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Abstract

Purpose - This interdisciplinary study re-evaluates the Sungai Melaka flood mitigation project's impact on community success in Malaysia's UNESCO World Heritage site, broadening the definition of success considering historical and cultural significance. The research aims to revisit success metrics, focusing on the project's influence on people's interactions, cultural well-being, social cohesion, and heritage preservation.

Design/methodology/approach – This study explored visitors' reviews of their experience visiting Sungai Melaka in several data collection stages. The first data collection involved a web survey posted on Facebook to capture diverse perspectives of the population and grasp the core strand of knowledge to focus on the second data collection, the questionnaire. The final stage involved interviews to generate rich qualitative data.

Findings- The findings revealed that the impact exceeded tangible outcomes since the project impacted people's interactions and practices. The research assesses cultural benefits, incorporating these indicators into evaluating cultural ecosystem services by capturing local visitors' and communities' perceptions, preferences, and behaviours. The findings found that other project success attributes include identities, capabilities, and experience, further defining learning, health, economics, connection to nature, and symbolism.

Originality/value – The research explores the meaning of project success beyond the traditional metrics by capturing success from the users' perspectives and people's interaction and their impact on culture and well-being. The cultural ecosystem services framework used in the study is applied to explore the interactions between people and the facility and its effect on the people.

Keywords: community, cultural ecosystem services, heritage, infrastructure, project success, socio-economy

Paper type : Research paper

Introduction

Operating within a highly susceptible environment influenced by economic and political changes, the construction industry has faced setbacks in productivity due to movement restrictions and lockdowns. This constant disruption brings instability, impacting the construction industry's productivity and profits. As demands for economic recovery persist, construction projects are facing additional obstacles within limited budgets, timeframes, and quality constraints. Factors such as volatile material prices, irregular labour supply, reduced client investment, and uncertainties stemming from Brexit (particularly in the UK) may further compound these challenges. The industry is in a dilemma with the struggle to meet project parameters and generate satisfactory returns. It must strive to sustain itself in the market while simultaneously meeting the escalating demands for higher investment returns from clients and stakeholders.

It is indisputable that the construction industry has historically played a pivotal role in driving national growth. Nevertheless, the COVID-19 pandemic has presented unprecedented challenges,

causing significant disruptions to lives and economies worldwide. Understanding the performance and behaviour of the construction industry requires considering five essential elements: economic and industrial factors, government policy, social and technological change, and internal sector changes. While digital technology has been extensively discussed to improve reliability and performance, it is crucial to recognise that global catastrophic events such as COVID-19 have fundamentally changed people's lives and functional needs. These changes, driven by regulations and altered priorities, necessitate adaptations and retrofits in building and facility designs.

Nevertheless, the fact that digital technology may co-construct, shape and continuously shape people and their practices in leading their lives, it is fundamental that we evaluate the impact of the mature infrastructure, which, in this study, the flood mitigation system, access to sanitation, clean water supplies to the community. The evolving needs of the stakeholders and the ambiguity in defining project success may need bespoke metrics depending on the project's location, which heavily relies upon the stakeholders' perception. Ika and Pinto (2022) advocated that the project model of success should be viewed not only on the dimensions between success criteria, business case and green efficacy. The project's success should require some long-term time frame to ensure the benefits are achieved by the client and project team and the shared view of stakeholders (Ika and Pinto, 2022), which may require a considerable amount of time to ensure the project generated the intended benefits to the community. Therefore, there is a crucial need to reflect on the concept of project success, and there is a gap in evaluating the success of the community or the users of the infrastructure facility on how the facility or the infrastructure creates resilience for the community. The case from Sungai Melaka, presented in this paper, firstly exemplified the fluidity of the flood mitigation project, which follows the Foucaldian scholarship where infrastructure is a complex combination of objects, persons and practices (Simone,2004). This technological/ architectural apparatus supported society and reproduced and reconfigured every day. Therefore, assessing project success requires re-examining current feedback mechanisms to capture these missing elements and inform sustainable changes for the future. Moreover, with the growing demand for construction activities, it becomes imperative to consider sustainable approaches that enhance community value as part of the recovery plan.

The industry's role is pivotal in enhancing the value of a location by providing opportunities to uplift the community. The delivery of opportunity can be achieved through various means, such as the construction process, supporting local businesses, generating employment opportunities (aligned with SDG8: decent work and economic growth), and fostering economic activities in the surrounding areas. Moreover, the completion of a facility facilitates people's mobility and contributes to long-term financial gains, aligning with SDG9: Industry, innovation and Infrastructure, as well as SDG11: Sustainable Cities and Communities. As a result, it becomes crucial for construction industry professionals to contemplate how these facilities can foster cohesion positive growth and promote socioeconomic mobility within society.

This interdisciplinary study focuses on the impact of the flood mitigation project of Sungai Melaka, which was constructed in 2002 and completed in 2014. The flood mitigation infrastructure is situated in the historic city of Melaka, a UNESCO World Heritage site. Initiated by the Melaka State Government and the Historical Melaka City Council, this flood mitigation project aims to protect communities living along the river by intercepting all the sewer discharges into the river by building a new network of sanitation works, to create river embankment by making it a landscaped river walks and protecting the villagers of the historical significance of Morten Village from flooding by constructing the stormwater pump to prevent flooding and tidal inundation, while preserving heritage artefacts along the river. The project has improved the community living conditions, such as

building new sanitation systems; the project envisions uplifting the resilience and well-being of Morten Village's communities. The venue holds immense historical value and attracts visitors from Malaysia and beyond. It encompasses diverse heritage and history, with the river flowing through precious artefacts dating back to the Portuguese, Dutch, and British occupations. The strategic location of Sungai Melaka has historically contributed to Melaka's economic advantage as a trade and commerce hub in the Malay Archipelago. As a result of this infrastructure, the venue has become a tourist attraction with the award for UNESCO World Heritage Site, which has driven the property values and created an economic stream for the community and the state.

This study aims to re-visit the metrics of project's success to include the project's impact on people based on people's interaction with the project. We wish to extend Simone's (2004) notions on establishing people's collaboration with project infrastructure by identifying people's interaction with the project and connecting the link of project success with the notion of how infrastructure would contribute to the community practices as the feedback mechanism loop to inform the future decision making and future planning. This can be achieved by the evolving needs of diverse communities, including visitors, to emphasise the importance of gathering feedback from the correct group of stakeholders for their specific needs (Davis,2016). This particular study is a bottom-up study that involves the designation of feedback on the project's success to local visitors and communities by granting freedom and leverage for the communities to voice their views about the project's success. In particular, the research aimed to capture people's perceptions, preferences, and behaviours related to the cultural benefits they derive from the environment. By integrating these indicators into the cultural ecosystem services assessment, a facility within a place or environment's success can be evaluated not only based on its facility outputs but also on its contribution and impact on cultural well-being, social cohesion, and the preservation of cultural heritage. By incorporating historical and cultural significance, understanding diverse community needs, and employing innovative research methodologies, this project aims to foster sustainable development that respects and supports the values of all stakeholders involved.

At this stage, we focussed on visitors' perspectives and sensory experiences of the place, pre and post-COVID-19, to capture the historic and aesthetic value of Sungai Melaka. The research employs online qualitative surveys, interviews, and questionnaires to gather data. Photography is used as a research tool to encourage conversation during the interview and enhance analysis, including the researcher'sinterpretation of the qualitative data. The findings shed light on community and visitor perceptions of the flood mitigation project and their aspirations for the future built environment, considering the impact of urbanisation on local communities, including minority ethnic groups. Instead of solely relying on professional practices to capture visitors' needs, the study acknowledges the importance of identifying intrinsic worth related to the place's culture and historic and aesthetic value. It recognises that community values are not fixed but fluid, shaped by individuals' perceptions and appreciation (Jones, 2017).

The long-term aim is to guide decision-making processes and promote sustainable development aligned with stakeholders' values. The first is to evaluate the interaction between people and the facilities. We decided to evaluate visitors' practices with the cultural ecosystem services(CES) using the framework developed by the formative work of Fish, Church and Winter (2014). Applying the framework aims to allow more inclusive and holistic approaches to measuring the intangible aspects of the facilities' success. Usually, the cultural ecosystem services analysis is applied to analyse the human-ecosystem relationship (Chan et al., 2012).However, Chan et al., (2012) argued that there is a lack of clarity in determining the value generated for environmental decision-making due to personal preferences regarding their experience, expertise, appreciation, and experiences. The cultural

ecosystem services framework identifies the people's interaction with the environment and the cultural activities undertaken while interacting with the ecosystem. The framework highlighted the importance of spaces as the platform for the activities, and these activities have impacted the areas.

Although the concept of measuring the interaction of people and spaces may not entirely be familiar within the construction practices, there is an opportunity to evaluate people's interaction with the facility as part of project evaluation, which will, in turn, be part of project development and planning for the next project. It demonstrates the impact of the end-user and their interaction with the facility. It bridges the engagement between the stakeholders of the project and the community, which will shape the future of the next project.

Deconstructing project success: Linking to people practices

The focus of a project and its definition of success across various project types suggests three main qualifiers: meeting the targeted budget, delivering within time and achieving the required standard set by the client and various project regulations, including the stakeholders in the project (De Wit, 1998; Baccarini, 1999). These targets are selected based on the project objectives, which construe the project context, its priorities and the desired metrics of success indicators to measure the project's performance (Morris, 2013a). While these project objectives, which determine the project's success, have the quantitative qualifier of meeting cost, time and quality, this interpretation of a successful project is not confined to the success of managing the perturbations, uncertainty and disturbances in projects.

Project delivery encompasses fulfilling contractual obligations by providing clients with expected outcomes, targets, and aspirations. However, achieving successful project outcomes requires a clear understanding of project requirements and effective management of information to minimise uncertainty (Winch, 2001). While advanced technologies like Building Information Modelling, augmented and virtual reality, digital twins, and simulations can enhance decision-making and offer clarity to inform clients and stakeholders, less experienced parties may struggle to benefit from these advancements due to a lack of transparency in their needs and priorities. Learning from past successes and failures and leveraging information from previous projects presents an opportunity to improve future endeavours; thus, it is essential to consider another element to include for evaluating the success (Atkinson, 1999).

In alignment with Jacques Derrida's concept of deconstruction, Morris (2013b) proposed a value-driven approach to project delivery that involves dissecting the components of project management success to understand its underlying meanings better. Morris's framework breaks down project processes into three primary levels: Level 1 pertains to the technical core, Level 2 encompasses the strategic perspective of the project, incorporating stakeholder considerations into project delivery, and Level 3 extends to the long-term impact of the project within the broader organisational and environmental context.

Although Pinto and Slevin's (1987) project success criteria were examined from the perspectives of the organisational behaviour, the metrics did not explicitly describe the end users' feedback on the success. Samset and Volden (2016) aligned with Morris's (2013b) notion of examining the project's success by focusing on its tactical and strategic aspects and evaluating the project and its impact on society. It is also essential to examine the correct evaluation of success from various stakeholders' perspectives because different groups hold different perceptions of success (Davis, 2017).

Moreover, Morris(2013a) engaged in a discourse with Terry Cooke-Davies (2002), expanding on the three levels of success. They argued that success in project management entails three key aspects:

ensuring correct project execution, meeting institutional success criteria, and delivering all necessary and unique criteria specific to the project's success. It is a clear gap showing the element of culture and the activities undertaken by the end users while using the facility, and its effect on the end users were not sufficiently highlighted.

