



**Doctoral School of
Business and
Management**

THESIS SUMMARY

To the Ph.D. dissertation

ZSUZSANNA FEHÉR

Sustainable museums:

a new paradigm for the 21st century
from the perspective of museum professionals and visitors

Supervisors:

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habil. associate professor

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**Corvinus University of Budapest
Department of Tourism**

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I. RESEARCH BACKGROUND AND JUSTIFICATION OF THE TOPIC

One of the most important basic functions of museums is to preserve the cultural resources of a community, not only for the present but also for future generations. However changing levels of government, corporate and individual support, new demographic indicators and the rapid development of information technology are encouraging museums to rethink and develop new strategies.

In recent years, the concepts of sustainability and sustainable development have constantly come to the attention of researchers and practitioners, and have become more widespread. Museums are no exception to this process and sustainability is increasingly becoming a priority for museums, as reflected in the new definition adopted by ICOM in 2022.

Well-managed museums not only ensure their own sustainability but also play an important role in the sustainable economic development of different urban regions (Gustafsson and Ijla 2017). The quality of the products and services offered by museums directly influences the development of cultural tourism in a given region as well. Cultural tourism is a key factor for sustainable development and intercultural dialogue however several scenarios for its future seem to be emerging, which is why it has never been more important to coordinate and align the key actors' perspectives (Matteucci et al. 2022). In the strategic alliance between culture and tourism, sustainability should be used as a bridge connecting them (Pop and Borza 2015). Through the phenomenon of a sustainable museum, we can understand the complexity of museums, their role in society and find the points where they can be linked to the economy and tourism in a sustainable way. Much depends on how museums perceive their role in this process, as this will have a long-term impact on the extent to which they contribute to sustainable development.

It is therefore important to explore this area and despite the obvious links between museums, culture and sustainability, not much research has explored how museums fit into sustainability and how different stakeholders can contribute to promoting cultural sustainability.

Based on this, the main research question of my study is:

How can a sustainable museum be defined based on the mission statements of European contemporary art museums and according to the value preferences of museum professionals and museum visitors?

The dissertation is based on the presentation of five journal articles and a theoretical summary of the topic. The introduction to the summary of the dissertation outlines the theoretical background of the research (Chapter I), the methods used (Chapter II) and the main findings

of the publications. Chapter III summarises the theoretical and practical contributions that are the main findings of the research.

How do museums need to change in order to play their role as catalysts for the promotion of human culture around the world in the 21st century, to meet new challenges? Empirical research on this topic can make a significant contribution to the social and economic changes that we now perceive as necessary and essential for a sustainable future. Many authors have concluded that sustainability requires the rebuilding of the foundations of social and economic structures, both locally and globally, and that museums can facilitate these processes (Belfiore & Bennett 2007)

I.1. Museums' role in sustainable development

Table 1. Sustainability models of the museums

Author	Model	Highlights
Jung 2011	Ecological museum model	If museums operate as an ecosystem, they can ensure their long-term sustainability
Campolmi 2013	Archétopy museum model	The information (knowledge) is not presented as final but as provisional expert opinions
Stylianou-Lambert et al. 2014	Culture-focused four-dimensional museum model	Culture emerges as a 4th dimension that is worth preserving and how cultural skills and knowledge can be passed on to future generations
Wickham & Lehman 2015	Sustainability priorities model	Sustainability should be extended to the wider range of resources (e.g. human capital, cultural, historical, social and economic resources)
Pop & Borza 2016	Museum Sustainability Measurement Model	Sustainability can be strongly influenced by the size of the museum and the financial and human resources available.
Pencarelli et al. 2016	Regional Sustainability Model	Museums can create long-term value for multiple stakeholders
Magliacani & Sorrentino 2021	An economics-based four-dimensional museum model	The economic dimension appears as the basis for the other dimensions

Source: own editing

The presented models reflect how the theoretical framework for museum sustainability has evolved. The starting point is the Ecological model (Jung 2011), which already anticipated the idea that all museum activities are closely interconnected and the Archetype museum model (Campolmi 2013), which envisages a museum that is symbiotic with society and constantly reinterpreting itself. Culture (Stylianou-Lambert et al. 2014) has been included as a fourth dimension in the classic triple bottom line sustainability model. The model of priorities addresses internal and external stakeholders and resources that determine sustainability (Wickham & Lehman 2015) and Pencarelli et al.'s (2016) model describes the value creation at regional level. Recent research highlights the importance of the economic dimension as a basis for other dimensions (Magliacani & Sorrentino 2021).

