias through convergent validation and verifies your findings if singular concepts are revealed throughout these queries (Berg and Lune, 2017). To develop an initial understanding of modern museum practices and digitalization techniques, archival research was conducted. Through search engines and scholarly database review, pertinent information was recorded, organized, and derived meaning from. A focus on peer-reviewed and cited articles established the information's credibility. Content analysis of El Museo de las Conceptas' social media and current website, along with tourism websites such as Trip Advisor develop the Museum's brand identity and understand its public perception through reviews and rankings. To gain professional insight and guidance, semi-structured interviews were conducted with experts of tourism, culture, and museum practices. The use of semi-structured interviews allows structured questions to guide the interview, while leaving room for open discussion and the exploration of inquiries that might not have arisen if it wasn't for the chosen structure. The use of ethnography allowed for authentic observations and interactions that further solidify our understanding of museum interaction and practices. Ethnography was conducted at El Museo de las Conceptas, but also at museums of Cuenca and Massachusetts. Field notes, photography, and recordings were used to ensure the recording and accuracy of the data and to allow for future reflection and understanding.

2.4.Findings

The research revealed an opportunity to expand El Museo de las Conceptas' online presence and attract more visitors. Developing a website was explored but not feasible budget-wise. The focus shifted to increasing social media exposure and creating a virtual tour, more affordable solutions. Though not as robust as a website, these alternatives could still enhance the museum's digital footprint. When asked for feedback, experts responded enthusiastically about the proposed social media and virtual tour plan. While a website would have been optimal, these creative digital solutions can still greatly improve the museum's outreach to prospective visitors.

Interviews highlighted the need for more interactive, educational exhibits tailored to youth at El Museo de las Conceptas. Large renovations may not be feasible, but smaller enhancements could still improve the experience for children. Proposed ideas include a scavenger hunt and informational displays targeting ages 5-12 that could teach historical context interactively through

characters like “Angelita Aventura.” Affordable additions like these can stimulate an early passion for learning and culture. Enhancing interactivity for young visitors is a promising avenue to engage this key demographic.

The research also revealed inconsistencies in informational provision across the museum’s exhibits. Initial QR code ideas faced connectivity challenges. The proposed solution is bilingual pamphlets with visual aids outside each exhibit room. These would provide vital educational context for both Spanish and English readers. This practical, low-tech solution addresses the information deficit while circumventing internet constraints. By ensuring accessibility to information, patrons can better appreciate the museum’s offerings. The pamphlets present a feasible way to enhance the visitor experience.

2.5. Discussion & Deliverables

The key objective emerging from stakeholder feedback and expert interviews is to substantially improve overall visitor engagement and enrich the museum experience. Particularly, there is a need to better serve and connect with the critical youth and children demographic. Sponsors highlighted the importance of incorporating more interactive and hands-on elements into exhibits to help sustain youth engagement and learning. As the team explored best practices across peer institutions, it also became clear that actively collaborating with local schools and youth groups significantly broadens a museum’s community outreach and exposure. In response, the core proposed deliverables focus on enhancing interactivity, providing customization, and enabling virtual accessibility:

The completion of our project goals was achieved through the development of an interactive and physical activity for children (“Angelita Aventura’s Magical Circles”) along with an exhibit scavenger hunt and “Discover the Message” to motivate participation and re-focus children as they explore. Second, a visually compelling, and bilingual (English/Spanish) pamphlets was customized for each room to provide critical context and backstories that substantially deepen exhibit connections. Third, a social media strategy through Meta Business and branding guides was developed to attract and engage visitors on Facebook and Instagram more strategically. This entails a shift from posting graphic posters to a spotlight of compelling visuals of the museum to promote the art and their events. Lastly, an interactive virtual tour was designed to provide accessible previews of key exhibits and spaces. The goal is to inspire and convert more in-person visits. The tour features personalized videos from the museum to help audiences better connect with and understand the significance of the museum.

2.6. Conclusions & Recommendations

El Museo de las Conceptas puts on display a vital aspect of Cuenca's history while amplifying the life and impact of the monastery's nuns. With modern trends emphasizing technology, it is necessary for such a monumental institution to be up to date. Globally, museum attendance is declining, with COVID-19 exacerbating this trend and highlighting digitization's importance. In partnership with the sponsor, the primary objective was developing an online presence to increase attraction, engagement and accessibility of the museum and its art. Extensive research on digitization and engagement revealed feasible strategies, conducted through collaborating with experts in museums, culture and tourism. The most effective deliverables in terms of cost and aesthetics were bilingual pamphlets, a virtual tour, social media strategy implementation, and a youth interaction activity. These are critical to growing and retaining attendance.

Stakeholders unanimously agreed on the pamphlet stands to enhance the museum. Enabling uninitiated visitors to consume the museum's intricacies promises a profound shift in perception and engagement. These voices endorse accessible, bilingual information augmentation as an invaluable elevation of the museum's standing and impact. Future opportunities include enhancing social media and the website, infeasible presently due to time and budget constraints but impactful for outreach and engagement. The pamphlets should suffice unless taken home by visitors. The kids' activities and virtual tour are designed to withstand time but may warrant adjustments if collections change to maintain relevance.

3. Resumen Ejecutivo

3.1. Introducción

La asistencia mundial a los museos ha disminuido constantemente durante las últimas dos décadas, y la pandemia de COVID-19 ha exacerbado la situación. Los museos ecuatorianos experimentaron una caída en la asistencia del 61% al 80% entre 2019 y 2020, lo que provocó pérdidas de empleos y recortes de fondos. El Museo de las Conceptas, como muchas otras instituciones, enfrentó desafíos para mantener las operaciones, preservar las colecciones y sostener los programas educativos y culturales.

Aunque el museo superó estos desafíos, han creado un impacto duradero en la asistencia y la participación de los visitantes. En respuesta, se desarrolló la pregunta de investigación: “¿Cuáles son las prácticas más efectivas para impulsar la atracción, el compromiso y la experiencia del usuario en el contexto de los museos?”. Para responder a esta pregunta se plantearon los siguientes objetivos:

1. Desarrollar una herramienta atractiva para una audiencia juvenil.
2. Incrementar el atractivo y accesibilidad del museo, de forma virtual.
3. Mejorar la accesibilidad de la información sobre las exhibiciones del museo.

3.2.Fondo

El Museo de las Conceptas se encuentra dentro de El Monasterio de la Concepción de Cuenca. Desde su apertura en 1986, el Museo abarca colecciones que detallan la vida, el trabajo y la dote de las monjas del monasterio, así como las pinturas religiosas y el trabajo de artistas femeninas. Debido a la pandemia, el museo cerró sus puertas en 2020 y estuvo bajo amenaza de cierre permanente ya que la falta de financiación y la disminución de la asistencia provocaron importantes pérdidas de beneficios. Gracias al apoyo de La Universidad de Cuenca, el Museo pudo reabrir sus puertas en 2023 con su nueva exposición, Ora et Labora. Aunque esta reapertura fue exitosa, el impacto de la pandemia sigue siendo duradero, como lo revela la disminución de la asistencia y el compromiso de los visitantes. La participación de los jóvenes es ampliamente conocida como el grupo más importante y difícil de involucrar. Los museos deben adaptarse a las tendencias cambiantes para atraer a los visitantes dentro de sus muros aprovechando la economía de experiencias emergente. Los elementos interactivos pueden aumentar el compromiso y la comprensión, al mismo tiempo que atienden a todos los grupos de edad. Las oportunidades también surgen a través del papel de la tecnología en la vida diaria. La publicidad dirigida y el desarrollo de una presencia en línea a través de las redes sociales y el diseño de sitios web se presentan como estrategias efectivas para atraer audiencias diversas e impulsar la participación. Esta digitalización fomenta la sostenibilidad y el intercambio cultural, y los museos utilizan cada vez más herramientas como visitas virtuales para atraer al público de forma eficaz.

3.3. Métodos

El objetivo de este proyecto era comprender las prácticas actuales de participación que se emplean en los museos. Estos hallazgos se utilizaron para ayudar a El Museo de las Conceptas a aumentar la atracción hacia el museo y la participación del visitante en el museo a través de las prácticas más efectivas y viables. Para lograr este objetivo, se empleó un enfoque multimétodo.

Este enfoque implicó investigación de archivos, análisis de contenido, entrevistas semiestructuradas y etnografía, y garantiza la implementación de una triangulación metodológica. Este enfoque minimiza el sesgo a través de la validación convergente y verifica sus hallazgos si se revelan conceptos singulares a lo largo de estas consultas (Berg y Lune, 2017). Para desarrollar una comprensión inicial de las prácticas de los museos modernos y las técnicas de digitalización, se llevó a cabo una investigación en archivos. A través de motores de búsqueda y revisión de bases de datos académicas, se registró, organizó y obtuvo significado la información pertinente. Un enfoque en artículos citados y revisados por pares estableció la credibilidad de la información. El análisis de contenido de las redes sociales y el sitio web actual de El Museo de las Conceptas, junto con sitios web de turismo como Trip Advisor, desarrollan la identidad de marca del Museo y comprenden su percepción pública a través de reseñas y rankings. Para obtener información y orientación profesional, se realizaron entrevistas semiestructuradas con expertos en turismo, cultura y prácticas museísticas. El uso de entrevistas semiestructuradas permite que preguntas estructuradas guíen la entrevista, al tiempo que deja espacio para la discusión abierta y la exploración de preguntas que podrían no haber surgido si no fuera por la estructura elegida. El uso de la etnografía permitió observaciones e interacciones auténticas que solidifican aún más nuestra comprensión de la interacción y las prácticas de los museos. La etnografía se realizó en El Museo de las Conceptas, pero también en museos de Cuenca y Massachusetts. Se utilizaron notas de campo, fotografías y grabaciones para garantizar el registro y la precisión de los datos y permitir la reflexión y la comprensión futuras.

3.4.Recomendaciones

La investigación reveló una oportunidad para ampliar la presencia en línea de El Museo de las Conceptas y atraer más visitantes. Se exploró el desarrollo de un sitio web, pero no era viable desde el punto de vista presupuestario. La atención se centró en aumentar la exposición en las redes sociales y crear un recorrido virtual y soluciones más asequibles. Aunque no son tan sólidas como un sitio web, estas alternativas aún podrían mejorar la huella digital del museo. Cuando se les pidió su opinión, los expertos respondieron con entusiasmo sobre el plan de visita virtual y las redes sociales propuesto. Si bien un sitio web habría sido óptimo, estas soluciones digitales creativas aún pueden mejorar en gran medida el alcance del museo a los visitantes potenciales.

Las entrevistas resaltaron la necesidad de exhibiciones más interactivas y educativas adaptadas a los jóvenes en El Museo de las Conceptas. Es posible que las grandes renovaciones no sean factibles, pero mejoras más pequeñas aún podrían mejorar la experiencia de los niños.

Las ideas propuestas incluyen una búsqueda del tesoro y exhibiciones informativas dirigidas a edades de 5 a 12 años que podrían enseñar el contexto histórico de manera interactiva a través de personajes como "Angelita Aventura". Adiciones asequibles como estas pueden estimular una pasión temprana por el aprendizaje y la cultura. Mejorar la interactividad para los visitantes jóvenes es una vía prometedora para involucrar a este grupo demográfico clave.