Understanding the performance and behaviour of the construction industry requires considering five essential elements: economic and industrial factors, government policy, social and technological change, and internal sector changes. While digital technology has been extensively discussed to improve reliability and performance, it is crucial to recognise that global catastrophic events such as COVID-19 have fundamentally changed people's lives and functional needs. These changes, driven by regulations and altered priorities, necessitate adaptations and retrofits in building and facility designs. It is clear from the discussion above that we seldom re-visit the project's success after a certain period, although a project has a long life span (Shenhar et al., 1997; Baccarini,1999). With the transformation of the nature of people's routines and lifestyles, increased reliance on improved technology and demand for more sustainable practices to combat climate change through regulations and policies may have altered the definition and requirement needed for project success. The external factors, such as the political drivers and pandemic, may instigate how people perceive the importance of infrastructure and buildings to them, and these changes trigger the academics and industry professionals to re-evaluate the notion of project success.

The economy, environment, and society are interconnected components that strive for balance (Du Plessis, 2000; Giddings et al., 2002). While separating these components may grant autonomy to each aspect, determining which part takes priority becomes challenging. Although separating them allows for focused technical solutions, it is crucial to consider their collective impact on society, policy, and the stakeholders involved. The COVID-19 pandemic has highlighted a shift in people's needs and priorities regarding their interaction with nature and built environments. Prioritising human health and well-being has become a primary goal during the project definition stage. Setting project targets also relies upon the needs of society and the link with the socio-technical landscape in which society is currently living (Rip and Kemp, 1997). Usually, the project targets are usually based on realistic objectives considering the project's context, priorities, and desired success metrics. The evolving interaction between society and the technology in the buildings or infrastructures forms the dynamic that requires a change to the measurement of the performance in considering its project success. Various evaluation methods exist to assess project effectiveness and efficiency. However, not all project information can be effectively quantified using metrics alone, necessitating qualitative assessments (Kumaraswamy and Thorpe, 1996).Quantitative tools have specific expectations and targets to achieve for the construction projects. . For instance, sustainability rating systems such as BREEAM, LEED, WELL Building Standard, Passivhaus Standard, Green Star, and Pearl offer a range of metrics for assessing sustainability within digital technologies.

Literature discussing the preand post-COVID construction world primarily focuses on topics such as on-site health and safety (Olanrewaju et al., 2021), mental health among workers (Wang et al., 2021), cash flow management, project completion, and labour supply continuity (Sierra, 2022), as well as business performance and decision-making supported by modelling techniques (Shehadeh et al., 2022). Most literature exploring people's interaction with infrastructure is within urban studies. Urban planning has a growing emphasis on the importance of places for people. Scholars like Megahed and Ghoneim (2020) advocate for incorporating lessons learned from COVID-19 into urban planning processes and collaborating with communities to achieve desired benefits. Gehl (2020) highlights the significance of people's perceptions of places through surveys conducted in four Danish cities. Honey-Roses et al.,(2020) discuss the uncertainties associated with designing public

spaces post-pandemic. Balancing physical, social, emotional, economic, and intergroup dynamics within communities during decision-making processes is essential to ensure the delivery of valuable spaces. Transforming cities and places through built environment activities involves multiple actors, and aligning their perspectives with changes in people's behaviour and perception is critical. While careful consideration through design and planning is well-established in transforming cities and spaces, linking the impact of these changes on people and delivering project success to users, clients, and stakeholders requires further exploration.

People, historic cities and infrastructures

The aesthetics of urban cities are the product of a rich tapestry of time and tradition, shaped by careful consideration of the natural properties of a place (Burchard, 1957). However, limited research remains on the profound impacts of urbanisation on local communities (Ismail and Baum, 2006; Samat et al., 2014), particularly within World Heritage Sites (WHS) and minority communities. Many historic cities in urban centres face significant vulnerabilities due to the effects of urbanisation. These challenges include shifts in population structure, the erosion of distinctive townscapes, the transformation of traditional architecture into modern facilities, and large-scale reconstruction efforts (Shamsuddin and Sulaiman, 2002; Amin, 2018; Wan Ismail, 2018).

The disruption of the modern landscape is evident in the proliferation of office tower blocks, hotels, serviced apartments, and expansive shopping complexes. Unfortunately, these developments often render historic and traditional buildings economically unviable, leaving them neglected due to insufficient financial resources (Tweed and Sutherland, 2007; Van and Haraguchi, 2010; Bandarin and Van, 2015; Idid and Ossen, 2013; Said et al., 2013; Wan Ismail, 2018). Consequently, these challenges pose a substantial threat to the sustainability of cultural tourism, particularly in destinations that rely on culture-based tourism (CBT), as they endanger the preservation of sites and their authenticity, leading to cultural degradation.

Modernising the buildings and their surroundings will affect the people who live or visit the place. Angelo and Hentschel (2015) posed a serious question about which construction professionals should be concerned about whether the infrastructure makes people or people make the infrastructures. Infrastructure should be a collective consumption(Tonkiss,2015); however, people's classes may have privileges compared to others. There is compelling evidence indicating a significant shift in the spatial distribution of the population, with rural and peri-urban areas, such as Morten village in Malaysia, experiencing an exodus of inhabitants to other urban areas. This demographic transformation has profound implications for the identity, cultural values, and lifestyles of the affected communities. Urbanisation has brought about a considerable alteration in these communities' social and demographic fabric, primarily driven by youth migration, thereby jeopardising the continuity of culture-based tourism in the future. Sustainable tourism studies by Bandarin and Van (2012), Guzman et al.,(2018), and Riganti (2017) support this view, highlighting concerns about the impact of rapid changes, including youth migration, technological advancements, and the growing demand for modern lifestyles, on the cultural values, attitudes, behaviours, and engagement of these communities in tourism, ultimately posing risks to the sustainability of their cultural heritage.

Through this project, all communities residing along Sungai Melaka should benefit economically from tourism and other activities. However, given the diverse needs of different neighbourhoods, including visitors, it is crucial to identify and evaluate individual and collective needs to measure the project's success.This evaluation process will inform future planning during the early stages of project development, accounting for changing community needs and defining success from a

resilient perspective. However, the changes resulting from the pandemic may further reshape the cultural values of these communities, and the decrease in visitor numbers might create a serene sanctuary for the residents to cherish and protect their heritage.

Research setting and methods: Impact of flood mitigation infrastructure on visitors

Epistemologically, this research led through interpretivism lenses examining the ontological of the social constructivists' research. This research uses the case study on Sungai Melaka as the primary research approach. To keep the research data's originality and obtain the actual input from the visitors, we collected empirical data through a social media web survey using Facebook, then used the feedback from the web survey to form online interviews or qualitative questionnaires to the visitors of Sungai Melaka. Figure 1 shows the illustration of the data collection process.

Stage 1	1.1. Create a Facebook webpage for this research topic. 1.2.Create a post to advert our research in Facebook to advertise our research aim and invitation to public who has visited Sungai Melaka 1.3 The first post is aim to explore their generic feedback of the visit and the time of the visit	Justification: 1.1) Web-survey on Facebook allow fresh sampling frame for wider access of respondents (Scheneider and Harknett, 2022), rapid responses and recruitment due to society and engagement with technology (Stern et al., 2014) and effective access for respondents to participate 1.2) Aim of the first post is to explore current context of Sungai Melaka to form the questionnaire and generate public interest to participate in the questionnaire survey.
Stage 2	2.1. There are more than 140 responses to our first post on Facebook from the visitor and their feedback of the visit. Some respondents shared their photos of their visit. 2.2 Themes derived from the responses were analysed to develop questions for questionnaire using the framework by Church, Fish, Winter, 2014; and O'Brien et al., 2017 2.3 The aim of the questionnaire is to evaluate end users/ the visitors feedback about the project and its links towards project success. 2.4.Criteria : all visits must be conducted between 2019-2022. 2.5 No demographic data collected at this stage of research. 2.6 The survey was conducted over 3 weeks, no financial incentive and no tracking of participants.	Outcome: 2.1) All 140 responses in the earlier post happy to participate in the questionnaires and only 56 survey met the criteria for selection. 2.2) Some respondents prefer interviews and we conducted 13 interviews
Stage 3	3.1. Quantitative analysis on the questionnaires and qualitative analysis on the qualitative feedback 3.2 Thematic analysis on the interviews data 3.3 Cross analysis of the questionnaire data and the interview data	Outcome: 3.1) Data were analysed using the framework identified and the framework is updated (refer Table 1 and Table 2) 3.2) Draw some analysis to form conclusion

Figure 1: Data collection process

The first data collection stage started with the social media Facebook through a web survey to advertise our research and the research's aim and the social media post acted as an invitation to the public who had visited Sungai Melaka. Initially, the research team planned to conduct a walking interview with the visitors of Sungai Melaka to get their experience and their views on how the river mitigation project impacts the historical site. The walking interview is considered one of the best methods to capture views and experiences of a place through the sensory experience of the individuals of the place (Adam and Guy, 2007). Walking interviews expose both the researcher and the respondent to the multi sensory experience of the place, generating more specific place data than sedentary data collection (Evans and Jones, 2011). However, none of the researchers in the team were locally based in Peninsular Malaysia to conduct the walking interviews. Therefore, to increase accessibility to a broader population, the research team decided that social media using Facebook is the best platform to introduce the research and recruit the participants who have been to the site. The Facebook web survey was created because the project is a well-known social media

platform for Malaysians. The flood mitigation project, which has received the award as a World Heritage Site, is essential for national history since it was an important trading port during Portuguese, Dutch, and British occupations. The river is a popular tourist destination for Malaysians of diverse races, ages, and backgrounds. Therefore, the web survey, which was a public profile, would increase access to a broader range of populations across different ages and backgrounds. We also considered conducting an on-site survey with the project visitors; however, the research team members were not based in Malaysia during the research period. In order to increase accessibility and reach to the broader population, the digital social media platform through Facebook web-based survey and the Facebook page for our research, including a post to invite visitors to share their visit experience. The main reason for selecting Facebook as the platform for the web survey is because of several advantages. The web survey offers fresh sampling frames that are otherwise difficult to access (Schneider and Harknett, 2022). It is also acknowledged that society and the engagement with technology have changed, where people are virtually connected (Stern et al.,2014) using social networks. Therefore, using a survey on social media would attract more respondents, which is the second advantage. Thirdly, the social media web survey offers rapid data collection and is more cost-effective than the traditional survey using email links to survey platforms such as the JISC online survey or Google Forms. This approach for data collection would promote more engagement with respondents as many respondents would have social media accounts and may not be familiar with or have no subscription to specific survey tools.