I.2. Sustainability of museums based on 4 pillars

Soini and Birkeland (2014) examined the discourse on the concept of cultural sustainability by analysing the academic publications that mention the term. They found that cultural sustainability is a transdisciplinary, constantly evolving term that can be organised around seven narratives: heritage, cultural vitality, economic viability, diversity, localism, ecocultural resilience and ecocultural civilisation. The authors argue that while most of these narratives are linked to economic, social and environmental sustainability, the narratives of heritage and cultural vitality can be seen as forming the fourth (cultural) pillar of sustainable development. These two narratives, which focus on the promotion and preservation of cultural capital for future generations, are key issues for museums and can be seen as essential tools for cultural sustainability. This theoretical approach has been accepted by the authors Stylianou - Lambert et al. (2014) and Pop and Borza (2016) and the Q methodological research presented in the dissertation also examine museum sustainability within this theoretical framework.

Table 2. Sustainability of the museums based on four pillars

Economic	Social	Environmental	Cultural
Tourism <i>Siu et al. 2013</i> <i>Pop & Borza 2015</i>	Education <i>Moldanova 2016</i> <i>Hansson & Öhman 2022</i>	Allocation and use of natural resources <i>Wickham & Lehman, 2015</i>	Mission and vision of the museums and the role of their collections in society <i>Ankersmit 2021</i>
Organisational development <i>Dollery et al. 2007</i> <i>Brown 2020</i> <i>Ost & Saleh 2021</i>	Active use of cultural heritage <i>Schaper 2018</i> <i>Llamazares de Prado 2021</i> <i>Hammady et al. 2021</i>	Efficient building maintenance <i>Pedro et al. 2013;</i> <i>Arroyo et al. 2016</i> <i>Sterrett & Piantavigna 2018</i> <i>Hassanizadeh & Noorzai 2020</i> <i>Aleksandrov 2021</i>	Collection management <i>Ankersmit 2021,</i> <i>Manfriani et al. 2021</i> <i>Orea & Giner et al. 2021</i>
Services <i>Comaan & Pop 2012</i> <i>Stokburger-Sauer & Wetzels 2007</i> <i>Dollery et al. 2007</i>	Community involvement <i>Llamazares de Prado 2021</i>	Shaping eco-conscious attitudes of visitors <i>Han et al. 2021</i> <i>Navas Iannini & Pedretti 2022</i> <i>Aguayo et al. 2020;</i> <i>Huang et al. 2022</i> <i>Molina -Torres 2021</i>	Exhibition management <i>Manfriani et al. 2021,</i> <i>Jurčišinová et al. 2021,</i> <i>Bodnár et al. 2017</i> <i>Douglas et al. 2018</i> <i>Clini & Quattrini 2021</i>
Sustainable financial approach <i>Carroll & Slater 2009,</i> <i>Güner & Gülaçtı 2022</i>	Influencing society <i>Azmat et al. 2018</i>		Digitisation <i>Wang et al 2021, Muñoz - López et al. 2021, Clini & Quattrini 2021</i>
			Future-oriented approach <i>Viau & Courville 2021,</i> <i>Carr 2021</i>

Source: own editing

I.3. Research questions

Museum professionals have for some time been increasingly concerned about the changes affecting museums: dwindling public funding, changing visitor expectations, the challenges of new technology, the growing focus on the environment, the widening gaps between different social groups. How do museums need to change to stay relevant? As the problem is very complex, a response was sought that could address all these challenges at once. The 21st century has brought with it a new paradigm of sustainability that can point the way to a solution. The research sought to find out what progress museums are currently making in this area and what preferences visitors and museum managers have regarding the complex issue of sustainable museums.

Main research question (RQ)

How can a sustainable museum be defined based on the mission statements of European contemporary art museums and according to the value preferences of museum professionals and museum visitors?

Table 3. Conceptual framework for the primary research

Research goals	RQ	Article
to analyze how European contemporary art museums have incorporated sustainability into their mission statements	Q1 What sustainability practices characterize European contemporary art museums based on the information set out in their mission statements? Q2 Are there regional differences in the sustainability contents of the mission statements? What are the differences between mission statements in CEE and non-CEE countries' museums?	A1
to investigate the progress in the adoption of sustainable practices at European contemporary art museums along four pillars	Q3 What are the sustainability practices of European museums based on information available on their website?	A2
to find out what opinion preferences Hungarian museum leaders have about sustainability, what are the similarities and differences in their views.	Q4 What are the most important criteria for a sustainable museum?	A3
to determine museum visitors' preferences related to the most important sustainability elements of museums	Q5 What are the elements of museum sustainability that Generation Z prefers?	A4
to identify key elements that make a museum family- friendly and to define criteria for this designation.	Q6 What are the criteria for family-friendly museums?	A5

Source: own editing

Q1. What sustainability practices characterize European contemporary art museums based on the information set out in their mission statements?