La investigación también reveló inconsistencias en la provisión de información en las exhibiciones del museo. Las ideas iniciales de códigos QR enfrentaron desafíos de conectividad. La solución propuesta son folletos bilingües con ayudas visuales fuera de cada sala de exhibición. Estos proporcionarían un contexto educativo vital para los lectores tanto en español como en inglés. Esta solución práctica y de baja tecnología aborda el déficit de información y al mismo tiempo evita las limitaciones de Internet. Al garantizar el acceso a la información, los visitantes pueden apreciar mejor las ofertas del museo. Los folletos presentan una forma factible de mejorar la experiencia del visitante.

3.5. Discusión y Entregables

El objetivo clave que surge de los comentarios de las partes interesadas y de las entrevistas con expertos es mejorar sustancialmente la participación general de los visitantes y enriquecer la experiencia del museo. En particular, existe la necesidad de servir mejor y conectarse con el grupo demográfico crítico de jóvenes y niños. Los patrocinadores destacaron la importancia de incorporar elementos más interactivos y prácticos en las exhibiciones para ayudar a mantener la participación y el aprendizaje de los jóvenes. A medida que el equipo exploraba las mejores prácticas en instituciones pares, también quedó claro que colaborar activamente con escuelas locales y grupos de jóvenes amplía significativamente el alcance y la exposición comunitaria de un museo. En respuesta, los principales resultados propuestos se centran en mejorar la interactividad, proporcionar personalización y permitir la accesibilidad virtual: La consecución de los objetivos de nuestro proyecto se logró mediante el desarrollo de una actividad física e interactiva para niños ("Los círculos mágicos de Angelita Aventura") junto con una exhibición de búsqueda del tesoro y "Descubre el mensaje" para motivar la participación y reenfocar a los niños mientras exploran. . En segundo lugar, se personalizaron folletos

visualmente atractivos y bilingües (inglés/español) para cada sala para proporcionar un contexto crítico e historias de fondo que profundicen sustancialmente las conexiones de la exhibición. En tercer lugar, se desarrolló una estrategia de redes sociales a través de Meta Business y guías de marca para atraer e involucrar visitantes en Facebook e Instagram de manera más estratégica. Esto implica pasar de publicar carteles gráficos a destacar imágenes atractivas del museo para promover el arte y sus eventos. Por último, se diseñó un recorrido virtual interactivo para brindar vistas previas accesibles de exhibiciones y espacios clave. El objetivo es inspirar y convertir más visitas en persona. El recorrido presenta videos personalizados del museo para ayudar al público a conectarse mejor y comprender la importancia del museo.

3.6. Conclusiones y Recomendaciones

El Museo de las Conceptas muestra un aspecto vital de la historia de Cuenca al tiempo que amplifica la vida y el impacto de las monjas del monasterio. Dado que las tendencias modernas enfatizan la tecnología, es necesario que una institución tan monumental esté actualizada. A nivel mundial, la asistencia a los museos está disminuyendo, y la COVID-19 está exacerbando esta tendencia y destacando la importancia de la digitalización. En asociación con el patrocinador, el objetivo principal era desarrollar una presencia en línea para aumentar la atracción, el compromiso y la accesibilidad del museo y su arte. Una extensa investigación sobre digitalización y participación reveló estrategias factibles, realizadas mediante la colaboración con expertos en museos, cultura y turismo. Los entregables más efectivos en términos de costo y estética fueron folletos bilingües, un recorrido virtual, implementación de una estrategia de redes sociales y una actividad de interacción juvenil. Estos son fundamentales para aumentar y retener la asistencia.

Los interesados acordaron por unanimidad los expositores de folletos para mejorar el museo. Permitir que los visitantes no iniciados consuman las complejidades del museo promete

un cambio profundo en la percepción y el compromiso. Estas voces respaldan el aumento de información bilingüe y accesible como una elevación invaluable del prestigio y el impacto del museo. Las oportunidades futuras incluyen mejorar las redes sociales y el sitio web, algo que actualmente no es factible debido a limitaciones de tiempo y presupuesto, pero que tiene un gran impacto para la divulgación y la participación. Los folletos deberían ser suficientes a menos que los visitantes se los lleven a casa. Las actividades para niños y el recorrido virtual están diseñados para resistir el tiempo, pero pueden requerir ajustes si las colecciones cambian para mantener la relevancia.

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5. Authorship

Section	Author	Editor
Abstract	EH, AF	EH, AF
Executive Summary	ALL	ALL
Introduction	AF	AF, JJ
Background: El Museo de Las Conceptas	JJ	AF, JJ

Background: Engagement and Attendance	EH, JJ	AF, JJ
Background: Museum Digitalization & Smart Tourism	AF, JP	AF, JJ
Methods: Archival Research	EH, AF	EH, AF, JP
Methods: Content Analysis	AF	AF, JJ, JP
Methods: Semi-Structured Interviews	ALL	AF, JJ, JP
Methods: Ethnographies	AF	ALL
Findings: Information Accessibility	EH	EH, AF
Findings: Developing online presence (Social Media, Virtual Tour, Website Design)	AF, JP	AF, JJ, EH
Findings: Engaging the Youth (Interactivity and Educational, Scavenger Hunt)	JP, JJ	AF, JJ, EH
Discussion & Deliverables	ALL	ALL
Conclusion & Recommendations	ALL	EH
Appendices	ALL	ALL

6. Introduction

In the past twenty years, museums attendance globally has experienced a steady decline, with digitalization and economic trends emerging as speculated factors contributing to this decline (Sciences, 2017). This trend was exacerbated after the COVID-19 pandemic that closed the doors to all museums and led many into economic hardship. In 2020, all museums of Ecuador were closed, with these closures lasting 181-240 days (UNESCO, 2021). From 2019 to 2020, the museums of Ecuador experienced a 61-80% decline in attendance. The museums as cultural and historical safeguards were under threat, and a primary challenge, as reported by museums in Ecuador, revolved around job losses and salary reductions. Despite many museums and

associations' attempts to restore general attendance, pre-pandemic attendance has been unattainable for many museums. Given the limited post-pandemic data for Ecuador, it's noteworthy that museums in the United States currently have an average attendance that is 71% of the levels achieved in 2019. (Wilkening, 2023). While these statistics may appear dismaying, it is reassuring to observe that individuals are returning to museums, even if not at the same rate as before. A similar tendency is observed at El Museo de Las Conceptas, where a decline in municipal funding and tourism has significantly altered the attendance of the museum. El Museo de las Conceptas serves as the sponsor for this project, and collaboratively, this group aspires to preserve its rich cultural heritage. Emphasizing the fundamental importance and the imperative need for supporting museums becomes crucial to ensure the continued appreciation of culture. Current attendance trends highlight the growing need for continuous improvement and innovation to be applied to the management of museums. Considering these challenges facing museums globally, and locally at El Museo de Las Conceptas, our overarching project objectives are as follows:

1. *Develop an engaging tool towards a youthful audience*
2. *Increase attraction and accessibility of the museum through digitalization*
3. *Enhance the accessibility of information about the museum exhibits bilingually*

7. Background

7.1.El Museo de las Conceptas

Though El Museo de las Conceptas opened its doors in 1986, its history dates to the 16th century. The Spanish settlement of Cuenca was founded in 1557, and 40 years later, on June 13th of 1599, El Monasterio de la Concepción de Cuenca was formed. Financial support came from citizens' alms and priests, but full funding required Viceroy Luis de Velasco's assistance. Leonor Ordóñez, widow of the Cabildo treasurer, donated her houses valued at 4,250 pesos, on the condition that her daughters be accepted into the cloister. The first nuns to live in the monastery were Leonor Ordóñez, Geronima de Amendaña and Ángela de Amendaña. At first, the nuns lived in relative poverty, though as the years the monastery was open increased, so did the donations and endowments benefit the monastery. The artifacts and details that are now on display at el Museo de Las Conceptas, were a contribution of these dowries and the patrons' donations. After almost 400 years, these pieces of art were put on display for the opening of El Museo de las Conceptas. The museum fosters an appreciation for the life, work, and dowries of the nuns. Today

the monastery still exists in the same facility as the museum, the nuns live in seclusion on the premises of the museum. (Dávila, 2005).

In 1982, The Ministry of Culture and Heritage allocated \$8 million (USD) towards projects that promote and include cultural identity and heritage. However, since 2013 in Cuenca, municipality cooperation became a necessary ally to Museo de las Conceptas as they agreed to make annual payments of \$50,000 (USD). This number began to drop, to \$30,000 (USD) a few years later, and in 2020 it dropped to \$20,000 (USD). The director of Museo de las Conceptas, Mónica Muñoz Carrasco, stated in an interview that the \$20,000 is not even a third of the general budget required for the field. The museum contacted the University of Cuenca and the Chamber of Industries for more funding, but with their help, they require the original \$50,000 pledged by the municipality sector of Cuenca. Due to economic hardship from a complete drop in ticket sales and decreased donations from the Municipality of Cuenca, el Museo de Las Conceptas was forced to close during 2020. 3 years later, in April of 2023, the museum reopened with a new exhibit; Ora et Labora. This exhibit details the work and lives of the nuns during the time of its founding. The reopening and development of Ora et Labora was made possible by the contributions of la Universidad de Cuenca. Together, la Universidad de Cuenca and El Museo de las Conceptas have formed a valuable association. Through the funding of the University, the Museum can remain open. Through the rich culture and art on display in the Museum, the University can provide research opportunities to its students.

The Museum of the Monasterio de las Conceptas has 24 rooms. The two floors convey two different stories, the first floor being about the nuns and their history and lives, and the second being about religious figures and stories. There are 8 rooms on the ground floor providing information about the convent, restoration, and the daily lives and schedules of the nuns. Photographs by Gustavo Landívar depict various activities. Two exhibition rooms added for the fourth centenary feature works by René Pulla and donations of nuns. The second floor includes an iconography room named Mariana, the infirmary chapel, and themed rooms highlighting convent life and hosting diverse cultural events. The former cloister cemetery now serves as the museum's auditorium for concerts, literary presentations, film series, and more. Throughout the museum, they have different rooms, sculptures, paintings, and figures. All the pieces and exhibitions of the museum are detailed in the current index, though it is not very easily accessible to the public. In terms of online presence, the museum has a Facebook page that details the events and news of the museum but lacks an easily accessible website. The museum's current website contains simplistic

characteristics and information about its general history. However, the museum staff no longer have access to editing the website, and the last website entry that details the museum events was posted on October 21st (“Sábados En Familia - Museo De Las Conceptas”).

There are many purposes of museums today, the following are only some examples: the preservation of culture and national heritage, cultural enrichment and engagement, preservation of identity, education, and research. The support of Cuencanans, tourists, and institutions is necessary to fulfill the needs of El Museo de las Conceptas to preserve the culture and heritage of not only the nuns of El Monisterio de las Conceptas, but the history of Cuenca.

7.2.Engagement and Attendance

The COVID-19 pandemic has had a profound impact on museums. The decline in museum attendance and engagement post-COVID can be attributed to several factors, with both short-term and long-term effects. Firstly, museums worldwide, including El Museo de las Conceptas, had to close their doors temporarily during and even after the pandemic. After reopening, restrictions on the number of visitors allowed inside at a given time as well as social distancing measures limited the overall ability of museums. This slow reopening process had lasting effects, both on attendance but also on engagement.