In the first stage of data collection, we does not collect any demographic information or profile data because this stage aims to discover important strands generated by the respondents. Therefore, gender and age demographics of the participants was not considered necessary at this stage as the research aims to find out the activities carried out by the end-users irrespective of profile data. The population bias on the demographics of the platform users was acknowledged, and this is something to consider for future research. This non-probability data may not provide the highest accuracy of the data quality and may induce bias since the participants were sharing the survey with their circle. However, the bias can be eliminated through high-quality data as the data was shared through the intrinsic motivation of the respondents within their own time and not driven by financial interests (Kosinski et al., 2015). The use of Facebook, one of the largest social media networks, is considered one of the effective methods to recruit participants because of its speed in disseminating the survey (Selm and Jankowski,2006) and the potential to reach hard-to-reach participants because of the increase in social media users, it is easier for the participants to respond to the research and convenience to the participants (Kuhne and Zindel, 2020)

The use of Facebook as the platform for the survey is helpful, and it is reported that it helps to dilute the power hierarchy in the participant-research relationship(Edirisingha et al., 2017). As the result, many participants reveal more information about their visit.The web survey will allow an early active data collection to gather the overall experience of the non-probability respondents. There are two main questions posted on social media to ask the public about when they visit Sungai Melaka and their feedback on the visit. The aim of this data collection stage was not about the accuracy of the data; instead, we aimed to get the foresight of the current context about Sungai Melaka to allow us to form the questions for the questionnaire. In this first stage of data collection, we asked the questions about their overall experience of the place by asking them to tell the narrative of their visit. We also asked their thoughts about the threat of flood to the site.

The first stage of data collection aimed to allow the identification of respondents who have the experience of visiting Sungai Melaka and generate rich information about their interest in the data of this study (Palinkas et al., 2015). We conducted the web survey through Facebook during the

pandemic. This web survey also identifies the prospective future respondents for the online questionnaire and interviews. We recruited 140 respondents from the Facebook survey. The respondents must visit Sungai Melaka between 2019 tothe end of 2022. We ran this Facebook post and web survey for nearly three weeks and offered no financial incentives to participate to ensure the authenticity of the nonprobability respondents' feedback. The research also did not track any of the participants. Some of the responses were gathered from snowball sampling. The snowballing sample was observed as some respondents tagged their friends and family to share their experiences about their visit.

Using the feedback from the 140 respondents from the Facebook survey, we have identified the main themes derived based on their experiences of their visit to Sungai Melaka. The main themes from the web survey will become the basis for creating the online questionnaire. Most nonprobability respondents stated their experience of the visit related to the aesthetics of the place, the visual aspects, and the olfactory of the area, including the respondents' feelings during the visit. Due to the nature of the web survey, few respondents provided more significant details about their visit experience. The researcher did not communicate with the nonprobability respondents to avoid influencing the response. In the future, the researchers may need to identify the factors that make the data collection more efficient, such as demographic characteristics (Stern et al.,2017) and the design to evaluate the strategies for recruiting nonprobability context. We also should explore the incentive for participation.

The online interviews aim to understand the project's impact on the visitors. The questions developed for the interviews based on the themes derived from the first stage of data collection, the web survey. The researchers developed the questions for the online interviews to better understand their perspectives of this project, the reasoning for such feedback of the project impact, and their recommendations for improvement. There were twenty questions in total. The first component is about their background and the reasons, including with whom the visitors visit Sungai Melaka. The second component focussed on their experience, including their feelings while there and the activities they did. The last part is about their view of the place, the changes of the place compared to before developments, the benefits of the place to people, the limitations or any recommendations for improvement and their view of the success of flood mitigation.

The responses from the Facebook survey have clarified the central theme to focus on for the online interviews and the recruitment for the interviews. Of the 140 respondents in the Facebook survey, only thirteen could participate in the interviews, while the rest preferred the online questionnaire. We included thirteen interviews and 56 questionnaires in the second stage of the data collection. The questionnaire was designed to have the same questions as the online interviews. The advantage of using the questionnaire was that some respondents provided photos to explain their responses. The respondents also provided feedback that the questionnaire provided time for them to think and reflect on their experience and produced better responses. The extra time for reflection for better response is relevant to findings by Dillman et al.,(1998) that the motivation and cognition of the respondents affect higher quality and accuracy of the responses.

The responses from the participants were analysed using thematic analysis. The interview data and the online questionnaire data were analysed to probe for the content of the meaning of the conversation and detect emerging themes (Joffe,2011). The merging themes were then further analysed and categorised according to the existing framework selected for this study, Church, Fish and Winter's (2014) and O'Brien et al.,(2017) framework. The findings are illustrated in Table 1 and Table 2 in the findings section.

We protected the anonymity of the respondents and data sensitivity in data collection. The research collaborator working at a local university in Malaysia gained ethical approval for this study. We set up the questionnaire to respond to some of the requests made by a few participants. Writing the answers would allow the respondents to recollect the memories of their visit before the pandemic. With the respondents' permission, we used photos to stimulate narrative in the interviews and questionnaires and explore the meanings of their descriptions (Kwasnicka et al., 2015). Using photos for data-prompted interviews allows the respondents to describe their experiences in detail. It enables the researcher to compare and contrast the photos' interpretation derived from the respondents' experience narrative.

Findings

This project holds significant historical and cultural heritage. Sungai Melaka, the river at the heart of the city, carries a rich legacy from Portuguese rule (1511-1641), followed by Dutch occupation (1641-1824), and later British colonisation (1824-1942) (Verhoeven, 1964). Its strategic location provided economic advantages, making Melaka a vital trade and commerce outpost in the Malay Archipelago (Fernando, 2005). As a result, several villages of protected minority ethnic groups, including the Malay-Portuguese "Kristang" community, the "Peranakan Baba" or Strait Chinese community, and the original Malay settlement in Morten Village, formed along the river (Worden, 2001).

The first data collection stage through the Facebook web survey revealed several essential strands. Some of the visitors even shared their photos to explain their experience of the visit. The photos showed that the respondents were interested in being part of the study by willingly sharing their photos to explain their experience. Many of the responses stated the condition of the river before and after the flood mitigation project, the visual and sensory smell along the river and their feeling towards the place.

> *Some areas of the walkway need improved maintenance. For safety purposes,.. an unpleasant smell of the river water. However, it is better than the condition ten years ago..*
>
> *I had a good, memorable experience during the night boat river cruise with my family. We were excited to be able to see a lovely view along the river.*
>
> *Overall, it was VERY BEAUTIFUL experience. We rode the night boat river cruise, which was very comfortable. There were many beautiful murals on the building walls and the houses along the river looked like a show house, but it was an actual house with people living in it. This is hugely different from 2003, which was dirty, smelled, and not beautiful. Now, the project has successfully given me a wonderful experience.#ilovemelaka*
>
> *It's a nice riverwalk at night; it is relatively calm. It was not crowded.*
>
> *Beautiful night view. I was feeling happy and calm.*
>
> *The river needs more cleaning. A stroll in the Morten Village was enjoyable, especially with friends or family who love history, which educates you. The scenery during the day is not as beautiful as night strolling, and I think it was due to the street lighting and lighting along the river.*

The snippets of the responses from the first data collection show the visitors' reviews of the condition of the river before and after the flood mitigation, their feelings during their visit and their overall experience. The web survey also revealed activities the visitors carried out during their visit.

The second stage is the online questionnaire to explore their perspectives on this project, the reasoning for such feedback, and the visitors' recommendations. We also wanted to explore the visitors' interactions with the place by examining their activities, described in the Facebook web survey. Many different types of activities described the interaction of the visitors with the flood mitigation project. The visitors of Sungai Melaka do not have to pay any fee to visit the place. Still, they may have to pay some fee to participate in any practices such as boating, street painting or having a meal at one of the cafes or restaurants located along the river. We identified various activities from the analysis of the interviews and questionnaires. It is vital to capture the post-evaluation feedback from the public as the mechanism of measuring success. However, this research did not utilise Volden and Welde's (2022) six success criteria in analysing this public project. Instead, the research utilised Church, Fish and Winter's (2014) framework and categorisation of activities defined by O'Brien et al.,(2017) to provide the critical approach to conceptually explore the impact of flood mitigation towards the end-users, the visitors. The focus is to evaluate the effect of the visitor's interaction with the Sungai Melaka and analyse it through cultural ecosystem services. O'Brien et al., (2014), Church, Fish and Winter (2014), and Chan et al., (2011) described the process of assessing the benefits of cultural ecosystems as challenging. It is due to a lack of precise interpretation of people's perceptions with its quantitative aspects of measuring the practices that may conflict with the epistemological aspects of interpretative research (O'Brien et al.,2014). However, this review generates a new understanding of evaluating the feedback of the end-users to allow validation or discovery of any value based on visitors' perception of the completed projects. Typically, construction projects are measured based on the intended outcome set by the business case during the early stage of project formation. However, with the changes in people's routines due to COVID-19 restrictions, people's perceptions of the facility may have changed due to shifts in needs and appreciation of the facility.

The practices which described the interaction of the visitors were categorised based on the definition provided by Church, Fish and Winter (2014); 'playing and exercising', 'creating and expressing', 'producing and caring' and 'gathering and consuming' which is shown in Table 1. 'Playing and exercising' were the most mentioned practices and the prevalent practices includes relaxing, boating, playing and being outdoors with children. The second most popular is 'gathering and consuming', such as visiting historic venues, going to cafés and restaurants, and picnicking. The practices the visitors perform are creating and expressing, such as photography; and contributing to arts and culture, such as street painting. These data were collected quantitatively based on visitors' feedback on their practices.

The analysis also found that these benefits were intangible benefits visitors gained from their visit. Although visitors with families received tangible benefits of 'Being physically active outdoors' (Table 1), the effect of 'Playing with children and being outdoors with children' or 'boating' has created intangible benefits for the visitors. The visitors with children expressed their feeling as a "lovely time to spend time with children", "worth time spent", and " peaceful", and the most common response was "memorable experience and children gained knowledge about the history", as shown in Table 2. The project also provides visitors, including the children, with a learning platform. The visitors mentioned "adding history knowledge", "Children gained wonderful knowledge", and "Children love to see the original village, design and architecture of the Morten village houses along the river",

which described the learning benefits of this project. Although the benefits are categorised to the learning capabilities, it also provides identities for the children of knowing the history and heritage.

The respondents also further described the benefits of the flood mitigation project on Sungai Melaka. The majority of the practices and the benefits evidenced in this study focus on the visitors' perception based on their activities and interactions, and no analysis has been done to distinguish the diversity of the visitors with the benefits. The main reasons for the visit were leisure, and most respondents visited with their families. One key aspect of the findings is the positive feedback about the project. Many of the respondents described the physical aspects of the project. The reactions were "calm", "clean", "beautiful", "colourful lights during the night", "good facilities", and "feeling safe". However, some responses reported unpleasant smells from the river, although the visitors said no rubbish was visible.

Further interviews to follow up with the Council members, the smell was due to the nature of the river. The river has a natural bed and contains mud. Due to its location close to the sea, the exact boat ride location is within the estuaries.

Table 1: Grouping practices according to Church, Fish and Winter (2014) and O'Brien et al. (2017) framework. The number of responses was included in the brackets to indicate the number of times the activities that the visitors mentioned in this study.

11									
	Cultural practices								
Church, Fish and Winter (2014) dimension	Playing and exercising				Creating and expressing	Producing and caring	Gathering and consuming		
O 'Brien et al. (2017) dimension for high-level category applied for this paper	Exercising (intense physical activity)	Being physically active outdoors (less intensive activity)	Being outdoors (without necessarily being very active)	Varying levels of physical activity			Tangible products	Intangible products and services	Nature as setting (without further interaction of engagement)
Activity types	Cycling (4)	Walking (16)	Socialising, social activity (6)	Enjoying and experiencing nature	Photography (13)		Picnicking, grilling, BBQ. (3)		Going to a café or restaurant (13)
	Jogging, running (4)	Playing with children and/or being outdoors with children (11)	Viewing nature (1)	Environmental education (4)	Contribute to art and culture e.g., street painting (1)				
	Exercising (4)	Watching nature, birds, wildlife (19)	Sightseeing (29)	Relaxing (18)					Visiting historic venue (16)
		Passing through or passing by (9)	Thinking (5)						

Boating (17)

Identification of impact on cultural benefits

Most of the findings to identify the impact of the project to the cultural benefits were generated from the interviews and online questionnaires. The interviews generated more rich data as many respondents were excited to describe their experience during the visit. Nearly all related experiences were positive.