Research on sustainability in museums typically focuses on one dimension of sustainability, with little research on a holistic understanding of sustainability. Research on how museums align with sustainability is not a new topic, but rare in the context of contemporary art museums. The paper aims to analyze how European contemporary art museums have incorporated sustainability into their mission statements. The study uses a qualitative discourse analysis method to examine the content of the missions of 50 European contemporary art museums.

Q2. Are there regional differences in the sustainability contents of the mission statements? What are the differences between mission statements in CEE and non-CEE countries' museums?

During the research, we considered it important to explore whether there are regional differences between European museums. The former socialist countries of Eastern Europe have a number of social, economic and political specificities that may have an impact on the sustainable functioning of museums.

Q3. What are the sustainability practices of European museums based on information available on their website?

This paper investigates progress in the adoption of sustainable practices at European contemporary art museums according to four pillars of sustainability. Museums take various steps to adapt the goals of a sustainable future in their operation. Qualitative content analysis was used to capture how sustainable are European contemporary art museums and what are the differences between different European countries.

Q4. What are the most important criteria for a sustainable museum?

Museums play a unique role in cultural sustainability by preserving the heritage of their communities and allowing cultural capital to be accumulated and passed on from current generations to future generations. In the course of their development, museums have acquired a wealth of knowledge through continuous and in-depth research. The question is how should museums change in the 21st century to meet new challenges and become sustainable and play a catalytic role in advancing human culture? The aim of our research is to find out what opinion preferences Hungarian museum leaders have about sustainability and what are the similarities and differences in their views.

Q5. What are the elements of museum sustainability that Generation Z prefers?

Museums and researchers require knowledge of how museums think about and practice sustainability to understand how sustainability considerations can further be incorporated and institutionalised into museum practice according to four pillars: environmental, social, economic and cultural. A systematic literature review was carried out to explore the theoretical background of sustainable museums. This study, which used Q methodology, was designed to determine museum visitors' preferences related to the most important sustainability elements of museums.

Q6. What are the criteria for family-friendly museums?

In their traditional role, museums are cultural mediators, sources of information and research. However, as the needs of consumers with regards to museums are changing, institutions should instead focus on the opportunity to participate, learn and experience. The aim of our study is to identify key elements that make a museum family-friendly and to define criteria for this designation. The framework was constructed based on the analysis of in-depth interviews with families with constructive grounded theory.

II. METHODS APPLIED

Five research methods were carried out: systematic literature review to explore the theoretical background of a sustainable museum, qualitative content analysis and critical discourse analysis (CDA) to investigate museum websites and missions, Q method to assess the preferences of museum directors and young museum visitors, and grounded theory to analyze the needs of families.

II.1. Data collection

Secondary and primary data collection were conducted in the research.

A systematic literature review was carried out as secondary data collection, the methodology of which is briefly described in this chapter and the details of the analysis are presented in a journal article (A4). During the primary data collection, museums' web pages were analyzed (A1, A2) and museum directors (A3), young museum-goers (A4) and families (A5) were asked to participate in the research.

II.2. Systematic Literature Review

Four-phase literature review

A systematic review of the literature was necessary to explore the theoretical background of a sustainable museum. The process of literature review was carried out in four steps: the first step is conceptualization, which means the selection of the database, the definition of search

terms and the criteria for selection (SR1). The second and third step is the two-phase review process, which means the selection of studies based on title and abstracts (SR2- SR3), followed by the selection of articles based on reading the full content of the articles. The fourth step is the analysis and processing of the articles (SR4)

II.3. Critical Discourse Analysis (CDA)

Using the method of critical discourse analysis, the mission statements available on museums' websites were investigated. The aim of the research was to analyze how European contemporary art museums have incorporated sustainability into their mission statements.

In the discursive analysis of the mission of museums, the aspects to be analyzed emerged through the examination of the texts themselves, in an iterative process.