The levels of engagement at museums differ per age group. Adults are the most engaged, as they are the most educated and interested in displays and collections, while teenagers/young adults rank the lowest in engagement levels. The constant decline of this statistic over the past decades entails that there needs to be a change in the way museums attempt to engage the teenage/young adult audience, so the current young adults/teenagers will continue to be engaged through their adult years. A way to capture their attention and gain their attendance is through events at museums. A case study done in 2013 talks about the use of events at museums and how they improve both the attendance and engagement of the youthful audience. (Striepe, 2013) Social events held at the museum allow for teens/young adults to socialize with their peers/friends in the museum context. The article describes an event held at night at an art museum where over 1,000 teenagers attended wandered, wondered, discussed, and interacted with art and with each other. This was a massive pull for the museum and allowed for a much larger level of engagement with the youth. While 1,000 people is an exceptionally large gathering, even small events such as wine tasting nights, local musician nights, or local high school nights at a museum increase the engagement not only with the youth but also with the community. (Striepe, 2013)

El Museo de las Conceptas has held events both currently and in the past. Events such as Family Saturdays or artists coming in to show their displays of work actively engaged the community and more. Creating a set schedule for more events, targeting a wider range of audience will be beneficial to both the engagement and the attendance at the museum. Allowing people to come to the museum to enjoy themselves with their friends, while also viewing the beautiful art on display throughout all the exhibits and collections.

Creating engaging museum experiences is essential for cultural institutions, that the quality of content and dynamic interpretation are key drivers for repeat visitation (Falk, 2009; Pekarik et al., 2014). Interactive exhibits and technology-enhanced experiences have been shown to increase the time visitors spend in museums. However, it is vital to emphasize that technology should be used to facilitate meaningful engagement rather than for its own sake (Simon, 2010). Exhibits that integrate physical, intellectual, and emotional components play a pivotal role in providing satisfying user experiences and fostering lasting relationships with museums. Beyond technological enhancements, the focus should be on creating holistic and meaningful engagement through careful design. This user-centric approach aligns with the understanding that crafting impactful engagement requires a thorough comprehension of audiences' needs and motivations (Falk, 2009; Simon 2010).

7.3.Museum Exposure

In delving into the sponsor's background, it becomes clear that the museum is struggling with the two challenges of diminished tourism and limited attention. Addressing this predicament needs a strategic approach, one that hinges on strengthening the museum's visibility and deploying targeted advertisements in the vibrant city of Cuenca.

Confronting such issues becomes inherently more complex when dealing with smaller-scale locales, where the labor dedicated to public relations efforts is often meager or non-existent (Adams, 1977). In such contexts, the absence of a strong public relations team poses a unavoidable obstacle. The critical role of a public relations team for a museum extends beyond conventional expectations, encompassing tasks such as crafting compelling narratives for spreading through print and electronic media, orchestrating special events, hosting media personnel, generating publications, executing noteworthy events, and cultivating community relations (Adams, 1977). Drawing parallels with the promotional endeavors of malls, stores, and cinemas becomes imperative. Museums must adopt a similar initiative-taking stance in advertising, fostering an

environment that not only sustains but enhances their appeal, calling tourists to explore the rich tapestry of exhibits and experiences they have to offer. Museums need to emulate the promotional strategies employed by commercial entities to ensure a steady flow of visitors and maintain a thriving presence in the cultural landscape.

Advertising plays a huge role in any business or company that wants to succeed. It is the best way for people to be exposed to a business/product which in turn will get people to interact with it. Without advertisements, so many companies and products would go completely unseen by the public and never succeed. This applies to so many things including museums. The visual aspect of advertising allows for more compelling material for the exhibits in the museum (Fleckner & Franz, 2018). Seeing a visual representation of what is being advertised or promoted is a successful way to get the public interested in what is being offered and makes them more likely to buy or attend what is being shown. Advertisements function as a nearly universally comprehensible language, fostering a connection and sparking initial interest among diverse audiences visiting the museum from across the country and the world (Fleckner & Franz, 2018).

Exposure and engagement are critical elements in effective website design and usability. Exposure refers to factors that draw users to a website or facilitate awareness, while engagement relates to elements that motivate continued interaction once on the site (Lee & Kozar, 2012; Zhang & Von Dran, 2000). Establishing a unique branding identity and clearly stating the website's purpose help increase visibility and drive traffic. Additionally, optimization for search engines through strategic keywords and tags can help improve discovery. Outreach via social media and partnerships extends reach to new audiences (Duggan et al., 2015). When looking at engagement, quality content that is current, useful, and relevant promotes repeat visits. Interactive features like forums and comments facilitate active participation. Website functions are not the only thing that increases engagement, an aesthetically pleasing visual design can also boost time spent on the site (Lindgaard et al., 2006; Tractinsky et al., 2000), and intuitive navigation allows users to easily access desired content. Key exposure factors include solidifying a unique identity, optimizing for search, leveraging social media, and targeted advertising. For engagement, relevant content, interactivity, visual appeal, and easy navigation appear most impactful. Carefully addressing both exposure and engagement elements can help designers enhance awareness of and interaction on a website.

In past years social media has taken over the internet and has completely changed how people use the internet and see advertisements. There has been a huge decline in people seeing

advertisements from flyers and newspapers, with the surge of technology the most effective advertisements are being put on various social media applications. In recent years, there has been a focus on how social media can help nonprofit organizations connect with various people interested in their work (Lazzeretti, Sartori, & Innocenti, 2015). Businesses and companies in the cultural sector, including museums, have given little attention to the use of advertisements through social media. This follows suit with el Museo de las Conceptas due to there only being a Facebook page as well as an Instagram, on top of that there is extraordinarily little engagement on either. The Museum of Natural History in this study began utilizing social media, and their active social media engagement has contributed to a significant increase in attendance (Lazzeretti, Sartori, & Innocenti, 2015). There are examples of museums that have adopted social media means of advertising and it has translated to better attendance for the museum overall. There have been studies done with museums and social media, seeing what kinds of posts through social media receive the most engagement. From this study, one can see that posts regarding agendas get exceptionally low engagement while posts about collections do much getting online in general (Arnaboldi & Lema, 2021).

7.4. Museum Digitization & Smart Tourism

The number of internet users has grown since 2005, as shown in Figure 1, with current statistics recording 5.35 billion internet users across the world, with 5.04 billions of these users being social media users (Statista, 2024).

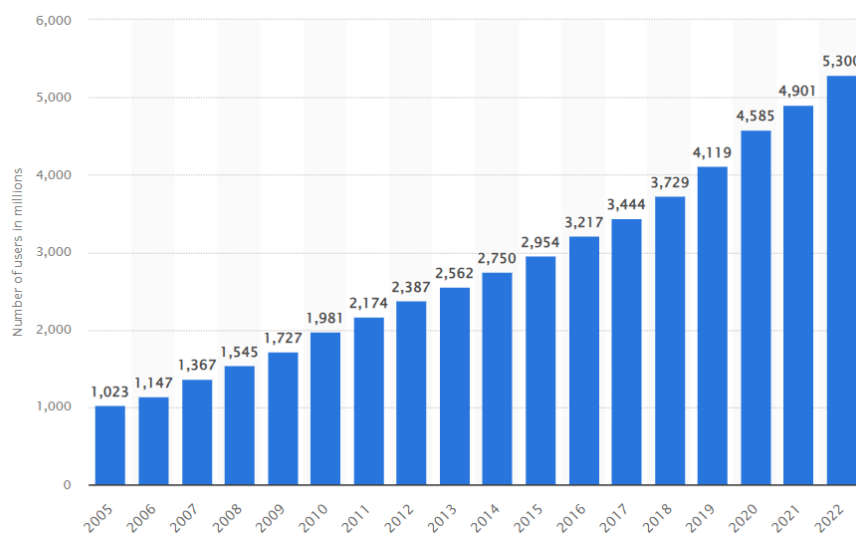


Figure 1 Internet users in millions from 2005 to 2022 (Statista, 2024)

This exponential trend of internet users highlights the impact technology has on daily life and the way people think and communicate effectively. Access of information has become a social norm and has become an expectation to almost all businesses and industries. In recent years, the importance of technology has grown significantly in the tourism industry due to modern trends and the impact of the COVID-19 pandemic. Such technology allows for growth of sustainability, economic development, and cultural communication (Jiang and Phoong, 2022). The importance of digitalization applies to all aspects of the tourism industry, including museums, as the sustainability of museums is becoming reliant on their digital capabilities (Z. A. Ahmed et al., 2020). Such dependence makes it important for museums to apply innovative technologies that allow for the museum's collections and pieces to be displayed and accessed at anytime from anywhere. Through digitalization, the accessibility of the museum is increased, while the museum, its art and its history are also preserved and promoted. In regards to attendance and user experience in museums, the emergence of digitization and the internet introduces different dimensions. Digitalization can be implemented through many methods such as a digital collection, an app or website, online channels, online museums etc. (Z. A. Ahmed et al., 2020). Museums are confronted with the challenge of balancing increased access to digital collections with the necessity to exert control over them (Bertacchini, 2013). The arrival of models such as online display, proprietary licensing, open licensing, and user-generated art images reflects the responses of museums to evolving user behavior and technological advancements which can pose as an opportunity as well as a risk towards online access. Museums must navigate the challenges and opportunities posed by the digital revolution to ensure they not only attract but also engage and retain visitors effectively. This involves a balance of carefully designing exhibits, incorporating technology thoughtfully, and supporting a deep understanding of audience needs (Falk, 2009; Simon 2010; Bertacchini, 2013). Such digital revolution and the continuously evolving uses of technology has led to the combination of digitalization and tourism to form smart tourism.

Smart tourism is defined as the collection of “data derived from physical infrastructure, social connections, government/organizational sources and human bodies/minds in combination with the use of advanced technologies to transform that data into on-site experiences and business value-propositions with a clear focus on efficiency, sustainability, and experience enrichment” (Kontogianni, A. et al, 2024). This new concept opens more doors presented by digitalization, as it is not simply the use of technological advancements, but it considers the potential for

interconnection and synchronization of these technological advancements to benefit tourism (Gretzel U. et al., 2015). Smart tourism is usually applied through artificial intelligence, virtual reality, cloud computing, the Internet of Things (IoT), and 5G mobile communications. Each option has a good side and a bad side. Choosing how to implement smart tourism depends on the demands of the visitor and its feasibility for the business.

The virtual tools most used by museums include virtual museums, virtual tours, and virtual reality. With an abundance of digital tools to enhance accessibility and attraction, virtual tours have become an increasingly popular choice. Virtual tours hold potential as pedagogical tools, providing access to artifacts without risk and enabling visits unconstrained by geography (Pescarin, 2014). Curators have to consider few things: innovativeness, interactivity, and user experience, when integrating digital elements to better enhance visitors ability to understand and overall engagement with cultural heritage. The virtual tour aims to experiment with immersive 3D environments as a driver of accessibility enhancement and an opportunity to enhance the current experience of an in-person visit (Martins et al., 2022). Virtual tours allow anyone, anywhere to walk through the museum and its collections virtually, while also being able to access the history behind the art and the artist through interactive information elements. They can be made as immersive as needed and can include sound effects, narration, and text (Anita et al., 2021). The virtual tour is set apart from virtual collections because the user can be placed inside the museum and create a more real feeling that enhances the experience in terms of entertainment and learning. The development stages of the virtual tour are critical as the resolution and the degree of interactivity determine the engagement of the virtual visitor.