The interviews revealed a few recurring themes, focusing on the projects' impact or benefits. These quotes are shown in Table 2. The thematic analysis grouped the themes into categories. These categories are similar to those categories in the framework of O'Brien et al.,(2017), which expanded the earlier framework developed by Church, Fish and Winter (2014). Church, Fish and Winter (2014) categorised expertise with well-being into three overarching categories: 'capabilities', 'experiences' and 'identities'. Then, O'Brien et al.,(2017) further define the earlier, 'Learning', 'health' and 'economic' relate to capabilities. 'Social connections ', ' connections to nature and benefits of different types of urban green infrastructure', and 'sensory experience' are described as the element of 'experience'. Then, 'cultural and symbolic' relates to the 'identities.' The qualitative response was recorded in Table 2. Most responses were positive in describing their experience of the visit, the physical aspects of the project and their feeling during and after the visit.

Table 2 Benefits of cultural ecosystem services- i.e. benefits from interactions between environmental facilities and the practices

Categories by Church, Fish and Winter (2014)	Categories by O'Brien et al., (2017)	Quotes from online interviews and semi-structured questionnaires
Capabilities	Learning	Children gained wonderful knowledge
		Learnt about the history of the river and places along the river
		Children love to see the original village, design and architecture of the Morten village houses along the river.
		Increased good knowledge
	Health	Calm
		Relaxing
		Calm and peaceful area, a clean area, but the river is a bit mucky
		Very beautiful to walk along the river
		A memorable experience with children, fun activities for the kids
		Fun and exciting for children
	Economic	Well maintained facility
		good impression to international visitors
		Night boating ride with family- the price for a boat ride can be quite expensive
		Frustrated - too many unnecessary works were done to the surroundings.

		Impressed with the conservation work along the river
Experience	Connection to nature	Watching nature - unforgettable moments
	Sensory experience	Very beautiful, but at times, some unpleasant smells even when during COVID
		Great drawing on the murals, quiet surrounding exceptional delicacy food - Nyonya Peranakan food No shops opened during COVID-19; we had to eat at the hotel. Exciting and beautiful - added value of the history, though the water emits smell during boating very crowded with people
		Night-time visit is better because of the beautiful lights; we went during COVID restriction, Good decoration and effort to make the river project beautiful- but it still has some unpleasant smell
Identities	Cultural and Symbolic	The place is different compared to many years ago

The benefits of 'experience' relate to the 'sensory experience' the visitors feel. Critical feedback from visitors on their visit before and after COVID-19 relaxed restriction is the level of calm and quietness. Visitors chose to visit at night during COVID-19 to avoid crowds, indicating that the level of security and lighting is essential, as one interviewee mentioned, "felt secured because of lighting along the river". Colourful lighting also creates excitement for the children and nice visuals during the night, as the visitors describe. Other interviewers did not realise the noise level until it was so quiet and calm during COVID restrictions. Few visitors complained about the unpleasant smell from the river despite no rubbish, and these were described as pre-Covid and relaxed COVID-19 restrictions. As illustrated in Table 2, sensory experiences such as brightness, sense of smell, hunger, and sound have different impact experiences such as feeling calm, secure, and safe. Respondents only relate their experience to pre-COVID and relaxed COVID-19 restrictions in describing their sensory experience. This research identified the importance of the project's intangible benefits in creating the benefits, and provisions should have been dedicated to creating more awareness to promote more dialogues to create inclusive sustainability in the initial stage of projects.

Perception of the effect of the project on the places and community

We asked the visitors to share their feedback on the modernisation surrounding the area of the flood mitigation project. Amin (2018) suggested that conserving heritage places requires careful consideration of the needs of the residents and the stakeholders and the symbolic meaning of the places to people. However, Amin's (2018) analysis is based on the residents' feedback on the urbanisation of their city by examining the residents' acceptance and opposition, whilst this study

focuses on the reviews and interpretation of the visitors of the flood mitigation project in the historical place. All questionnaire respondents and interviewees accepted the urbanisation surrounding the village and the historical river as the effect on the transformation of the flood mitigation project did not disrupt the heritage of the Sungai Melaka and the surrounding area. We showed some photos during the interviews and asked the respondents to describe their perceptions based on the images. For instance, more than twenty-three respondents stated, "This is the heritage to the younger generations to know their roots and heritage of the place". Then, nine respondents discussed the economic importance of preserving the place. They stated, "preserve the heritage of the people who live in that village to attract tourists", while five respondents described "the house was well preserved, well maintained" and "it is important for the community to maintain and preserve the heritage".

Re-visit the notion of project success.

The current model of project success normally confines the project execution to meeting the targets and overcoming the constraints while meeting the expectations sets by the stakeholders. The community or the facility's users are normally consulted and discussed in the literature as user satisfaction. In this paper, our critical concerns with sustainability and infrastructure use another lens, the lens of the practising users. Tonkin (2015) described that infrastructure encapsulates the labour and the works with the production of material goods with the purpose of main function of transporting services and materials, and it is time to rethink infrastructure as an object that is involved in social interactions and connects or disconnects people, resources, services, materials and goods. Based on the analysis of this case study, it is proven that flood mitigation provides more than the primary functions of an infrastructure to the community. In this case, flood mitigation successfully connects the visitors and the facility infrastructure users with opportunities to practice their cultural practices. These practices reflect what has been described by Angelo and Henschel (2015), which is that the infrastructure performs more than its technical function by integrating the social conventions of the users in building user perception and experience to form a whole picture of the community. The infrastructure's presence can have an impact on the community. We examined the benefits using the Church, Fish and Winter (2014) and O'Brien et al.,(2017) framework in studying the effect of the infrastructure on the interactions between environmental facilities and practices. We acknowledge that this analysis is limited to the visitors' lens, who can be considered as temporary citizens of the place.

Conclusion

In this paper, we have underscored the critical importance of considering the interaction between people and facilities in determining the success of infrastructure projects, with a specific focus on flood mitigation projects in the context of preserving cultural heritage. Our analysis, drawing from previous research (Church, Fish, Winter, 2014; and O'Brien et al., 2017), has highlighted the qualitative and structural dimensions in evaluating such projects.

Our findings emphasise the intangible benefits of flood mitigation projects, particularly their impact on people's well-being, capabilities, health, and overall experience. Although these benefits are

challenging to quantify, they underscore the significance of considering the socio-structural dynamics involving visitors as key stakeholders. We also acknowledge this study's demographical and representational data; however, this study lays a foundation for exploring the relationship between project evaluation and the cultural ecosystem. Future research will delve into the cultural ecosystem benefits experienced by residents and business owners along the river, providing a holistic view of the cultural ecosystem's influence on flood mitigation projects.

One of the key takeaways from our analysis is the need to broaden the definition of project success to include social interactions between users and the infrastructure, who are the visitors of the facility. As the case study demonstrates, the flood mitigation infrastructure functions as a social-technical system that fosters social interactions and enables the practice of cultural traditions. Critical scholars can incorporate these insights into the evaluation of project success.

We recommend that project management research and industry practitioners adopt project evaluation methods that acknowledge and recognise projects' social and human impact through cultural practices. This approach will support sustainable construction and ensure the inclusion of diverse communities in project development. Our results underscore the role of sensory experience in creating project impact and added value. Project teams, including clients, must recognise its importance in promoting sustainable initiatives prioritising people's health, well-being, and community resilience.

In conclusion, our study challenges the conventional definition of project success by considering the interactions between users and infrastructure. This broader perspective encourages a more inclusive approach to sustainable infrastructure development, promoting the well-being and cultural richness of the communities affected by such projects.

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MTMEHWMWGAMAPYSGJ

Title: Re-visit Project Succes-: Evaluation of Visitor Perspectives in the Sungai Melaka Flood Mitigation Project

Abstract:

This study examines the impact of the Sungai Melaka flood mitigation project on community success and explores the concept of project success beyond traditional metrics. By adopting a bottom-up approach and incorporating historical and cultural significance, the research aims to evaluate the project's contribution to cultural well-being, social cohesion, and the preservation of heritage. The flood mitigation infrastructure, situated in the UNESCO World Heritage site of Melaka, Malaysia, has improved living conditions for the community by providing new sanitation systems and protecting historically significant areas from flooding. Additionally, the project has enhanced the economic value of the region by attracting tourists and boosting property values. However, the study seeks to go beyond these tangible outcomes and assess the project's impact on people's interaction with the infrastructure. By capturing local visitors' and communities' perceptions, preferences, and behaviors, the research aims to evaluate the cultural benefits derived from the environment. By incorporating these indicators into the assessment of cultural ecosystem services, the success of the facility can be evaluated based not only on its outputs but also on its contribution to cultural well-being and social cohesion. Through this interdisciplinary study, which integrates diverse community needs and employs innovative research methodologies, the goal is to foster sustainable development that respects and supports the values of all stakeholders involved in the Sungai Melaka flood mitigation project.

Purpose - This interdisciplinary study re-evaluates the Sungai Melaka flood mitigation project's impact on community success in Malaysia's UNESCO World Heritage site, broadening the definition of success considering historical and cultural significance. The research aims to revisit success metrics, focusing on the project's influence on people's interactions, cultural well-being, social cohesion, and heritage preservation.

Design/methodology/approach – This study explored visitors' reviews of their experience visiting Sungai Melaka in several data collection stages. The first data collection involved a web survey posted on Facebook to capture diverse perspectives of the population and grasp the core strand of knowledge to focus on the second data collection, the questionnaire. The final stage involved interviews to generate rich qualitative data.

Findings- The findings revealed that the impact exceeded tangible outcomes since the project impacted people's interactions and practices. The research assesses cultural benefits, incorporating these indicators into evaluating cultural ecosystem services by capturing local visitors' and communities' perceptions, preferences, and behaviours. The findings found that other project success attributes include identities, capabilities, and experience, further defining learning, health, economics, connection to nature, and symbolism.

Originality/value – The research explores the meaning of project success beyond the traditional metrics by capturing success from the users' perspectives and people's interaction and their impact on culture and well-being. The cultural ecosystem services framework used in the study is applied to explore the interactions between people and the facility and its effect on the people.

Keywords: community, cultural ecosystem services, heritage, infrastructure, project success, socio-economy

Paper type : Research paper

~~Keywords: community, heritage, infrastructure, project success, socio-economy~~

Introduction

Operating within a highly susceptible environment influenced by economic and political changes, the construction industry has faced setbacks in productivity due to movement restrictions and lockdowns. This constant disruption brings instability, impacting the construction industry's productivity and profits~~This constant disruption brings instability, which has impacted the industry's value and profits~~. As demands for economic recovery persist, construction projects are facing additional obstacles within limited budgets, timeframes, and quality constraints. Factors such as volatile material prices, irregular labour supply, reduced client investment, and uncertainties stemming from Brexit (particularly in the UK) may further compound these challenges. The industry is in a dilemma with the struggle to meet project parameters and generate satisfactory returns. It must strive to sustain itself in the market while simultaneously meeting the escalating demands for higher investment returns from clients and stakeholders.