Through an iterative coding process, we developed a set of investigative criteria and an associated coding scheme by repeatedly reading and analysing the introductory texts of the first 20 randomly selected museums.

Rationale for the choice of method

Museum discourse is under-researched, especially the processes of positioning and meaning-making. Museum discourse analysis can tell us a lot about the values according to which museums create knowledge and the role these might play in future practices. It can also give an idea of the message it wants to convey to its audience and the language it uses to communicate it.

II.4. Content Analysis

In defining the main features of content analysis (CA), Klaus Krippendorff (2004) emphasised that it is a research technique that, while analyzing texts, seeks to draw conclusions not only about the texts themselves but also about their context.

Based on the research question, the categories, themes and aspects that researchers should consider when collecting data are defined. A code list is then developed and completed by the analysts in the form of a research diary. The categorization scheme built on this basis is a list of questions where the questions are formulated in a form to be decided: whether or not the theme/programme/initiative etc. appears on the website.

Rational for the choice of method

In content analysis, the interpretation of the data should take into account all other textual and non-textual contextual elements that may have an impact on the corpus of texts under analysis. On this basis, content analysis is therefore a suitable method to organise the textual and visual information contained in each website into a coherent and generalisable

structure and to formulate it into a database that can be analyzed and interpreted (Géring 2017).

II.5. Q-method research

The Q-method combines the characteristics of qualitative and quantitative research methods. It is qualitative because it focuses on the subjectivity of opinions and attitudes, but analyzes and evaluates the data quantitatively (e.g. factor analysis, correlation). Q-methodology helps to systematically investigate human subjective opinion-making and decision-making. No two people perceive the world in the same way, and these different perspectives are used to create typologies in this research method (Hofmeister & Tóth-Simon 2006). Commonly PQMethod 2.35 software is used to process the data. First, a correlation matrix between the Q-samples is generated and then factor analysis is performed. As a result of the factor analysis each group of opinions are separated and the Q-ordering that is on average characteristic of that group of opinions is produced. Based on the individual preference rankings, the method produces a certain number of factors, then Varimax rotation is conducted since the factors explain 60% of the variance, which is the minimum criterion.

Rationale for the choice of method

Due to its exploratory nature, the Q-method can answer potentially complex and socially controversial questions (Watts & Stenner, 2008) and focuses on identifying and interpreting respondents' views (Davis & Michelle 2011). In a Q-method study, participants develop their own preferences set by subjective ranking. Methodologically, the advantage of ranking statements is that it captures how people tend to relate these ideas to each other (in contrast, participants in a questionnaire rate statements one by one and may even score each statement equally, so the final result can only be interpreted separately).

II.6. In-depth interviews

Method: Grounded theory (GT)

The grounded theory (GT) method was chosen for the research. In addition to the two main methodological approaches, Glaser's classical (1967) and Strauss-Corbin's (1998) approach, many other subtypes have appeared in the literature. For our study, we chose the constructivist approach, which is related to Charmaz's methodology (2006), the main distinguishing feature of which is that it recognizes that the researcher him/herself is an important part of the research process.

Based on in-depth interviews, which is a qualitative data collection method that allows for the collection of a large amount of information about the behaviour, attitude and perception of the

interviewees the grounded theory method was carried out. This process starts with the identification of an area of interest followed by the various stages of data collection, analysis and concept development and ends with the representation of axial coding in diagrammatic form.

Rationale for the choice of method

As the concept of a family-friendly museum had not yet emerged as a formal strategy, but rather as a semi-structured interview to explore the perceived and real perceptions and attitudes of museum professionals and families, the use of semi-structured interviews was justified to explore the perspectives. This type of qualitative interview provides a flexible guide or roadmap around a list of themes and the researcher is able to probe, explore and ask further questions, exploring the subject area in depth (Patton 2002).

As there is no specific theory that allows for the formulation and testing of hypotheses, our research adopted a grounded theory approach as discussed above.

III. RESULTS

III.1. Response to the main research question

Research question (RQ): *How can a sustainable museum be defined based on the mission statements of European contemporary art museums and according to the value preferences of museum professionals and museum visitors?*

The sustainable museum is future-oriented, its long-term strategy is characterized by a multidimensional approach. Its activities aim to achieve greater performance primarily through cultural sustainability, to manage its collection in a sustainable way and preserve it for future generations.

The economic stability is the core condition for this, to achieve this it should be innovative, proactive in building partnerships with economic and cultural actors, especially with the tourism sector, as it is an important part of cultural tourism.