7.5.Culture and Education

Focusing on museum visitors' experiences and contextual learning in museums can help improve and expand the engagement within a museum. Comparing this to the Ladkin article below, which examines the use of collections for research and teaching at the Museum of Texas Tech University. The approach of this article is theoretical, focusing on models like the Interactive Experience Model and Contextual Model of Learning (Chang, 2006). It takes a broad look at museum visitors and learning across a multitude of museums. It reviews empirical studies and models related to museum visitors and learns through museum showings. This article suggests ways for museums to improve visitor experiences based on visitors' characteristics and learning processes. Ultimately, to make museums more accessible, staff must deeply understand visitors'

needs and expectations to create inclusive environments and experiences that actively engage broader audiences beyond just tourists. (Chang, 2006) The museum must focus on responding to public needs rather than just telling the public what curators think they should know. By becoming better listeners, museums can communicate more effectively with visitors to provide experiences that are memorable and satisfying, leading to increased learning and participation. (Chang, 2006)

As stated above, the article, “The use of collections in research and teaching at the Museum of Texas Tech University,” examines an applied case study observing how different collections and showings are utilized for research and teaching. It gives specific examples of research and teaching activities used at the Museum at Texas Tech University while also demonstrating the value of museum collections for supporting interdisciplinary research. To make the museum more accessible to tourists, a wider range of interpretive offerings and presentation approaches could allow visitors to determine what information is most meaningful for their learning. (Ladkin, N., Johnson, E., Baker, R.J., & Chatterjee, S., 2010)

Furthermore, access to information in museums is critical to education and to portraying various cultures depending on the museum's location. In the 2008 revision of the constitution of Ecuador, section four focuses on the culture and science sector of Ecuador. Article 21 states, *“Persons have the right to build and uphold their own cultural identity, to decide their belonging to one or various cultural communities, and to express these choices; the right to aesthetic freedom; the right to learn about the historical past of their cultures and to gain access to their cultural heritage; to disseminate their own cultural expressions and to have access to diverse cultural expressions. Culture cannot be used as an excuse when infringing rights recognized in the Constitution.”*] (The Constitution of Ecuador, section 4; article 21). This article in the constitution of Ecuador emphasizes the rights of individuals to build and maintain their cultural identity, express their cultural choices, and have access to their diverse cultures – which are accessed through museums such as El Museo de las Conceptas. This right is considered when creating the engagement tool, making museum collections accessible to all who visit.

Section 5 of the constitution, which is titled *Education*, holds article 26 which states, *“Education is a right of persons throughout their lives and an unavoidable and mandatory duty of the State. It constitutes a priority area for public policymaking and state investment, the guarantee of equality and social inclusion and the indispensable condition for the good way of living. Persons, families and society have the right and responsibility to participate in education.”* (The Constitution of Ecuador, article 5; article 26) This is especially important, as *“it is the right of*

every person and community to interact among cultures and to participate in a society that learns. The State shall promote intercultural dialogue in all of its many dimensions.” (The Constitution of Ecuador, section 5; Article 28).

The demographic data on Ecuador shows a diverse makeup of ethnic, racial, and religious groups that form the cultural fabric of the country. This ties directly into the constitutional rights outlined around upholding cultural identity and accessing cultural heritage. Furthermore, the language data shows the importance of making the interactive engagement tool accessible to the 93% Spanish-speaking population, while still considering smaller native language groups. Overall, the demographic details allow for the crafting of an engagement tool aligned with the spirit of their constitutional belief.

8. Methods

The preliminary goals of this project were to enhance the visitor experience, increase accessibility, and sustain the cultural heritage of El Museo de las Conceptas. To achieve these goals, a multimethod approach was employed to investigate their effectiveness and implementation with a focus on the museum, the art, the artists, and the visitor. This approach involved the completion of semi-structured interviews, ethnography, archival research, and content analysis. This multimethod approach ensured the implementation of methodological triangulation, minimizing bias and enhancing the validity of the findings through convergent validation. Using multiple methodologies for data-collection validates findings if singular concepts are revealed throughout these queries (Berg and Lune, 2017).

8.1. Archival Research

Archival research is crucial to create a knowledge database prior to using further methodologies. This methodology encompasses the use of search engines and key words to discover and synthesize information. These search engines include the WPI Gordon Library, Google, Google Scholar, Research Gate and Springer. This mix of both scholarly and general search engines allows the discovery of academic, news, and opinion articles to gain multiple perspectives on the Museum, general practices, strategies, and history. The credibility of each source was established through an analysis of the articles published date, authority, relevance, citations, and peer-reviewed status. This criterion was applied to both scholarly and non-scholarly sources to maintain a consistent standard of assessing the credibility of sources, though

these articles were not used to draw any conclusions. Instead, this information established a broader context of the Museum and its current affairs.

In such search engines some of the following topics and key words were searched: El Museo de las Conceptas, Social Media Strategy, Advertising Museums, Interactive Museums, Information Accessibility in Museums, Engaging Youth in Museums, and Digitalization of Museums.

The articles identified through initial archival research were cross-referenced to further establish their credibility and reveal any unidentified biases. This technique involves the comparison of sources with others to verify the information provided and contextualize the information. Scrutinizing all sources is essential to responsible research and ensures that core knowledge consists of accurate information. Understanding the prevalence of misinformation and consistently assessing credibility upholds the integrity of this study and its findings.

Similarly, the analysis of cited sources throughout an article validates the interpretations formed by an author. Data can very easily be misconstrued, and consistently scrutinizing all sources is crucial to avoid forming interpretations based on potential misapprehensions. It is essential to derive information that originates from another article directly from that original source. This not only ensures the accuracy of the information but expands the number of sources used to conduct archival research, further revealing insights and perspectives that might not have been identified.

An additional strategy in strengthening credibility is the pursuit of peer-reviewed articles. This focus ensures the information derived from these articles is of high quality, as it is a practice used to confirm the reliability, validity and accuracy of the information published in scientific journals. Peer-review requires the evaluation and critique of a scholar's article by other experts in the field. This process assesses the study design, data analysis, interpretation, and strengths and weakness of the article (Steer & Ernst, 2021).

In principle, archival research represents an essential stage characterized by comprehensive investigation, critical analysis, and judgment. The employment of archival research synthesizes a fundamental start to the research process and facilitates the exploration of knowledge and understanding.

8.2. Content Analysis

To begin to comprehend the cultural context and public view of El Museo de las Conceptas, the museum's current index, social media, website, and tourism outlets such as

Google Maps and Trip Advisor were analyzed. The current index was used to create an understanding of the museum's current offerings, but also their current marketing and brand techniques.

8.2.1. Social Media

To analyze El Museo de las Conceptas' social media, metrics such as likes, follows, previews, clicks, and impressions were measured across Facebook and Instagram. Meaning was derived through these metrics by identifying trends between most active times of their following, post insights, and posting activity. The current brand identity being represented on each social media platform was also investigated through a look at the aesthetics of each post and its cohesiveness.

8.2.2. Current Website

The museum's current website was also analyzed to take a deeper look into the museum's brand identity and to understand the accessibility of information pertaining to the logistics of the museum. The content of each page on the website was reviewed to understand the current content being displayed. To gain the necessary skills for designing the museum's new website, research was done through the online education platform Coursera, along with research through online scholarly articles found through google search. Educational courses on website design allowed for hands on experience with responsive design techniques and different website creating platforms. Scholarly articles gave insight on what makes a website attractive, in terms of visual design and different engaging components. These resources were not the only assets that proved to be useful. Research on different museums websites and analyzing their layouts, navigation, visuals, and content strategies also provided valuable inspiration and examples of effective website design for museums. This comprehensive research provided a strong foundation for crafting an engaging, user-friendly, and visually appealing website that will represent the museum well online.

8.2.3. Tourism Outlets

Popular tourism outlets like Google Maps and TripAdvisor and El Museo de las Conceptas page on these sites were explored to understand the public outreach and opinion of the museum. Through reviews, the features of the museum that visitors enjoy the most are revealed,

while the rankings on lists such as “Things to do in Cuenca” reveal how the museum compares to other tourist attractions and its discoverability.

8.3. Semi-Structured Interviews

Semi-Structured Interviews played a key role in the collection of information. To minimize bias of this information, data triangulation techniques were implemented through the selection of various interviewees with varying cultures, locations, relationships to the museum and professions. The use of semi-structured interviews was selected in place of structured interviews to ensure maximized obtention of information. Though open-ended, “predetermined questions and special topics” were asked to ensure that the interviews ran smoothly, the information needed was obtained (Berg, 2017). This format created a starting point formed from the primary basic questions asked, while allowing further inquiries to be made based on responses of the interviewee and their comfort level. Before beginning the interview, the interviewees were asked to sign a consent form (Appendix 12.1). During all the interviews conducted in Cuenca, the interviewee was asked general questions regarding the museum to gauge their opinion of the museum and their familiarity with its art and events (Appendix 12.2). All interviews in Cuenca were conducted in Spanish, while those conducted in museums in Massachusetts were conducted in English. To ensure the comprehension of these interviews and that the interviewers were completely present in the conversations, the interviewees were asked to be recorded. The interview was then transcribed and translated into English. This transcription was then organized and separated by interview question and topic. Such files were then uploaded into NVivo, a qualitative data-analysis software. Using the Word Frequency tool, queries into separate topics and questions were completed. Stop words such as articles, prepositions, conjunctions, or pronouns like “the”, “to”, “be”, etc. were removed after the query was completed to improve the relevance and synthesize the relevant information. The query results were visualized using the Word Cloud and Cluster Analysis tools. Word Clouds visualize the summarized data using the number of times the word is recognized throughout the selected files. Words that appear larger and central in a word cloud appear more throughout the text. Cluster Analysis visualizes patterns by grouping sources or nodes that share similar words or attribute values. Cluster analysis diagrams provide a graphical representation of sources or nodes to make it easy to see similarities and differences. The proximity of each node reveals the similarity

between them, with nodes appearing close together more similar than those that are far apart (NVivo - About Cluster Analysis, n.d.).

8.3.1. Museum Directors and Staff in Cuenca

To understand the current state of El Museo de las Conceptas and surrounding museums of Cuenca, semi-structured interviews were conducted with Monserrath Tello Astudillo, the Director of El Museo Nuclear y Parque Arqueológico Pumapungo, Dr. Lucia Astudillo the Director of La Casa Museo María Astudillo Montesinos, and Carmen Lucia the Director of El Museo de las Culturas Aborígenes. Each interview was conducted in each interviewee's respective museum and in a quiet space. During these interviews, questions pertaining to their experience with digitalization, reopening, and advertising were asked. The structural questions asked in each interview can be found in Appendix 12.3.

8.3.1. Experts of Culture and Heritage

Professors of Cultural and Heritage studies of Cuenca were interviewed to gain perspective on the cultural context of the Museum. This cultural context plays an essential role in remaining culturally sensitive and conscious of how digitization impacts cultural perception and understanding. To develop this perspective, Dr. Ana Luz Borrero, a professor of History and Geography at the University of Cuenca and Dr. Macarena Montes Sánchez, a professor of Art History at the University of Cuenca were interviewed.

The interview with Dr. Ana Luz Borrero took place at El Museo de las Conceptas, while the interview with Dr. Macarena Montes Sanchez took place in her office at the University of Cuenca. The interview with Dr. Macarena Montes Sánchez centered around the history of the art, but also focused on her relationship with the museum, as she played a critical role in the reopening of the Museum. Questions centered on the historical context of the museum, and the academic significance of the museum can be found in Appendix 12.3.