It is indisputable that the construction industry has historically played a pivotal role in driving national growth. Nevertheless, the COVID-19 pandemic has presented unprecedented challenges, causing significant disruptions to lives and economies worldwide. Understanding the performance and behaviour of the construction industry requires considering five essential elements: economic and industrial factors, government policy, social and technological change, and internal sector changes. While digital technology has been extensively discussed to improve reliability and performance, it is crucial to recognise that global catastrophic events such as COVID-19 have fundamentally changed people's lives and functional needs. These changes, driven by regulations and altered priorities, necessitate adaptations and retrofits in building and facility designs.

Nevertheless, the fact that digital technology may co-construct, shape and continuously shape people and their practices in leading their lives, it is fundamental that we ~~need to~~ evaluate the impact of the mature infrastructure, which, in this study, the flood mitigation system, access to sanitation, clean water supplies to the community. The evolving needs of the stakeholders and the ambiguity in defining project success may need bespoke metrics depending on the project's location, which heavily relies upon the stakeholders' perception. Ika and Pinto (2022) advocated that the project model of success should be viewed not only on the dimensions between success criteria, business case and green efficacy. The project's success should require some long-term time frame to ensure the benefits are achieved by the client and project team and the shared view of stakeholders (Ika and Pinto, 2022), which may require a considerable amount of time to ensure the project generated the intended benefits to the community. Therefore, there is a crucial need to reflect on the concept of project success, and there is a gap in evaluating the success of the community or the users of the infrastructure facility on how the facility or the infrastructure creates resilience for the community. The case from Sungai Melaka, presented in this paper, firstly exemplified the fluidity of the flood mitigation project, which follows the Foucaldian scholarship where infrastructure is a complex combination of objects, persons and practices (Simone~~,~~ 2004). This technological/ architectural apparatus supported society~~, and it~~ and reproduced and reconfigured every day. Therefore, assessing project success requires re-examining current feedback mechanisms to capture these missing elements and inform sustainable changes for the future. Moreover, with the growing

demand for construction activities, it becomes imperative to consider sustainable approaches that enhance community value as part of the recovery plan.

The industry's role is pivotal in enhancing the value of a location by providing opportunities to uplift the community. The delivery of opportunity can be achieved through various means, such as the construction process, supporting local businesses, generating employment opportunities (aligned with SDG8: decent work and economic growth), and fostering economic activities in the surrounding areas. Moreover, the completion of a facility facilitates people's mobility and contributes to long-term financial gains, aligning with SDG9: Industry, innovation and ~~infrastructure~~Infrastructure, as well as SDG11: Sustainable Cities and Communities. As a result, it becomes crucial for construction industry professionals to contemplate how these facilities can foster cohesion~~, foster~~ positive growth~~,~~ and promote socioeconomic mobility within society.

This interdisciplinary study focuses on the impact of the flood mitigation project of Sungai Melaka, which was constructed in 2002 and completed in 2014. The flood mitigation infrastructure is situated in the historic city of Melaka, a UNESCO World Heritage site. Initiated by the Melaka State Government and the Historical Melaka City Council, this flood mitigation project aims to protect communities living along the river by intercepting all the sewer discharges into the river by building a new network of sanitation works, to create river embankment by making it a landscaped river walks and protecting the villagers of the historical significance of Morten Village from flooding by constructing the stormwater pump to prevent flooding and tidal inundation, while preserving heritage artefacts along the river. The project has improved the community living conditions, such as building new sanitation systems; the project envisions uplifting the resilience and well-being of Morten Village's communities. The venue holds immense historical value and attracts visitors from Malaysia and beyond. It encompasses diverse heritage and history, with the river flowing through precious artefacts dating back to the Portuguese, Dutch, and British occupations. The strategic location of Sungai Melaka has historically contributed to Melaka's economic advantage as a trade and commerce hub in the Malay Archipelago. As a result of this infrastructure, the venue has become a tourist attraction with the award for UNESCO World Heritage Site, which has driven the property values and created an economic stream for the community and the state.

This study aims to re-visit the metrics of project's success to include the project's impact on people based on people's interaction with the project. We wish to extend Simone's (2004) notions on establishing people's collaboration with project infrastructure~~infrastructure~~ by identifying people's interaction with the ~~infrastructure~~project and connecting the link of~~dots~~ ~~with~~ project success with the notion ~~on~~ of how infrastructure would contribute to the community practices as the feedback mechanism loop to inform the future decision making and ~~by informing~~ future planning. This can be achieved ~~by~~ ~~understanding~~ the evolving needs of diverse communities, including visitors, to emphasise the importance of gathering feedback from the correct group of stakeholders for their specific needs (Davis,2016). This particular study is a bottom-up study that involves the designation of feedback on the project's success to local visitors and communities by granting freedom and leverage for the communities to voice their views about the project's success. In particular, the research aimed to capture people's perceptions, preferences, and behaviours related to the cultural benefits they derive from the environment. By integrating these indicators into the cultural ecosystem services assessment, a facility within a place or environment's success can be evaluated not only based on its facility outputs but also on its contribution and impact on cultural well-being, social cohesion, and the preservation of cultural heritage. By incorporating historical and cultural significance, understanding diverse community needs, and employing innovative research

methodologies, this project aims to foster sustainable development that respects and supports the values of all stakeholders involved.

At this stage, we focussed on visitors' perspectives and sensory experiences of the place, pre and post-COVID-19, to capture the historic and aesthetic value of Sungai Melaka. The research employs online qualitative surveys, interviews, and questionnaires to gather data. Photography is used as a research tool to encourage conversation during the interview and enhance analysis, including the researcher's ~~and~~ interpretation of the qualitative data. The findings shed light on community and visitor perceptions of the flood mitigation project and their aspirations for the future built environment, considering the impact of urbanisation on local communities, including minority ethnic groups. Instead of solely relying on professional practices to capture visitors' needs, the study acknowledges the importance of identifying intrinsic worth related to the place's culture and historic and aesthetic value. It recognises that community values are not fixed but fluid, shaped by individuals' perceptions and appreciation (Jones, 2017).

The long-term aim is to guide decision-making processes and promote sustainable development aligned with stakeholders' values. The first is to evaluate the interaction between people and the facilities. We decided to evaluate visitors' practices with the cultural ecosystem services(CES) using the framework developed by the formative work of Fish, Church and Winter (2014). Applying the framework aims to allow more inclusive and holistic approaches to measuring the intangible aspects of the facilities' success. Usually, the cultural ecosystem services analysis is applied to analyse the human-ecosystem relationship (Chan et al., 2012). However, Chan et al., (2012) argued that there is a lack of clarity in determining the value generated for environmental decision-making due to personal preferences regarding their experience, expertise, appreciation, ~~(2012) argued that there is a lack of clarity in determining the value generated for environmental decision-making due to personal preferences of their experience, expertise, appreciation~~ and experiences. The cultural ecosystem services framework identifies the people's interaction with the environment and the cultural activities undertaken while interacting with the ecosystem. The framework highlighted the importance of spaces as the platform for the activities, and these activities have impacted ~~impact~~ the areas.

Although the concept of measuring the interaction of people and spaces may not entirely be familiar within the construction practices, there is an opportunity to evaluate people's interaction with the facility as part of project evaluation, which will, in turn, be part of project development and planning for the next project. It demonstrates the impact of the end-user and their interaction with the facility. It bridges the engagement between the stakeholders of the project and the community, which will shape the future of the next project.

Deconstructing project success: Linking to people practices

The focus of a project and its definition of success across various project types suggests three main qualifiers: meeting the targeted budget, delivering within time and achieving the required standard set by the client and various project regulations, including the stakeholders in the project (De Wit, 1998; Baccarini, 1999). These targets are selected based on the project objectives, which construe the project context, its priorities and the desired metrics of successes ~~indicator~~ indicators to measure the project's performance (Morris, 2013a) ~~**(insert ref).**~~ While these project objectives, which determine the project's success, have the quantitative qualifier of meeting cost, time and quality, this interpretation of a successful project is not confined to the success of managing the perturbations, uncertainty and disturbances in projects.

Project delivery encompasses fulfilling contractual obligations by providing clients with expected outcomes, targets, and aspirations. However, achieving successful project outcomes requires a clear understanding of project requirements and effective management of information to minimise uncertainty (Winch, 2001). While advanced technologies like Building Information Modelling, augmented and virtual reality, digital twins, and simulations can enhance decision-making and offer clarity to inform~~ed~~ clients and stakeholders, less experienced parties may struggle to benefit from these advancements due to a lack of transparency in their needs and priorities. Learning from past successes and failures and leveraging information from previous projects presents an opportunity to improve future endeavours; thus, it is essential to consider another element to include for evaluating the success (Atkinson, 1999).

~~Following Jacques Derrida's (1967) terminology of deconstruction, Morris's proposition for the value-driven approach to delivering the project proposed that practitioners deconstruct the meaning of project management success by dissecting the elements in project delivery. Morris (2013) unpacked the project processes into three primary levels: level 1 is the technical core, while level 2 is the strategic view of the project with the stakeholders to capture the project strategic aspects into the project delivery. Level 3 refers to the long-term project and the organisation within the environment. Morris further the discussion with Terry Cooke-Davies the three levels of success to the correct project execution, the project meeting its institutional success and all necessary and unique criteria for project success are delivered.~~

In alignment with Jacques Derrida's concept of deconstruction, Morris (2013b) proposed a value-driven approach to project delivery that involves dissecting the components of project management success to understand its underlying meanings better. Morris's framework breaks down project processes into three primary levels: Level 1 pertains to the technical core, Level 2 encompasses the strategic perspective of the project, incorporating stakeholder considerations into project delivery, and Level 3 extends to the long-term impact of the project within the broader organisational and environmental context.

Although Pinto and Slevin's (1987) project success criteria were examined from the perspectives of the organisational behaviour, the metrics did not explicitly describe the end users' feedback on the success. Samset and Volden (2016) aligned with Morris's (2013b) notion of examining the project's success by focusing on its tactical and strategic aspects and evaluating the project and its impact on society. It is also essential to examine the correct evaluation of success from various stakeholders' perspectives because different groups hold different perceptions of success (Davis, 2017).

Moreover, Morris(2013a) engaged in a discourse with Terry Cooke-Davies (2002), expanding on the three levels of success. They argued that success in project management entails three key aspects: ensuring correct project execution, meeting institutional success criteria, and delivering all necessary and unique criteria specific to the project's success. It is a clear gap showing the element of culture and the activities undertaken by the end users while using the facility, and its effect on the end users were not sufficiently highlighted.

Understanding the performance and behaviour of the construction industry requires considering five essential elements: economic and industrial factors, government policy, social and technological change, and internal sector changes. While digital technology has been extensively discussed to improve reliability and performance, it is crucial to recognise that global catastrophic events such as COVID-19 have fundamentally changed people's lives and functional needs. These changes, driven by regulations and altered priorities, necessitate adaptations and retrofits in building and facility designs. It is clear from the discussion above that we seldom re-visit the project's success after a

certain period, although a project has a long life span (Shenhar et al., 1997; Baccarini, 1999; Shenhar et al., 1997). With the transformation of the changing nature of people's routines and lifestyles, increased reliance on improved technology and demand for more sustainable practices to combat climate change through regulations and policies may have altered the definition and requirement needed for project success. The external factors, such as the political drivers and pandemic, may instigate how people perceive the importance of infrastructure and buildings to them, and these changes trigger the academics and industry professionals to re-evaluate the notion of changing technology and demand for more sustainable practices to combat climate change through regulations and policies, including external factors such as the political drivers and pandemic, may require a re-evaluation of project success.