8.3.2. Experts of Tourism

Semi-structured interviews were conducted with experts of tourism to understand the best practices to attract more visitors, while gauging their opinion on the current plan to implement a virtual tour and QR codes throughout the museum. Felipe Cardoso Vélez, the Communication Advisor of Tourism in Cuenca, and María Isabel Eljuri Jaramillo, a professor of Hospitality at the

University of Cuenca was asked series of questions that navigated their experience in the industry and the lessons that can be learned from them and implement in the project. These questions can be found in Appendix 12.4.

8.3.3. Museum Officials in Massachusetts

The semi-structured interviews in the United States were conducted to better understand how museums attempt to combat this omnipresent struggle of engagement. Along with using the interviews to better understand how museums combat engagement issues, they were also used to present the project's deliverables to experts and receive valuable opinions on the progress so far. From the interviews conducted with Vanessa Bumpus and Wendy Essery of the Worcester Historical Museum were selected to provide perspective from a successful local history museum with deep community ties. Laura Garrity-Arquitt of the Russian Icon Museum offered an international viewpoint as a curator focused on cultural and religious heritage. Elizabeth Reluga of the acclaimed Isabella Stewart Gardner Museum provided expertise from her work increasing youth access to a major art institution. The aim was to gather well-rounded advice on techniques to attract child and teen visitors that can be applied at El Museo de las Conceptas in Cuenca by strategically interviewing individuals serving different roles at established museums of varying size and type. This cross-section of respected professionals offered diverse and valuable recommendations to help shape the youth engagement efforts. For an outline of the questions asked in these interviews, please see Appendices 11.5., 11.6, and 11.7.

8.3.4. Patrons of El Museo de las Conceptas

While immersed in the rich environment of the museum, the group sought to engage in semi-structured interviews with its patrons and guests. These encounters were carefully planned to delve into their perspectives, thoughts, and experiences within the museum's walls. The questions asked during this interview detailed their perspective on the impact El Museo de las Conceptas has on the history of Cuenca and considerations that they believe are critical to consider in our project. The questions posed during these interactions are outlined in Appendix 12.2, aiming to uncover valuable insights.

Understanding the sentiments and opinions of these individuals in turn helps represent the very demographic that the museum endeavors to attract repeatedly. Their voices and opinions

serve as a way to see what the very people attending the museum want to see and experience there, which in turn making these changes will bring in returning guests.

8.4. Ethnography

Ethnographic research was employed to allow full immersion and understanding into museum practices, the culture of Cuenca, and the public perception of El Museo de las Conceptas. Ethnography places an emphasis on observation to provide a deeper understanding of behavior, interactions, and perceptions through first-hand accounts. This methodology provides unique and authentic information that might not have been uncovered through archival research or during an interview. Such an advantage also serves as a limitation due to observer bias. This specific bias occurs when the observers' predisposed beliefs or expectations influence their observation and how data is then interpreted. To limit the impact of observer bias on the collection of data, the use of multiple observers and consistent data recording practices such as photography and note taking was employed.

8.4.1. El Museo de las Conceptas

Ethnographic research was conducted at El Museo de las Conceptas to gain a perspective on the current experience of visiting the museum, but to also observe the interactions of the visitor with the museum, and the museum with the visitor. Such ethnography occurred to the attendance of art exhibitions, sponsor meetings, and the museum's specialized events. Various elements were carefully observed, including the demographics and behavior of museum visitors, the museum's presentation and offerings, its operational dynamics, and the overall sensory experience of navigating through the exhibits. Observations were recorded through field notes and through photography of any tangible observation, though no visitor was ever photographed. These observations were meticulously considered throughout a continuous ethnographic process and subsequently utilized to formulate actionable strategies for enhancing the visitor's experience.

8.4.2. Museums of Cuenca

To compare the current visitor experience and trends of El Museo de las Conceptas to surrounding museums, various museums across the Azuay province were visited and ethnographies were conducted. Photographs and field notes were taken to ensure that observation

recordings were consistent and comprehensive throughout each experience. The offerings of each museum, the behavior and interactions of the visitors, the harmony of the exhibits was the ultimate focus during each visit. These observations served as crucial input for discussions on potential enhancements and adjustments for El Museo de Las Conceptas. The information gathered from these ethnographies was compiled and categorized based on its pertinence to either logistical data or directional data. Logistical data such as museum attendance, number of exhibits, etc. to the logistical data of El Museo de las Conceptas. Directional data such as museum offerings were utilized to understand their potential implementation and whether certain visitor material or museum practice might benefit El Museo de Las Conceptas.

The research included visits to several notable museums, such Museo PumaPungo, La Casa Museo María Astudillo Montesinos, Museo Municipal de Arte Moderno, and El Museo de las Culturas Aborígenes. Each visit lasted approximately an hour, that time was used to meticulously record the ethnographic findings for further analysis and discussion.

8.4.3. Museums of Massachusetts

Visits were made to three esteemed museums in Massachusetts to gather insights on youth engagement strategies. The Russian Icon Museum, the Worcester Historical Museum, and the Isabella Stewart Gardner Museum were selected to represent small and large institutions, local history, and fine art collections, as well as traditional and innovative approaches in the museum world.

A professionally conducted interview was held with Laura Garrity-Arquitt of The Russian Icon Museum. Ms. Garrity-Arquitt answered all the questions thoughtfully and with respect to the constraints of the project. Ms. Garrity-Arquitt provided valuable insights from her extensive experience developing educational programs and exhibits to engage students and families. Her perspective as the Registrar, with a focus on cultural heritage, allowed for consideration of new directions to enhance the visitor experience at El Museo de las Conceptas.

The Worcester Historical Museum in Worcester, MA brings local history to life by using immersive exhibits to recreate scenes from the city's past. Interviews were conducted with Exhibit Coordinator Vanessa Bumpus and Library Archive Manager Wendy Essery, who were both extremely helpful. Ms. Bumpus offered thoughtful exhibit layout advice and engaging ideas for online initiatives. Meanwhile, Ms. Essery provided key recommendations on metadata standards and digitization best practices. Their receptiveness to an ongoing partnership and

enthusiasm for innovating museum offerings to better engage families and students provided an exciting new direction to explore with the project.

Finally, the Isabella Stewart Gardner Museum located in Boston, MA is renowned for its world-class art collection and intimate galleries that encourage awe and reflection. Elizabeth Reluga, Head of Collections Access, was a great help and showed true professionalism throughout the interview despite the change in the overall project objective. Ms. Reluga reiterated many times that she was not in the field of marketing, youth engagement, and exhibit coordination. Nevertheless, the questions that were presented to Ms. Reluga were altered to gain the general and professional opinion of a person who has worked for one of the most prestigious museums in the country. The information obtained proved to be valuable, and the interview itself was used to test out the preliminary draft of the deliverables. New information was not the objective of the interview yet was still contributed due to Ms. Reluga's yearning to assist with the project. As a result, a level of validation was acquired towards the deliverables, as well as new ideas and possible improvements towards certain objectives.

9. Findings

9.1. Increasing Attraction and User Experience Of The Museum

A common recommendation revealed through interviews, content analysis and archival research was the significance of an online presence. To improve on this for El Museo de las Conceptas, the development of a website was explored. Through research into website design and a discussion with the museum, the feasibility of developing a website was not apparent and was limited by the lack of a budget to buy and continually renew a custom domain name. Without the ability to obtain a unique, professional web address, it would be challenging to create an online home that substantially improves upon their existing site. Since an unused, inactive website would not be beneficial to the museum, the focus on developing a website was shifted to the search for a new platform that would have an increase in attraction for the museum similar to what the website would have achieved.

To identify an affordable digital alternative, content analysis of various museums of similar size was conducted and compared to the responses of completed semi-structured interviews and the strategies these museums have deemed successful. This question revealed the importance of social media, while discussions with Monica Muñoz Carrasco highlighted the potential impact of a virtual museum tour. These alternative creative solutions can enhance the museum's digital

footprint in a substantial way within current budget restraints. Various virtual tour options were explored through online queries and inquiries with museums who have developed virtual tours on their websites. With cost-effectiveness and user experience as main priorities, Lapentor emerged as the leading software. Lapentor is a free virtual tour software that has a simple, low code interface. The software is easy to use and provides many features that would be costly if provided by alternative software.

Semi-structured interviews with experts on the culture of Cuenca, museums and tourism confirmed the hypothesis that strengthening and refreshing the museum's digital presence will prove to be beneficial to increasing attraction to the museum. Before informing the interviewee of the plan for completing the project, questions regarding strategies that they have either viewed or implemented that were successful were asked. Out of 10 interviews in Cuenca, all mentioned the use of social media and website development for the promotion of attendance at the museum. These interviews also confirmed that the current path forward for developing such online presence through the development of a virtual tour, a focus on information accessibility and an interactive element that caters to children is an effective plan. The data of these interviews was compiled and analyzed using hierarchical data analysis to reveal any clusters that might not be seen through a basic probe. The data from this query can be seen in Appendix 12.8.1.

9.2. Youth Engagement

Museums employ various strategies to address the challenge of engaging younger audiences. The Worcester Historical Museum, for instance, emphasized the importance of interactive exhibits and hands-on activities tailored to youth. Walking through the galleries feels like stepping back in time as you encounter interactive displays, multimedia presentations, and hands-on activities. For example, children can role-play and operate an antique printing press. Along with interactive exhibits catered for children, the museum's extensive partnership with Worcester Public Schools allows for frequent field trips and visits all year round.

Similarly, the Isabella Stewart Gardner Museum highlighted the significance of educational programs and partnerships with schools to stimulate interest in art, culture, and history. These conversations provided insight into how collaborations with youth groups and schools can have widespread positive impacts on museum engagement with young people. Elizabeth Reluga, the head of collections access, provided important information about youth engagement. Collaborations with Boston Public Schools and Private Schools in the Greater Boston area allow

for elite youth engagement - school field trips/projects done on pieces in the museum engage the youth in the surrounding area. She also mentioned their “visual thinking strategies”, that they teach the children who come to visit. This is a strategy where children are encouraged to take what resonates with them from the impressive art pieces around the museum, stating that there is no correct answer as everyone interprets art in their own way. Continuing, students at major art schools live on site and work with one another on different pieces in the exhibits, bolstering the educational output of the museum. The use of museum resources to improve youth engagement and increase the educational benefits of a museum have had long lasting impacts on museum attraction and attendance. Elizabeth Reluga considers the programs benefiting the public as one of the root objectives of the museum, as engagement with the surrounding community is the most important objective for the staff. While light on accessibility features, they provide free admission to visitors under 18 and have robust partnerships with Boston Public Schools. In terms of youth engagement, they employ visual thinking strategies to make youth comfortable engaging with fine art.

Meanwhile, the Russian Icon Museum shared insights into utilizing technology, tools such as virtual tours and augmented reality experiences are used to captivate younger visitors. The museum also provides a minimalist layout against clean black walls, with spotlights illuminating the religious paintings and artifacts. Labels are unobtrusive, while QR codes and television offer multimedia content about certain icons and artists. Their student tours and children workshops aim to educate youth about Russian artistic and cultural heritage. Despite differing approaches from different museums, a common thread emerged: the recognition of the need for innovative and dynamic methods to connect with the next generation of museum goers. These insights taken from the interviews proved invaluable in shaping initiatives at El Museo de las Conceptas to foster greater engagement among children and teenagers in Cuenca.

Engaging younger audiences is a common challenge faced by museums worldwide, including El Museo de las Conceptas. Research indicates that taking an innovative approach tailored to children and teenagers can pay dividends. Tactics such as interactive exhibits, hands-on activities, and educational exhibit elements prove to successfully stimulate youth engagement at museums in the United States. Through creativity and vision, El Museo de las Conceptas has an opportunity to connect with the next generation of visitors and build lifelong museum enthusiasts. Interactive elements within the museum engage children in a fun, but educational way. By focusing energy on this demographic, El Museo de las Conceptas can invest in its future sustainability by

prioritizing initiatives for children and teenagers can spark a passion for learning and culture from an early age. A comprehensive youth engagement plan will not only increase attendance and engagement at El Museo de las Conceptas, but the benefits for Cuenca’s youth are immense.

9.3. Information Accessibility

Without clear explanations detailing the history and context of exhibited pieces visitors cannot fully grasp their significance. This issue significantly impacts the visitor experience within El Museo de las Conceptas. Upon thorough exploration, the group discovered glaring inconsistencies and inadequacies in the informational provision across the museum's various rooms. While some areas offer explanations solely in Spanish, others present abbreviated English translations that do not compare to their Spanish counterparts. This inconsistency can be seen in figures 2-4. Additionally, a few rooms have comprehensive explanations in English, Spanish, and even French, while regrettably, some remain devoid of any explanatory material. Correcting this deficiency is imperative, as it factors into what impacts museum attendance and visitor engagement.

This deficiency was emphasized during interviews conducted with a diverse array of



Figure 2 Example of Information Provided at Museum Exhibits, Only Spanish



Figure 3 Example of Information Provided at Museum Exhibits, Spanish, English, French

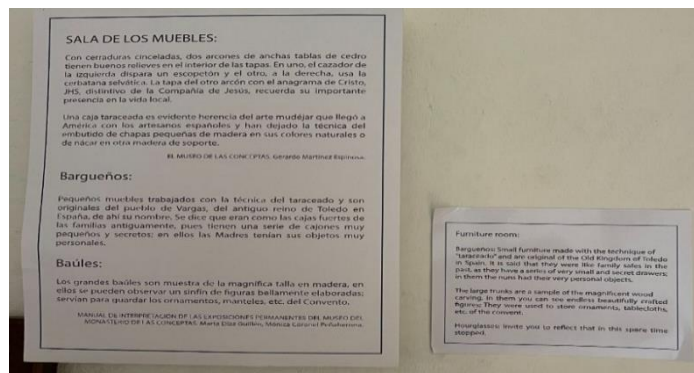


Figure 4 Example of Information Provided at Museum Exhibits, Spanish, Some English Translation

individuals associated with the museum, including professors from the University of Cuenca, representatives from the Ministry of Tourism, and museum visitors. When questioned about the accessibility of information regarding exhibited pieces, responses varied (Appendix 12.2, 11.3, 11.4, 11.5). While those who are well versed in the museum's operations expressed satisfaction

with the existing informational framework, further scrutiny revealed that newcomers often find themselves deprived of adequate context. Cultural education is a principal idea of the museum experience and reveals this discrepancy as a fundamental flaw in their museum practice.

In pursuit of a practical solution, the group initially considered implementing QR codes throughout the museum, enabling guests to access detailed information about each exhibit through their smartphones. However, practical limitations emerged, as the museum's inadequate cellular connection rendered this approach unfeasible. A plan was then set in place to devise an alternative solution that avoids reliance on internet connectivity.

While visiting El Museo de las Culturas Aborígenes something really stood out when browsing the museum and taking ethnographies and interviews. The museum had a bilingual pamphlet that was available to the guests. When first entering the museum patrons go up to the front desk and get to specify whether they would want a pamphlet in Spanish or in English. Then when walking around the different rooms and collections the pamphlet indicated what to read for each collection. It drove the guests to each part of the museum in a sequential order. This was great for patrons of different backgrounds and made it very simple to make ones way around the museum as well as understand everything that was on display. This was an idea that was seen that was a viable option to be implemented at el Museo de las Conceptas.

10. Discussion & Deliverables

10.1. Increasing Information Accessibility

In the ongoing pursuit of enhancing visitor engagement and enriching the museum experience, a thoughtfully designed pamphlet was developed. This initiative was created to increase the accessibility of information currently available within the museum's confines. Understanding the pivotal role that comprehensive context plays in fostering meaningful connections with the exhibits, the pamphlet emerges as an educational tool, inviting visitors to explore the artistry and history essential to a true grasp of each collection.

The pamphlet, as depicted in Figure 5, is a trifold paper, designed to provide a bilingual experience for a diverse audience. Each room provides a double-sided pamphlet, one side in English and one in Spanish. It contains information detailing the history and meaning of each collection. This design choice reflects commitment to inclusivity, ensuring that all visitors, regardless of linguistic background, can fully immerse themselves in the richness of the museum's offerings.

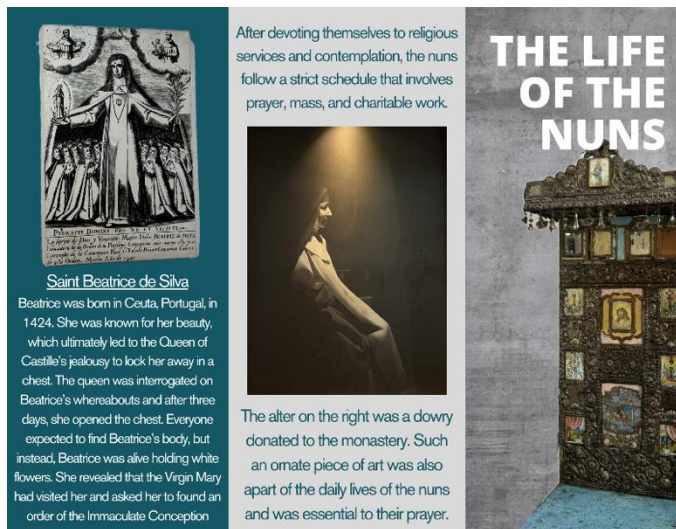


Figure 5 Example pamphlet of the Life of the Nuns room

Each pamphlet is tailored to the unique characteristics of the room or collection it represents. The title shows the name of the room along with its corresponding number, providing visitors with a clear idea of how to navigate the collections. Imagery contained in the pages, offering showings of the artwork housed within each space, accompanied by descriptions where needed. Furthermore, the pamphlet goes beyond mere cataloging, offering different stories on the overarching themes and significance of each room, inviting guests to explore not just what is on display, but the deeper stories and concepts at play.

The design of the pamphlet is carefully curated to reflect the aesthetic and ambiance of each room it represents. From vibrant colors that show the palette of the paintings to different textures that evoke the mood of the collections, every aspect is thoughtfully considered to enhance the visitor experience.

Placed outside each room, the pamphlets serve as an educational guide for guests as they explore the museum. For example, the pamphlet depicted in Figure 5 outlines the room in Figure 6. The compiles the works of art within the room and allows the pieces of art



Figure 6 Image of the Life of the Nuns room

detailed on the pamphlet to catch the visitors' eye and increases their engagement with the pieces due to the easy accessibility of information.

In essence, the pamphlet stands as a showing to the museum's commitment to accessibility, understanding, and appreciation. It embodies the dedication to providing visitors with the tools they need to unlock the full potential of their museum experience, inviting them to embark on a journey of discovery and education.

10.2. Interacting & Engaging Youth

The feedback gathered from the sponsor indicated that incorporating hands-on and physically interactive elements would greatly benefit the learning experience for children visiting the museum exhibits. Experience, observation, and interviews with museum officials revealed that students, typically younger children, quickly lose interest and engagement with education displays, especially ones lacking an interactive component. It was recommended to integrate some form of physical activity or participatory learning to keep children attentive and absorbed as they explore the exhibits. Physical interaction and challenges motivate youth engagement and help define concepts more clearly. Even brief moments of appropriate movement can re-focus children between periods of concentration.

Two promising options that emerged were integrating periodic educational exhibit displays “*Angelita Aventura’s Magical Circles*”, pictured in Figure 7, along with a scavenger hunt throughout the exhibits (Figure 10), and the “*Discover the Message!*” activity (Figure 9). These activities were carefully developed and chosen due to their affordability and simplicity. “*Angelita Aventura’s Magical Circles*” in English or “*Los Círculos Mágicos de Angelita Aventura*” in Spanish follows a small angel named Angelita Aventura. Angelita asks questions and shares trivia based on different collections and exhibits throughout the museum. These educational exhibit displays are applicable to all spaces and exhibits, since the design is universal, and the questions only change in accordance with the exhibit/collection. The display is catered towards younger children with ages ranging from 5-12 years old. This combines educational content with a gaming element to captivate younger audiences. Each exhibit features



Figure 7 "Angelita Aventura's Magical Circles" An interactive activity for children

a colorful circle outside its walls that reveals supplemental information about the collection and asks questions to further engage children. For example, the circle pictured in Figure 7 is placed outside the El Tacto room, as seen in Figure 8.



Figure 8 El Tacto room depicting the embroidery

The circle ensures children fully absorb the art of each room and immerse themselves in the work of the nuns. After entering the exhibit with the question Angelita asks, the children write down their response and place it on the wall near the circle. The end results in a collage of responses and creates a welcoming display of the children’s work.

Another circle asks questions like “What do you see in this painting/sculpture/artifact? What colors, shapes, or figures stand out to you?”, “Pretend you are a priest/monk/nun in this exhibit. Act out what your daily life would be like. What rituals would you perform?”, “Which nun gown is your favorite?”. This interactive and educational display presents an affordable yet stimulating activity to enhance the museum experience for younger children. This engagement and learning is fortified through the completion of the “Discover the Message” activity and scavenger hunt.

These activities are essential to the further engagement and education of children through their requirement of reflection and memory retrieval. Such mental stimulation is proven to enhance comprehension and processing speed (Karpicke et al., 2016) and can contribute to children’s cultural understanding of the museum.

The “Discover the Message” activity asks questions with fixed answers. These questions pertain to the museum exhibits and the stories and history behind various pieces of art. The secret message is revealed through the correct answering of each question and the use of the red asterisks as a key. The questions are not in a chronology determined room, but instead are asked in a

nonlinear narrative. This requires full attention and focus for the correct completion of the activity, further emphasizing the importance of reflection and retrieval. Its complexity introduces the engagement of an age group older than 8 years old, whereas the scavenger hunt caters to a wide range of age groups above 6 years old.

The scavenger hunt contains a list of vague descriptions of objects in the museum and allows an open-ended and creative response. For example, “an outfit made by the nuns” requires a reflection of the room depicted in Figure 8 and can elicit a response of any amount of imagination. The careful examination of each room is essential for its completion and requires the reading of information detailed in pamphlets or plaques, and the search of each area thoroughly to find objects matching the descriptions. The hunt guides children through exhibits they may not normally visit, exposing them to the full depth of the museum’s collections and can also be incentivized by toys or treats made by the nuns upon completion. The scavenger hunt promotes active engagement, observational skills, and through exploration of all the museum has to offer, all while making the experience fun and game like for children.

Discover The Message!
Use these questions and the starred letters to uncover the final message!