The economy, environment, and society are interconnected components that strive for balance (Ddu Plessis, 2000; Giddings et al., 2002). While separating these components may grant autonomy to each aspect, determining which part takes priority becomes challenging. Although separating them allows for focused technical solutions, it is crucial to consider their collective impact on society, policy, and the stakeholders involved. The COVID-19 pandemic has highlighted a shift in people's needs and priorities regarding their interaction with nature and built environments. Prioritising human health and well-being has become a primary goal during the project definition stage. Setting project targets also relies upon the needs of society and the link with the socio-technical landscape in which society is currently living (Rip and Kemp, 1997). Usually, the project targets are is typicallyusually based on realistic objectives considering the project's context, priorities, and desired success metrics. The evolving interaction between society and the technology in the buildings or infrastructures forms the dynamic that requires a change to the measurement of the performance in considering its project success. Various evaluation methods exist to assess project effectiveness and efficiency. However, not all project information can be effectively quantified using metrics alone, necessitating qualitative assessments (Kumaraswamy and Thorpe, 1996). To evaluate sustainability, quantitative tools employing established criteria play a crucial roleQuantitative tools have specific expectations and targets to achieve for the construction projects. . For instance, sustainability rating systems such as BREEAMBREEAM, LEED, WELL Building Standard, Passivhaus Standard, Green Star, and Pearl offer a range of metrics for assessing sustainability within digital technologies.

The economy, environment, and society are interconnected components that strive for balance (du Plessis, 2000; Giddings et al., 2002). While separating these components may grant autonomy to each aspect, determining which part takes priority becomes challenging. Although separating them allows for focused technical solutions, it is crucial to consider their collective impact on society, policy, and the stakeholders involved. The COVID-19 pandemic has highlighted a shift in people's needs and priorities regarding their interaction with nature and built environments. Prioritising human health and well-being has become a primary goal during the project definition stage.

Literature discussing the pre- and post-COVID construction world primarily focuses on topics such as on-site health and safety (Olanrewaju et al., 2021), mental health among workers (Wang et al., 2021), cash flow management, project completion, and labour supply continuity (Sierra, 2022), as well as business performance and decision-making supported by modelling techniques (Shehadeh et al., 2022). Most literature exploring people's interaction with infrastructure is within urban studies. In urban planning, there iUrban planning has a growing emphasis on the importance of places for people. Scholars like Megahed and Ghoneim (2020) advocate for incorporating lessons learned from COVID-19 into urban planning processes and collaborating with communities to achieve desired benefits. Gehl (2020) highlights the significance of people's perceptions of places through surveys conducted in four Danish cities. Honey-Roses et al., (2020) discuss the uncertainties associated with

designing public spaces post-pandemic. Balancing physical, social, emotional, economic, and intergroup dynamics within communities during decision-making processes is essential to ensure the delivery of valuable spaces. Transforming cities and places through built environment activities involves multiple actors, and aligning their perspectives with changes in people's behaviour and perception is critical. While careful consideration through design and planning is well-established in transforming cities and spaces, linking the impact of these changes on people and delivering project success to users, clients, and stakeholders requires further exploration.

People, historic cities and infrastructures

The aesthetics of urban cities are the product of a rich tapestry of time and tradition, shaped by careful consideration of the natural properties of a place (Burchard, 1957). However, ~~there remains limited research exploring~~limited research remains on the profound impacts of urbanisation on local communities (Ismail and Baum, 2006; Samat et al., 2014), particularly within World Heritage Sites (WHS) and minority communities. Many historic cities in urban centres face significant vulnerabilities due to the effects of urbanisation. These challenges include shifts in population structure, the erosion of distinctive townscapes, the transformation of traditional architecture into modern facilities, and large-scale reconstruction efforts (Shamsuddin and Sulaiman, 2002; Amin, 2018; Wan Ismail, 2018).

The disruption of the modern landscape is evident in the proliferation of office tower blocks, hotels, serviced apartments, and expansive shopping complexes. Unfortunately, these developments often render historic and traditional buildings economically unviable, leaving them neglected due to insufficient financial resources (Tweed and Sutherland, 2007; Van and Haraguchi, 2010; Bandarin and Van, 2015; ~~Wan Ismail, 2018;~~ Idid and Ossen, 2013; Said et al., 2013; Wan Ismail, 2018). Consequently, these challenges pose a substantial threat to the sustainability of cultural tourism, particularly in destinations that rely on culture-based tourism (CBT), as they endanger the preservation of sites and their authenticity, leading to cultural degradation.

Modernising the buildings and their surroundings will affect the people who live or visit the place. Angelo and Hentschel (2015) posed a serious question about which construction professionals should be concerned about whether the infrastructure makes people or people make the infrastructures. Infrastructure should be a collective consumption(Tonkiss,-2015); however, people's classes may have privileges compared to others. There is compelling evidence indicating a significant shift in the spatial distribution of the population, with rural and peri-urban areas, such as Morten village in Malaysia, experiencing an exodus of inhabitants to other urban areas. This demographic transformation has profound implications for the ~~affected communities' identity, cultural values, and lifestyle~~ identity, cultural values, and lifestyles of the affected communities. Urbanisation has brought about a considerable alteration in these communities' social and demographic fabric, primarily driven by youth migration, thereby jeopardising the continuity of culture-based tourism in the future. Sustainable tourism studies by Bandarin and Van (2012), Guzman et al.,-(2018), and Riganti (2017) support this view, highlighting concerns about the impact of rapid changes, including youth migration, technological advancements, and the growing demand for modern lifestyles, on the cultural values, attitudes, behaviours, and engagement of these communities in tourism, ultimately posing risks to the sustainability of their cultural heritage.

Through this project, all communities residing along Sungai Melaka should benefit economically from tourism and other activities. However, given the diverse needs of different neighbourhoods, including visitors, it is crucial to identify and evaluate individual and collective needs to measure the project's success~~.~~. This evaluation process will inform future planning during the early stages of

project development, accounting for changing community needs and defining success from a resilient perspective. However, the changes resulting from the pandemic may further reshape the cultural values of these communities, and the decrease in visitor numbers might create a serene sanctuary for the residents to cherish and protect their heritage.

Research setting and methods: Impact of flood mitigation infrastructure on visitors

Epistemologically, this research led through interpretivism lenses examining the ontological of the social constructivists' research. This research uses the case study on Sungai Melaka as the primary research approach. To keep the research data's originality and obtain the actual input from the visitors, we collected empirical data through a social media web survey using Facebook, then used the feedback from the web survey to form online interviews or qualitative questionnaires to the visitors of Sungai Melaka. Figure 1 shows the illustration of the data collection process.

Stage 1	1.1. Create a Facebook webpage for this research topic. 1.2.Create a post to advert our research in Facebook to advertise our research aim and invitation to public who has visited Sungai Melaka 1.3 The first post is aim to explore their generic feedback of the visit and the time of the visit	Justification: 1.1) Web-survey on Facebook allow fresh sampling frame for wider access of respondents (Scheneider and Harknett, 2022), rapid responses and recruitment due to society and engagement with technology (Stern et al., 2014) and effective access for respondents to participate 1.2) Aim of the first post is to explore current context of Sungai Melaka to form the questionnaire and generate public interest to participate in the questionnaire survey.
Stage 2	2.1. There are more than 140 responses to our first post on Facebook from the visitor and their feedback of the visit. Some respondents shared their photos of their visit. 2.2 Themes derived from the responses were analysed to develop questions for questionnaire using the framework by Church, Fish, Winter, 2014; and O'Brien et al., 2017 2.3 The aim of the questionnaire is to evaluate end users/ the visitors feedback about the project and its links towards project success. 2.4.Criteria : all visits must be conducted between 2019-2022. 2.5 No demographic data collected at this stage of research. 2.6 The survey was conducted over 3 weeks, no financial incentive and no tracking of participants.	Outcome: 2.1) All 140 responses in the earlier post happy to participate in the questionnaires and only 56 survey met the criteria for selection. 2.2) Some respondents prefer interviews and we conducted 13 interviews
Stage 3	3.1. Quantitative analysis on the questionnaires and qualitative analysis on the qualitative feedback 3.2 Thematic analysis on the interviews data 3.3 Cross analysis of the questionnaire data and the interview data	Outcome: 3.1) Data were analysed using the framework identified and the framework is updated (refer Table 1 and Table 2) 3.2) Draw some analysis to form conclusion

Figure 1: Data collection process

The first data collection stage started with the social media Facebook through a web survey to advertise our research and the research's aim and the social media post acted as an invitation ~~invite~~ to the public who ~~have~~ had visited Sungai Melaka. Initially, the research team planned to conduct a walking interview with the visitors of Sungai Melaka to get their experience and their views on how the river mitigation project impacts the historical site. The walking interview is considered one of the best methods to capture views and experiences of a place through the sensory experience of the individuals of the place (Adam and Guy, 2007). Walking interviews expose both the researcher and the respondent to the multi sensory experience of the place, generating more specific place data than sedentary data collection (Evans and Jones, 2011). However, none of the researchers in the team were locally based in Peninsular Malaysia to conduct the walking interviews. Therefore, to

increase accessibility to a broader population, the research team decided that social media using Facebook is the best platform to introduce the research and recruit the participants who have been to the site. The Facebook web survey was created because the project is a well-known social media platform for Malaysians. The flood mitigation project, which has received the award as a World Heritage Site, is essential for national history since it was an important trading port during Portuguese, Dutch, and British occupations. The river is a popular tourist destination for Malaysians of diverse races, ages, and backgrounds. Therefore, the web survey, which was a public profile, would increase access to a broader range of populations across different ages and backgrounds. We also considered conducting an on-site survey with the project visitors; however, the research team members were not based in Malaysia during the research period. In order to increase accessibility and reach to the broader population, the digital social media platform through Facebook web-based survey ~~We created a Facebook web~~ and the Facebook page for our research, including ~~and~~ a post to invit~~eing~~ visitors to share their visit experience. The main reason for selecting Facebook as the platform for the web survey is because of several advantages. The web survey offers fresh sampling frames that are otherwise difficult to access (Schneider and Harknett, 2022). It is also acknowledged that society and the engagement with technology have changed, where people are virtually connected (Stern et al.,2014) using social networks. Therefore, using a survey on social media would attract more respondents, which is the second advantage. Thirdly, the social media web survey offers rapid data collection and is more cost-effective than the traditional survey using email links to survey platforms such as the JISC online survey or Google Forms. This approach for data collection would promote more engagement with respondents as many respondents would have social media accounts and may not be familiar with or have no subscription to specific survey tools.