1. Who is the mother of Jesus? * _ _ _ _
2. What is a symbol of Jesus that can be seen around the museum? _ _ _ * _ _
3. Who lives in the monastery? _ _ _ _ _
4. Who were seen as messengers from God? _ _ _ * _
5. What are people recognized by the Church as holy and virtuous called? * _ _ _ _ _
6. What is another name for the Sacred Heart safeguard? _ _ _ * _ _
7. What contains beautiful flowers and plants? _ _ _ * _ _
8. What do the nuns do to decorate clothing and _ _ _ _ _
9. What do kids play with? _ _ _ * _ _

— — — — —

Figure 9 "Discover the message" children's activity

Scavenger Hunt

Explore the museum and find the things that match the description. Write down what you found in the lines below.

Can you find

1. Something that makes musical sounds _____
2. An object that sparkles _____
3. Something kids play with _____
4. An outfit made by the nuns _____
5. A symbol of Jesus _____
6. A place for the nuns to rest _____
7. A piece of furniture _____
8. Art illustrating Cuenca _____
9. Animals following a woman _____
10. A symbol of protection _____

Figure 10 Scavenger Hunt youth activity

The feedback received from interviews and sponsor meetings consistently highlighted the importance of collaboration with the youth, particularly involving schools and youth groups to

increase engagement. Engaging young people in museum programs not only broadens their understanding of cultural heritage, but also fosters a sense of belonging as well as relevance in their lives. These collaborations provide museums with fresh perspectives, innovative ideas, and a deeper connection to the community. This collaboration also benefits the youth in the community, providing them with valuable skills, a sense of empowerment, and a lifelong appreciation for cultural institutions.

El Museo de las Conceptas already has events catered to the youth in the community through Family Saturdays. This reoccurring event fosters deep connections with the community and provides the Museum with clear-cut engagement from the youth. Continuing to hold events like these will only benefit the Museum in the future. Also, furthering their community engagement through collaboration with local primary/secondary schools and youth groups will help the Museum gain massive exposure.

10.3. Increasing Engagement Within the Museum

10.3.1. Developing an Online Presence

To aid the Museum in attracting new visitors and tourists to the Museum, the development and restructuring of the current online presence is necessary. With the popularity in the use of social media, it is essential that the Museum understands the importance of its use to maintain their brand identity. Various social media analytic platforms have been employed by businesses to track their post insights and understand their consumer. By utilizing Meta Business, a program that combines the backend of Facebook and Instagram, the Museum can track their post insights, schedule posts around optimal posting time, and understand their audience. These actions are essential to the growth and success of their social media, but also the sustainability of its use. During implementation of Meta Business, it was revealed that due to advertising in the past the museum is no longer able to connect their Facebook and Instagram, as

seen in the active restrictions detailed in Figure 11.



Figure 11 Active restrictions on the Museum's Meta Business Suite

Though this presents as a drawback to the operation of Meta Business Suite, it does not make the application completely futile. This restriction has only prevented the connection of Instagram and Facebook to the Suite but allows each social media platform to be accessed independently. Analytics and user behavior are still able to be retrieved through the Suite, but through the mode of two queries.

Through content analysis of various Museums social media, it is apparent that there is room for improvement in the context of the content the Museum posts and their brand identity. To increase attraction to the Museum's Instagram, a shift from only posting event fliers to showcasing the art and people of the Museum and its events is imperative. This potential change can be seen in Figure 12, which compares the Museum's current Instagram to one that focuses on real photos of the Museum instead of fliers for the Museum.

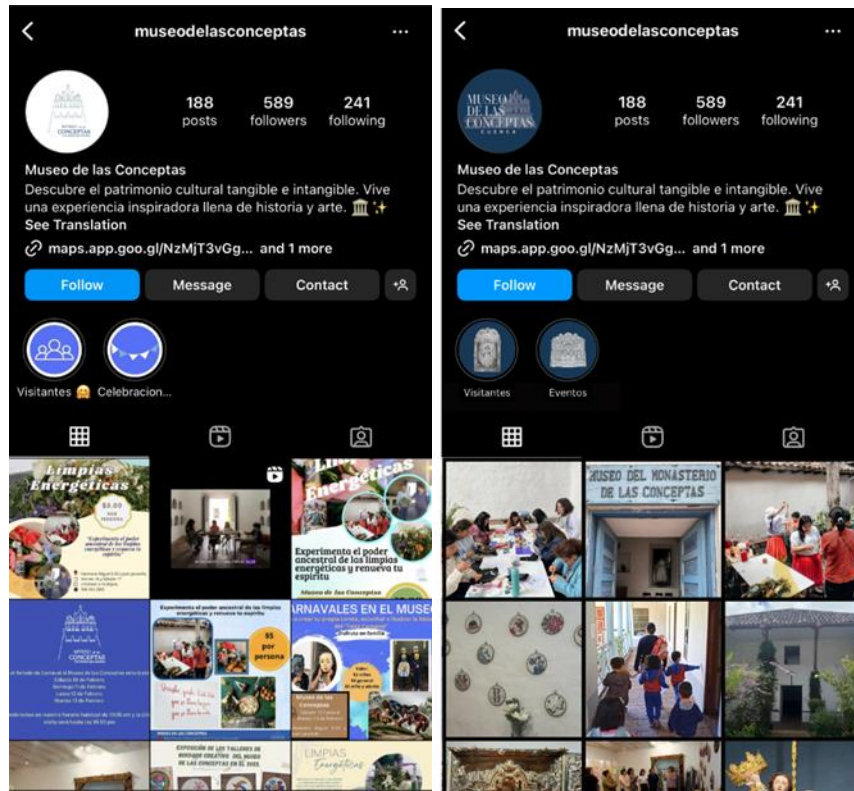


Figure 12 El Museo de las Conceptas current Instagram versus a more effective social media strategy

The shift to focusing on raw content instead of fliers does not have to mean the museum no longer promotes their events on their Instagram; it means that the primary photo used to promote the event does not require text or call outs to attract likes or traction. The use of raw content also allows the potential of video marketing to be explored. Compared to photos, videos

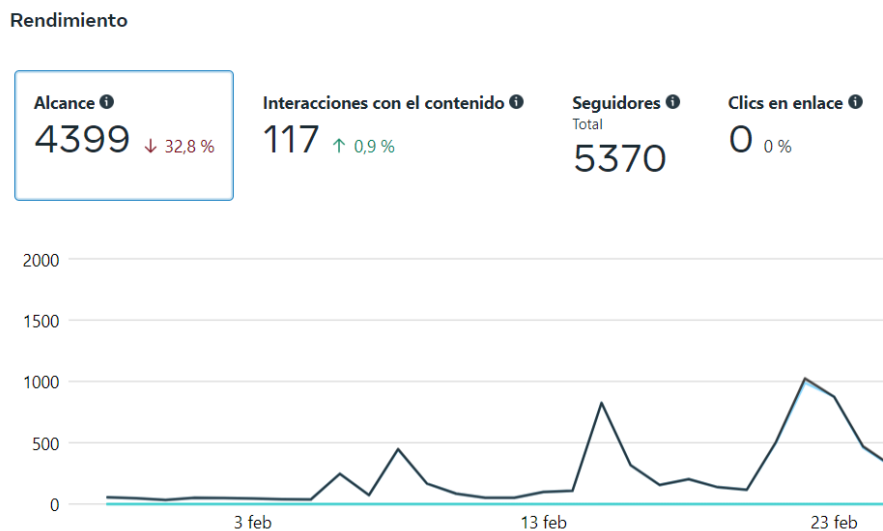


Figure 13 Current Facebook Analytics of Follow Engagement

generate 1200% more engagement than text and image content (McCormick & McCormick, 2024). Insights also show the Museum's Instagram following is the most active on Fridays and Saturdays while their Facebook following is most active on Thursdays. Further insights, as shown in Figure 12, depict follower behavior and play an essential role in understanding the success of current social media strategy. Using this information is an easy way to enhance the performance of posts by understanding what their followers enjoy the most and expanding on these types of content. This information also might be subject to change, but consistent use of the Meta Business Suite allows the Museum to adapt to these changes and continue to utilize social media in the most efficient and effective ways.

10.3.2. Virtual Tour

.By utilizing a virtual tour, a preview of the Museum is allowed to be viewed by a potential visitor and create a drive within them to want to know and see more. The virtual tour was developed using the free software Lapentor and utilizing the panoramic photography setting on the iPhone. The simple development of the tour allows the Museum to continue to add new exhibits or pieces of art with ease. The Lapentor website itself also contains a plethora of resources for the development and perfecting of a virtual tour which confirms the sustainability of the tour for the Museum. The tour was built with the importance of easy use in mind so that users of all ages and technological capabilities may utilize the tour. Arrows allow easy navigation while large callouts detail relevant hotspots such as the option to view an image, video, audio clip, or information section. The user interface can be viewed in Figure 13.



Figure 14 Screenshot of the Developed Virtual tour in Los Juguetes Room

To create a personalized touch on the virtual tour, certain exhibits and locations feature a video of Monica Muñoz Carrasco, the director of the Museum, explaining the history and significance of various aspects of the Museum. These videos are in Spanish with Spanish and English close captioning to increase the accessibility of this information. The user interface of the virtual tour is available on PC, Mobile, and VR, allowing for a wide range of compatibility. The Museum will have access to the insights and analytics of the tour. This information can tell the Museum how long people are staying at certain exhibits, what exhibits, or hotspot features of the tour gain the most traction and engagement, and how many people in general are accessing the virtual tour.

11. Conclusion & Recommendations

El Museo de las Conceptas puts a vital aspect of Cuenca's history on display while amplifying the life and impact of the monastery's nuns. With modern trends emphasizing the importance of technology, it is necessary for such a monumental institution to be up to date with such a movement. Globally, museum attendance is on a downward trend with COVID-19 exacerbating this decline and emphasizing the importance of digitization. In partnership with our sponsor, Monica Muñoz Carrasco, the development of their online presence was the primary objective with the project goals of increasing the attraction, engagement and accessibility of El Museo de las Conceptas and its art. Extensive research in digitization and museum engagement was conducted, revealing various feasible strategies. This was done through working with Monica Muñoz Carrasco and experts of museums, culture, and tourism to address these goals. The strategies determined to be the most effective in terms of cost and aesthetics were the development of bilingual pamphlets, a virtual tour, the implementation of a social media strategy and an interactive activity for the youth. These deliverables are critical to the growth of attendance and the retention of such growth.

Throughout the discussions about the project and its deliverables, we've received valuable recommendations from various stakeholders who have influenced the project. Overall, both interviewees and representatives from the Museum have expressed enthusiasm for the proposed deliverables, believing they will significantly enhance the Museum's experience. With the inclusion of a bilingual pamphlet, interactive kids' activities, and a virtual tour, they anticipate a considerable improvement in museum engagement for individuals of all ages and backgrounds.

These additions are seen as vital enhancements that will broaden accessibility and enrich the overall visitor experience, fostering greater inclusivity and enjoyment for diverse audiences.

If another WPI group offers their assistance to the Museum, here are some valuable suggestions to consider. It's advisable to continue exploring ideas for enhancing the Museum's presence on social media platforms, alongside making improvements to its website. Although these initiatives weren't feasible for the current group due to constraints in time and budget, implementing them in the future would undoubtedly elevate the Museum's outreach and engagement significantly.

12. Bibliography

1. Adams, G. Donald. (2008). *Participatory Communication with Social Media* - Wiley Online Library. *Survey of Museum Public Relations*. Wiley Online Library. <http://onlinelibrary.wiley.com/doi/abs/10.1111/j.2151-6952.2008.tb00292.x>. Accessed 14 Dec. 2023.
2. Ahmed, Z. A., F. Qaed, & N. Almurbati. (2020). Enhancing Museums' Sustainability Through Digitalization. In *2020 Second International Sustainability and Resilience Conference: Technology and Innovation in Building Designs (51154)* (pp. 1-4). Sakheer, Bahrain. doi: 10.1109/IEEECONF51154.2020.9319977.
3. Anita, Tiurida Lily, et al. (2021). Smart Tourism Experiences: Virtual Tour on Museum. *Research Gate*, Mar. 2021. <https://doi.org/10.46254/an11.20210813>.
4. Arnaboldi, Michela, & Melisa L. Diaz Lema. (2021). The Participatory Turn in Museums: The Online Facet. *Poetics (Amsterdam)*, 89, 101536.
5. Chang, E. (2006). Interactive Experiences and Contextual Learning in Museums. *Studies in Art Education*, 47(2), 170–186. <http://www.jstor.org/stable/3497107>.
6. Dávila, Eulalia Moreno De. (2005). *La Colección Pictórica Del Museo de Las Conceptas de Cuenca*. Universidad Del Azuay.

7. Faria, Clara Pache de, & Rafaela Norogrande. (1970). Digitization Project of Museum Collections as a Way of Preserving Memory and Cultural Heritage. *SpringerLink*. Springer Nature Switzerland. http://link.springer.com/chapter/10.1007/978-3-031-47281-7_16#citeas.
8. Jiang, Chengmei, & Seuk Wai Phoong. (2023). A Ten-year Review Analysis of the Impact of Digitization on Tourism Development (2012–2022). *Humanities and Social Sciences Communications*, 10(1). <https://doi.org/10.1057/s41599-023-02150-7>.
9. John, A., & Kathleen Franz. (2018). Advertising in the Archives: National Museum of American History at The Smithsonian Institution. *Advertising & Society Quarterly*, 19(2).
10. Karpicke, J. D., Blunt, J. R., & Smith, M. A. (2016). Retrieval-Based Learning: Positive effects of retrieval practice in elementary school children. *Frontiers in Psychology*, 7. <https://doi.org/10.3389/fpsyg.2016.00350>
11. Ladkin, N., et al. (2010). The use of collections in research and teaching at the Museum of Texas Tech University. *University Museums and Collections Journal*, 3, 128-136. <https://edoc.hu-berlin.de/handle/18452/9342>.
12. Lazzeretti, Luciana, Andrea Sartori, & Niccolò Innocenti. (2015). Museums and Social Media: The Case of the Museum of Natural History of Florence. *International review on public and nonprofit marketing*, 12(3), 267–283.
13. McCormick, K., & McCormick, K. (2024, January 25). *75 Staggering video marketing statistics*. WordStream. <https://www.wordstream.com/blog/ws/2017/03/08/video-marketing-statistics>

14. Rizvi, Jia. (2022). How to Increase Engagement Through Video Marketing. **Forbes**, 31 Oct. 2022. www.forbes.com/sites/jiawertz/2022/10/30/how-to-increase-engagement-through-video-marketing/?sh=13b813e52304.

15. Internet and Social Media Users in the World 2024 | Statista. (2024). **Statista**, 31 Jan. 2024. www.statista.com/statistics/617136/digital-population-worldwide.

16. Sábados En Familia - Museo De Las Conceptas. **Museo De Las Conceptas**, p' 647510cd5f31b.site123.me/novedades/s%C3%A1bados-en-familia-3.

17. Steer, P., & Ernst, S. (2021). Peer review - Why, when and how. *International Journal of Cardiology Congenital Heart Disease*, 2, 100083.
<https://doi.org/10.1016/j.ijcchd.2021.100083>

18. Striepe, Susan E. (2013). How Some Art Museums Can Appeal to Teenagers. **JSTOR**, Taylor and Francis Group, July 2013. www-jstor-org.ezpv7-web-p-u01.wpi.edu/stable/pdf/43304984.pdf?refreqid=fastlydefault%3Ad471fb26f726745f695988b3b913ac32&ab_segments=0%2Fbasic_search_gsv2%2Fcontrol&origin=&initiator=&acceptTC=1. Accessed 31 Jan. 2024.

19. Turco, M. Lo, and M. Calvano. (1970). Digital Museums, Digitized Museums. **SpringerLink**, Springer International Publishing.
http://link.springer.com/chapter/10.1007/978-3-030-12240-9_41.

13. Appendices

13.1. Formulario de consentimiento para la entrevista

Acuerdo de consentimiento informado para participar en un estudio de investigación

Entrevistadores: Adeline Fede, Elizabeth Howie

Título del estudio de investigación: Mejora de la experiencia, la atracción y el compromiso del usuario de El Museo de las Conceptas a través de la digitalización

Patrocinador: El Museo de Las Conceptas

Introducción: Le invitamos a participar en un estudio de investigación. Para garantizar su participación informada, es fundamental que comprenda el propósito del estudio, los procedimientos y cualquier posible beneficio, riesgo o malestar asociado con su participación. Este documento proporciona detalles para empoderarlo a tomar una decisión bien informada sobre su participación en el estudio.

Propósito del estudio: El propósito del estudio es ayudar a que el arte y la historia del museo sean más accesibles para los visitantes del museo y desarrollar una presencia en línea que atraiga a una audiencia más amplia al museo.

Procedimientos a seguir: Estas entrevistas se realizarán cara a cara en inglés, si es posible, o en español. La conversación se grabará con una grabadora o una cámara si la persona se siente cómoda con eso. Si no es así, simplemente tomaremos notas de la conversación. Las entrevistas serán semiestructuradas con algunas preguntas básicas para iniciar la conversación.

Riesgos para los participantes del estudio: Los riesgos podrían ser sentirse incómodos al ser grabados o que se registre su nombre o información sobre ellos. Si este es el caso, podemos preguntarles si les gustaría permanecer en el anonimato o si no querrían ser entrevistados.

Beneficios para los participantes de la investigación y otros: Las ideas que usted tenga podrían implementarse en el proyecto. Al formularse estas preguntas, a uno se le podría ocurrir una idea en la que nunca antes se le había ocurrido.

Mantenimiento de registros y confidencialidad: La participación en este estudio es completamente opcional y las respuestas de usted permanecerán confidenciales. No se destacarán las respuestas individuales; en cambio, todos los datos se combinarán y analizarán colectivamente. Los registros de participación de usted se mantendrán confidenciales en la medida permitida por la ley. Si bien los investigadores del estudio, el patrocinador o las partes designadas y, en situaciones específicas, la Junta de Revisión Institucional del Instituto Politécnico de Worcester (WPI IRB) pueden revisar datos confidenciales que incluyan su nombre, los hallazgos publicados no revelarán su identidad.

Compensación o tratamiento en caso de lesión: dado que el riesgo de lesión es extremadamente bajo, no se proporciona ninguna compensación por ningún daño potencial. La aceptación de esta declaración por parte de usted no renuncia a ninguno de sus derechos legales.

Para obtener más información sobre esta investigación o los derechos de los participantes, o para informar cualquier lesión relacionada con la investigación, comuníquese con:

Usted La participación en esta investigación es voluntaria: elegir no participar no dará lugar a sanciones ni a la pérdida de los beneficios a los que tiene derecho. Usted tiene la libertad de retirarse de la investigación en cualquier momento sin enfrentar las consecuencias negativas de perder los beneficios. Los investigadores del proyecto se reservan el derecho de cancelar o posponer los procedimientos experimentales según sea necesario. Su firma a continuación confirma que comprende y acepta participar en el estudio descrito. Asegúrese de que todas las preguntas de usted se aborden antes de firmar y que usted tenga derecho a conservar una copia de este acuerdo de consentimiento.

Firma del participante del estudio

Nombre del participante del estudio (en letra de imprenta)

Firma del entrevistador

13.2. General Questions about El Museo de Las Conceptas

- A. Do you think the history of each piece is readily available?
- B. Do you have a favorite piece or collection in the museum? Why?
- C. Do you still visit the museum and its events?

13.3. Interview Questions Asked to Museum Personnel of Cuenca

- A. What is your experience in reopening “Museum Name” after COVID-19?
- B. What are some ways you find most effective with advertising a museum?
- C. Is there something you think “Museum Name” implemented that you feel best boosted attendance?
- D. Why do you believe the preservation of culture and heritage is so important?
- E. How do you believe we can continue to educate and promote culture during the digital age?
- F. Do you believe there are any downsides to digitalization?

13.4. Interview Questions Asked to Experts of Culture and Heritage

- A. What is your relationship with the Museo de las Conceptas?
- B. Do you think the reopening of the museum was successful?

- C. Our current goal is to create a virtual tour of the museum that highlights information about certain pieces and allows people to get to know the museum a little online, and then we also plan on creating QR codes to put near exhibits and pieces of art, what is your opinion on this plan, and do you believe its implementation would be successful to increase engagement and attraction to the museum?
- D. Why do you believe it is important to preserve the history of this museum?
- E. Do you believe that there is a part of Cuenca's history that is important to highlight or consider in our project?
- F. How do you believe the monastery has impacted the history of Cuenca?
- G. As a professor, have you used the museum as an educational tool for your students?
- H. What lessons do you think the museum holds for students?
- I. Do you think the history of each piece is readily available?

13.5. Interview Questions Asked to Experts of Tourism

- A. What is your relationship with the Museo de las Conceptas?
- B. Do you think the reopening of the museum was successful?
- C. What do you think is the most effective way to attract tourists to the museum?
- D. Our current goal is to create a virtual tour of the museum that highlights information about certain pieces and allows people to get to know the museum a little online, and then we also plan on creating QR codes to put near exhibits and pieces of art, what is your opinion on this plan, and do your believe its implementation would be successful to increase engagement and attraction to the museum?
- E. As someone very knowledgeable about hospitality and tourism, what have you noticed about tourism in Cuenca after the pandemic?
- F. What are some successful strategies you have seen businesses implement after COVID or in general?

13.6. Interview Questions Asked to Museum Professionals on Engagement

- A. How is the museum utilizing virtual tools and digital platforms to increase accessibility and engagement?

- B. Are there plans to create a virtual museum tour or online exhibits? What opportunities or challenges do you see with digital access?
- C. How is the museum leveraging social media and its website to share collections with online audiences?

13.7. Interview Questions Asked To Museum Professionals On Storytelling & Context

- A. What methods does the museum currently use to share historical and cultural narratives about the icons?
- B. How could multimedia components like videos enhance the narrative experiences in exhibits?
- C. How are docents/guides trained to engage visitors with compelling stories about the icons?

13.8. Interview Questions Asked To Museum Professionals On Expanding Collections

- A. Does the museum share any personal stories from donors, collectors, or patrons about their connections to icons? If not, could this be meaningful?
- B. How could exhibits or programs better highlight the people and communities linked to the icon collection and its history?
- C. Are there opportunities for collaborations with local artists, religious groups, or community members around the icon collection?

13.9. Hierarchal Cluster Analysis of the Interview Questions, “What are some ways you find most effective with advertising a museum?” and “Is there something you think “Museum Name” implemented that you feel best boosted attendance?”

13.9.1.