In the first stage of data collection, ~~W~~we do~~es~~ not collect any demographic information or profile data because this stage aims to discover important strands generated by the respondents~~.~~. Therefore, ~~we were unable to identify the~~ gender and age demographics of the participants was not considered necessary at this stage as the research aims to find out the activities carried out by the end-users irrespective of profile data. The population bias on the demographics of the platform users was acknowledged, and this is something to consider for future research. This non-probability data may not provide the highest accuracy of the data quality~~,~~ and may induce bias since the participants were sharing the survey with their circle. However, the bias can be eliminated through high-quality data as the data was shared through the intrinsic motivation of the respondents within their own time and not driven by financial interests (Kosinski et al., 2015). ~~but~~ The use of Facebook, one of the largest social media networks, is considered one of the effective methods to recruit participants because of its speed in disseminating the survey (Selm and Jankowski,2006) and the potential to reach hard-to-reach participants because of the increase in social media users, it is easier for the participants to respond to the research and convenience to the participants (Kuhne and Zindel, 2020)

The use of Facebook as the platform for the survey is helpful, and it is reported that it helps to dilute the power hierarchy in the participant-research relationship(Edirisingha et al., 2017). As the result, many participants reveal more information about their visit.~~t~~The web survey will allow an early active data collection to gather the overall experience of the non-probability respondents. There are two main questions posted on social media to ask the public about when they visit Sungai Melaka and their feedback on the visit. The aim of this data collection stage was not about the accuracy of the data; instead, we aimed to get the foresight of the current context about Sungai Melaka to allow us to form the questions for the questionnaire. In this first stage of data collection, we asked the questions about their overall experience of the place by asking them to tell the narrative of their visit. We also asked their thoughts about the threat of flood to the site.

The first stage of data collection aimed to allow the identification of respondents who ~~has~~ have the experience of visiting Sungai Melaka and generate rich information about their interest in the data of this study (Palinkas et al.,~~ -~~2015). We conducted the web survey through Facebook during the pandemic. This web survey also identifies the prospective future respondents for the online questionnaire and interviews. We recruited 140 respondents from the Facebook survey. The respondents must visit Sungai Melaka between 2019 to ~~to~~ the end of 2022. We ran this Facebook post and web survey for nearly three weeks and offered no financial incentives to participate to ensure the authenticity of the nonprobability respondents' feedback. The research also did not track any of the participants. Some of the responses were gathered from snowball sampling. The snowballing sample was observed as some respondents tagged their friends and family to share their experiences about their visit.

Using the feedback from the 140 respondents from the Facebook survey,~~ ,~~ we have identified the main themes derived based on ~~from~~ their experiences of their visit to Sungai Melaka. The main themes from the web survey will become the basis for creating the online questionnaire. Most nonprobability respondents stated their experience of the visit related to the aesthetics of the place, the visual aspects, and the olfactory of the area, including the respondents' feelings during the visit. Due to the nature of the web survey, few respondents provided more significant details about their visit experience. The researcher did not communicate with the nonprobability respondents to avoid influencing the response. In the future, the researchers may need to identify the factors ~~to make the data collection more efficient~~that make the data collection more efficient, such as demographic characteristics (Stern et al.,~~ -~~2017) and the design to evaluate the strategies for recruiting nonprobability context. We also should explore the incentive for participation.

The online interviews aim to understand the project's impact on the visitors. The questions developed for the interviews based on ~~Using~~ the themes derived from the first stage of data collection, the web survey~~,~~. ~~T~~the researchers developed the questions for the online interviews to understand their perspectives of this project betterhe researchers developed the questions for the online interviews to better understand their perspectives of this project, the reasoning for such feedback of the project impact, and their recommendations~~, the reasoning for such feedback, and their recommendation~~ for improvement. There were twenty questions in total. The first component is about their background~~,~~ and the reasons, including with whom the visitors visit Sungai Melaka. The second component focussed on their experience, including their feelings while there and the activities they did. The last part is about their view of the place, the changes of the place compared to before developments, the benefits of the place to people, the limitations or any recommendations for improvement and their view of the success of flood mitigation.

The responses from the Facebook survey have clarified ~~with us clarity on~~ the central theme to focus on for the online interviews and the recruitment for the interviews. Of the 140 respondents in the Facebook survey, only thirteen could participate in the interviews, while the rest preferred the online questionnaire. We included thirteen interviews and 56 questionnaires in the second stage of the data collection. The questionnaire was designed to have the same questions as the online interviews. The advantage of using the questionnaire was that some respondents provided photos to explain their responses. The respondents also provided feedback that the questionnaire provided time for them to think and reflect on their experience and produced better responses. The extra time for reflection for better response is relevant to findings by Dillman et al.,(1998) that the motivation and cognition of the respondents affect higher quality and accuracy of the responses.

The responses from the participants were analysed using thematic analysis. The interview data and the online questionnaire data were analysed to probe for the content of the meaning of the

conversation and detect emerging themes (Joffe,2011). The merging themes were then further analysed and categorised according to the existing framework selected for this study, Church, Fish and Winter's (2014) and O'Brien et al.,(2017) framework. The findings are illustrated in Table 1 and Table 2 in the findings section.

We protected the anonymity of the respondents and data sensitivity in data collection. The research collaborator working at a local university in Malaysia gained ethical approval for this study. We set up the questionnaire to respond to some of the requests made by a few participants. Writing the answers would allow the respondents to recollect the memories of their visit before the pandemic. With the respondents' permission, we used photos to stimulate narrative in the interviews and questionnaires and explore the meanings of their descriptions (Kwasnicka et al., 2015). Using photos for data-prompted interviews allows the respondents to describe their experiences in detail ~~and~~. It enables the researcher to compare and contrast the ~~interpretation of the photos derived from the narrative of the respondents' experienc~~photos' interpretation derived from the respondents' experience narrative.

Findings

This project holds significant historical and cultural heritage. Sungai Melaka, the river at the heart of the city, carries a rich legacy from Portuguese rule (1511-1641), followed by Dutch occupation (1641-1824), and later British colonisation (1824-1942) (Verhoeven, 1964). Its strategic location provided economic advantages, making Melaka a vital trade and commerce outpost in the Malay Archipelago (Fernando, 2005). As a result, several villages of protected minority ethnic groups, including the Malay-Portuguese "Kristang" community, the "Peranakan Baba" or Strait Chinese community, and the original Malay settlement in Morten Village, formed along the river (Worden, 2001).

The first data collection stage through the Facebook web survey revealed several essential strands. Some of the visitors even shared their photos to explain their experience of the visit. The photos showed that the respondents were interested in being part of the study by willingly sharing their photos to explain their experience. Many of the responses stated the condition of the river before and after the flood mitigation project, the visual and sensory smell along the river and their feeling towards the place.

> *Some areas of the walkway need improved maintenance. For safety purposes,.. an unpleasant smell of the river water. However, it is better than the condition ten years ago..*
>
> *I had a good, memorable experience during the night boat river cruise with my family. We were excited to be able to see a lovely view along the river.*
>
> *Overall, it was VERY BEAUTIFUL experience. We rode the night boat river cruise, which was very comfortable. There were many beautiful murals on the building walls and the houses along the river looked like a show house, but it was an actual house with people living in it. This is hugely different from 2003, which was dirty, smelled, and not beautiful. Now, the project has successfully given me a wonderful experience.#ilovemelaka*
>
> *It's a nice riverwalk at night; it is relatively calm. It was not crowded.*
>
> *Beautiful night view. I was feeling happy and calm.*

The river needs more cleaning. A stroll in the Morten Village was enjoyable, especially with friends or family who love history, which educates you. The scenery during the day is not as beautiful as night strolling, and I think it was due to the street lighting and lighting along the river.

The snippets of the responses from the first data collection show the visitors' reviews of the condition of the river before and after the flood mitigation, their feelings during their visit and their overall experience. The web survey also revealed activities the visitors carried out during their visit.

The second stage is the online questionnaire to explore their perspectives on this project, the reasoning for such feedback, and the visitors' recommendations. We also wanted to explore the visitors' interactions with the place by examining their activities, described in the Facebook web survey. Many different types of activities described the interaction of the visitors with the flood mitigation project. The visitors of Sungai Melaka do not have to pay any fee to visit the place ~~but may~~. Still, they may have to pay some fee to participate in any practices such as boating, street painting or having a meal at one of the cafes or restaurants located along the river. We identified various activities from the analysis of the interviews and questionnaires. It is vital to capture the post-evaluation feedback from the public as the mechanism of measuring success. However, this research did not utilise Volden and Welde's (2022) six success criteria in analysing this public project. Instead, the research utilised Church, Fish and Winter's (2014) framework and categorisation of activities defined by O'Brien et al., (2017) ~~used this paper~~ to provide the critical approach to conceptually explor~~e~~ing the impact of flood mitigation towards the end-users, the visitors. The focus is to evaluate the effect of the visitor's interaction with the Sungai Melaka and analyse it through cultural ecosystem services. O'Brien et al., (2014), Church, Fish and Winter (2014) ~~and Chan et al. (2011) described the process of assessing the cultural ecosystem benefit~~, and Chan et al., (2011) described the process of assessing the benefits of cultural ecosystems as challenging. It is due to a lack of precise interpretation of people's perceptions with its quantitative aspects of measuring the practices that may conflict with the epistemological aspects of interpretative research (O'Brien et al., 2014). However, this review generates a new understanding of evaluating the feedback of the end-users to allow validation or discovery of any value based on visitors' perception of the completed projects. Typically, construction projects are measured based on the intended outcome set by the business case during the early stage of project formation. However, with the changes in people's routines due to COVID-19 restrictions, people's perceptions of the facility may have changed due to shifts in needs and appreciation of the facility.

The practices which described the interaction of the visitors were categorised based on the definition provided by Church, Fish and Winter (2014); 'playing and exercising', 'creating and expressing', 'producing and caring' and 'gathering and consuming' which is shown in Table 1. 'Playing and exercising' were the most mentioned practices and the prevalent practices includes relaxing, boating, playing and being outdoors with children. The second most popular is 'gathering and consuming', such as visiting ~~the historic venue, going to café and restaurants~~ historic venues, going to cafés and restaurants, and picnicking. The ~~least~~ practices the visitors perform are creating and expressing, such as photography; ~~practices the visitors perform are creating and expressing, such as photography~~ and contributing to arts and culture, such as street painting. These data were collected quantitatively based on visitors' feedback on their practices.

The analysis also found that these benefits were intangible benefits visitors gained from their visit. Although visitors with families received tangible benefits of 'Being physically active outdoors' (Table 1), the effect of 'Playing with children and being outdoors with children' or 'boating' ~~have~~ has created intangible benefits for the visitors. The visitors with children expressed their feeling as a

"lovely time to spend time with children", "worth time spent", "and " peaceful", and significantly the most common response was "memorable experience and children gained knowledge about the history", as shown in Table 2. The project also provides visitors, including the children, with a learning platform. The visitors mentioned "adding history knowledge", "Children gained wonderful knowledge", and "Children love to see the original village, design and architecture of the Morten village houses along the river", which described the learning benefits of this project. Although the benefits are categorised to the learning capabilities, it also provides identities for the children of knowing the history and heritage.

The respondents also further described the benefits of the flood mitigation project on Sungai Melaka. The majority of the practices and the benefits evidenced in this study focus on the visitors' perception based on their activities and interactions, and no analysis has been done to distinguish the diversity of the visitors with the benefits. The main reasons for the visit were leisure, and most respondents visited with their families. One key aspect of the findings is the positive feedback about the project. Many of the respondents described the physical aspects of the project. The reactions were "calm", "clean", "beautiful", "colourful lights during the night", "good facilities", and "feeling safe". However, some responses reported unpleasant smells from the river, although the visitors said no rubbish was visible.

Further interviews to follow up with the Council members, the smell was due to the nature of the river. The river has a natural bed and contains mud. Due to its location close to the sea, the exact boat ride location is within the estuaries.

Table 1: Grouping practices according to Church, Fish and Winter (2014) and O'Brien et al. (2017) framework. The number of responses was included in the brackets to indicate the number of times the activities that the visitors mentioned in this study.

11									
	Cultural practices								
Church, Fish and Winter (2014) dimension	Playing and exercising				Creating and expressing	Producing and caring	Gathering and consuming		
O 'Brien et al. (2017) dimension for high-level category applied for this paper	Exercising (intense physical activity)	Being physically active outdoors (less intensive activity)	Being outdoors (without necessarily being very active)	Varying levels of physical activity			Tangible products	Intangible products and services	Nature as setting (without further interaction of engagement)
Activity types	Cycling (4)	Walking (16)	Socialising, social activity (6)	Enjoying and experiencing nature	Photography (13)		Picnicking, grilling, BBQ. (3)		Going to a café or restaurant (13)
	Jogging, running (4)	Playing with children and/or being outdoors with children (11)	Viewing nature (1)	Environmental education (4)	Contribute to art and culture e.g., street painting (1)				
	Exercising (4)	Watching nature, birds, wildlife (19)	Sightseeing (29)	Relaxing (18)					Visiting historic venue (16)
		Passing through or passing by (9)	Thinking (5)						

Boating (17)

Identification of impact on cultural benefits

Most of the findings to identify the impact of the project to the cultural benefits were generated from the interviews and online questionnaires. The interviews generated more rich data as~~These findings relate to the second component of the interview and questionnaire questions. During the interviews,~~ many respondents were excited to describe their experience during the visit. Nearly all related experiences were positive.

The interviews revealed a few recurring themes, focusing on the projects' impact or benefits. These quotes are shown in Table 2. The thematic analysis grouped the themes into categories. These categories are similar to those categories in the framework of O'Brien et al.,(2017), which expanded the earlier framework developed by Church, Fish and Winter (2014). Church, Fish and Winter (2014) categorised expertise with well-being into three overarching categories: 'capabilities', 'experiences' and 'identities'. Then, O'Brien et al.,~~-~~(2017) further define the earlier,~~-~~ 'Learning', 'health' and 'economic' relate~~s~~ to capabilities. 'Social connections ', ~~connections to nature and benefits of different types of urban green infrastructure', and 'sensory experience' described~~' connections to nature and benefits of different types of urban green infrastructure', and 'sensory experience' are described as the element of 'experience'. Then, 'cultural and symbolic' relates to the 'identities.' The qualitative response was recorded in Table 2. Most responses were positive in describing their experience of the visit, the physical aspects of the project and their feeling during and after the visit.

Table 2 Benefits of cultural ecosystem services- i.e. benefits from interactions between environmental facilities and the practices

Categories by Church, Fish and Winter (2014)	Categories by O'Brien et al., (2017)	Quotes from online interviews and semi-structured questionnaires
Capabilities	Learning	Children gained wonderful knowledge
		Learnt about the history of the river and places along the river
		Children love to see the original village, design and architecture of the Morten village houses along the river.
		Increased good knowledge
	Health	Calm
		Relaxing
		Calm and peaceful area, a clean area, but the river is a bit mucky
		Very beautiful to walk along the river
		A memorable experience with children, fun activities for the kids
		Fun and exciting for children
	Economic	Well maintained facility
		good impression to international visitors
		Night boating ride with family- the price for a boat ride can be quite expensive

		Frustrated - too many unnecessary works were done to the surroundings. Impressed with the conservation work along the river
Experience	Connection to nature	Watching nature - unforgettable moments
	Sensory experience	Very beautiful, but at times, some unpleasant smells even when during COVID Great drawing on the murals, quiet surrounding exceptional delicacy food - Nyonya Peranakan food No shops opened during COVID-19; we had to eat at the hotel. Exciting and beautiful - added value of the history, though the water emits smell during boating very crowded with people Night-time visit is better because of the beautiful lights; we went during COVID restriction, Good decoration and effort to make the river project beautiful- but it still has some unpleasant smell
Identities	Cultural and Symbolic	The place is different compared to many years ago

The benefits of 'experience' relate to the 'sensory experience' the visitors feel. ~~Important~~ Critical feedback from visitors on their visit before and after COVID-19 relaxed restriction is the level of calm and quietness. Visitors chose to visit at night during COVID-19 to avoid crowds, indicating that the level of security and lighting is essential, as one interviewee mentioned, "felt secured because of lighting along the river". Colourful lighting also creates excitement for the children and nice visuals during the night, as the visitors describe. Other interviewers did not realise the noise level until it was so quiet and calm during COVID restrictions. Few visitors complained about the unpleasant smell from the river despite no rubbish, and these were described as pre-Covid and relaxed COVID-19 restrictions. As illustrated in Table 2, ~~this emphasises that sensory experiences such as brightness, sense of smell, hunger, and sound different impact experiences such as feeling calm, secure~~sensory experiences such as brightness, sense of smell, hunger, and sound have different impact experiences such as feeling calm, secure, and safe. Respondents only relate their experience to pre-COVID and relaxed COVID-19 restrictions in describing their sensory experience. This research identified the importance of the project's intangible benefits in creating the benefits, and provisions should have been dedicated to creating more awareness to promote more dialogues to create inclusive sustainability in the initial stage of projects.

Perception of the effect of the project on the places and community

We asked the visitors to share their feedback on the modernisation surrounding the area of the flood mitigation project. Amin (2018) suggested that ~~the conservation of~~conserving heritage places requires careful consideration of the needs of the residents and the stakeholders and the symbolic meaning of the places to people. However, Amin's (2018) analysis is based on the residents' feedback on the urbanisation of their city by examining the residents' acceptance and opposition, whilst this study focuses on the reviews and interpretation of the visitors of the flood mitigation project in the historical place. All questionnaire~~s~~ respondents and interviewees accepted the urbanisation surrounding the village and the historical river as the effect on the transformation of the flood mitigation project did not disrupt the heritage of the Sungai Melaka and the surrounding area. We showed some photos during the interviews and asked the respondents to describe their perceptions based on the images. For instance, more than twenty-three respondents stated, "This is the heritage to the younger generations to know their roots and heritage of the place". Then, nine respondents discussed the economic importance of preserving the place. They stated, "preserve the heritage of the people who live in that village to attract tourists", while five respondents described "the house was well preserved, well maintained" and "it is important for the community to maintain and preserve the heritage".

Re-visit the notion of project success.

The current model of project success normally confines the project execution to meeting the targets and overcoming the constraints while meeting the expectations sets by the stakeholders. The community or the facility's users are normally consulted and discussed in the literature as user satisfaction. In this paper, our critical concerns with sustainability and infrastructure use another ~~different~~ lens, the lens of the practising users. Tonkin (2015) described that infrastructure encapsulates the labour and the works with the production of material goods with the purpose of main function of transporting services and materials, and it is time to rethink infrastructure as an object that ~~involves~~ is involved in social interactions and connects or disconnects people, resources, services, materials and goods. Based on the analysis of this case study, it is proven that flood mitigation provides more than the ~~main functions as~~primary functions of an infrastructure to the community. In this case, flood mitigation successfully connects the visitors and the facility infrastructure users with opportunities to practice their cultural practices. These practices reflect~~ed what has been described by Angelo and Henschel (2015),~~ what has been described by Angelo and Henschel (2015), which is that the infrastructure performs more than its technical function by integrating the social conventions of the users in building user perception and experience to form a whole picture of the community. The infrastructure's presence can have an impact on the community. We examined the benefits using the Church, Fish and Winter (2014) and O'Brien et al. ,(2017) framework in studying the effect of the infrastructure on the interactions between environmental facilities and practices. We acknowledge that this analysis is limited to the visitors' lens, who can be considered as ~~the~~ temporary citizens of the place.

Conclusion

In this paper, we have underscored the critical importance of considering the interaction between people and facilities in determining the success of infrastructure projects, with a specific focus on

flood mitigation projects in the context of preserving cultural heritage. Our analysis, drawing from previous research (Church, Fish, Winter, 2014; and O'Brien et al., 2017), has highlighted the qualitative and structural dimensions in evaluating such projects.

Our findings emphasise the intangible benefits of flood mitigation projects, particularly their impact on people's well-being, capabilities, health, and overall experience. Although these benefits are challenging to quantify, they underscore the significance of considering the socio-structural dynamics involving visitors as key stakeholders. We also acknowledge this study's demographical and representational data; however, this study lays a foundation for exploring the relationship between project evaluation and the cultural ecosystem. Future research will delve into the cultural ecosystem benefits experienced by residents and business owners along the river, providing a holistic view of the cultural ecosystem's influence on flood mitigation projects.

One of the key takeaways from our analysis is the need to broaden the definition of project success to include social interactions between users and the infrastructure, who are the visitors of the facility. As the case study demonstrates, the flood mitigation infrastructure functions as a social-technical system that fosters social interactions and enables the practice of cultural traditions. Critical scholars can incorporate these insights into the evaluation of project success.

We recommend that project management research and industry practitioners adopt project evaluation methods that acknowledge and recognise projects' social and human impact through cultural practices. This approach will support sustainable construction and ensure the inclusion of diverse communities in project development. Our results underscore the role of sensory experience in creating project impact and added value. Project teams, including clients, must recognise its importance in promoting sustainable initiatives prioritising people's health, well-being, and community resilience.

In conclusion, our study challenges the conventional definition of project success by considering the interactions between users and infrastructure. This broader perspective encourages a more inclusive approach to sustainable infrastructure development, promoting the well-being and cultural richness of the communities affected by such projects.

~~This paper highlighted the importance of including the interaction of people and the facilities in determining the project's success. Most respondents described the importance of preserving the communities' heritage and culture through flood mitigation projects. Sungai Melaka rehabilitation protects the community from floods and offers other benefits. Analysis summarised in Table 1 and Table 2 developed by Church, Fish and Winter (2014) and O'Brien et al. (2017) provide the qualitative and structural dimensions in evaluating projects. This represents the importance of flood mitigation to people's well-being by impacting capabilities, health and experience. The benefits identified in this study are intangible, and the effects were based on the feedback of the visitors. It would accentuate the socio-structural understanding of the end-users as one of the key stakeholders in projects. This early study may offer a conceptual basis for studying the relationship between project evaluation using a cultural ecosystem. The following research will focus on the cultural ecosystem benefits of the residents and the business owners along the river to complement this study to offer a complete picture of the cultural ecosystem benefits of this flood mitigation project.~~

~~Based on the analysis, our perpsectives on the project success on this sustianable intitative infrastrcture in some ways pushed for broader definition of success to include the social interaction between the users and the object, the project.~~

~~The paper examines the definition of success in sustainable projects by including the interactions between the users and the facility. Because the case study shows that the infrastructure as a social-technical system supports social interactions and creates opportunities for people to practice their cultural practices, we contend that critical scholars can look to the interactions between people and social-technical systems in part of the evaluation of project success. In developing the broader definition of project success, it is recommended that the project management research and industry practitioners create project evaluation which acknowledges and recognise the social and human impact of the projects through cultural practices to allow sustainable construction with consideration of the inclusion of diverse communities in projects. Our results show that sensory experience is one of the major roles in creating impact of the project, and it is important for the project team - including the client - to recognise the importance of it to create added value in projects. In effect, the project teams and clients are now ever more pressured to deliver projects sustainably and promote better inclusion, focusing on supporting people's health and well-being as part of recovery and rebuilding community resilience.~~

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