In addition, the sustainable museum needs active communities and therefore it is important to pay attention to the needs of visitors who are increasingly conscious. It means taking into account the fact that some visitors like to go to museums to learn and expand their professional knowledge but some of them for leisure and entertainment purposes. In order to increase the range of knowledgeable audiences, museum needs to involve them as an active interpreter taking into account the new paradigm of personalized museum experience. Its relationship with visitors is based on the fact that a visit to a museum does not start and end at the museum, therefore a multi-phase visitor experience should be designed by the museum

professionals. Its role in shaping society is significant, focusing attention on marginalized communities, which contributes significantly to the idea of a sustainable future. It is also environmentally aware in the way it operates and communicates this approach to its visitors.

As a result of the research, the six sub-questions (Q1, Q2, Q3, Q4, Q5, Q6) were answered as follows:

Q1. What sustainability practices characterize European contemporary art museums based on the information set out in their mission statements?

Response to Q1:

The results show that economic stability and the need for it is highlighted by several museums as a core condition. Environmental management, although encompassing a wide range of activities in the literature, is nevertheless scattered and generalised in the missions.

The social roles and the areas related to the core function of the museum were the most prominent sustainability themes, i.e. the dimensions to which museums can contribute most to sustainable development.

Q2. Are there regional differences in the sustainability contents of the mission statements? What are the differences between mission statements in CEE and non-CEE countries' museums?

Response to Q2:

Regional differences emerged on several points. Environmental management, economic stability and innovative, proactive behaviour are also stronger in non-CEE countries. However, sustainability practices arising from the museum's function are more prominent in CEE museums, with art-centredness, sustainable management of exhibitions and collections, and a stronger research base. In terms of societal roles, the picture is mixed from a regional perspective, with education and community engagement being more prominent in CEE museums, while accessibility and impact on society are more prominent in museums in non-CEE countries.

Q3. What are the sustainability practices of European museums based on information available on their website?

Response to Q3:

In our study, we found that the existence and level of the four pillars of sustainability reflect the viability of museums and the importance of their role in society and that it is therefore particularly important for their operations to be linked to the environment that surrounds them and without the support of which they cannot be sustainable.

Our research confirms that museums strive for greater performance primarily along the lines

of cultural sustainability, but also for social integration. In this respect, regional differences are starting to disappear. The third pillar, which plays an important role for museums, is the economic approach, but there are already differences in this area and the results show that these gaps are also weakening sustainability indicators. As the literature indicates, museums are the least focused on environmental sustainability.

Q4. What are the most important criteria for a sustainable museum?

Response to Q4:

As a result of the research, three dominant perspectives could be distinguished: exhibition-oriented innovator, collection-oriented strategist and education-based leader. Although museum managers approach the concept of a sustainable museum from different perspectives, economic stability based on innovation, social responsibility to reach communities and the transmission of cultural values are all important to them. However, the environmental dimension has not yet been integrated into the functioning of Hungarian museums, weakening the holistic approach to sustainability.

In our research, we have found that providing personalised museum experiences and opportunities for interaction is still a new field of museology in Hungary. These may be new technological solutions to which museums are open and we believe that these developments will contribute to the effectiveness of museums not only in cultural terms, but also in all dimensions of sustainability.

Q5. What are the elements of museum sustainability that Generation Z prefers?

Response to Q5:

The results show that the areas in which young museum visitors expressed a strong or moderate level of need reflect the idea that museums should manage their collections in a sustainable way and preserve them for future generations. These visitors also agree that museums need active communities. It is important for museums to pay attention to the needs of visitors who are increasingly aware and to take into account that some visitors like to go to museums for leisure and entertainment purposes. Respondents desire that museums be accessible to everyone, while others mainly want to learn and expand their professional knowledge. In order to increase the range of knowledgeable audiences, museums need to involve their visitors. It is necessary to take into account the changing roles and professional skill-related needs of museum experts.

Q6. What are the criteria for family-friendly museums?

Response to Q6:

Based on our findings, it can be concluded that the family represents a special type of visitor for museums. This is mostly determined by the fact that museums need to be able to provide an experience for several age groups at the same time, so a multi-generational approach is needed.

We identified aspects that museums may need to pay more attention to during the preparation, visit, and follow-up phases and pinpointed the factors that are necessary to create an ideal family-friendly museum. Museums should encourage interaction, which can take place within the family, between families or between the family and museum experts and educators.

III.2. Theoretical contributions

Table 3. summarises the main theoretical contributions of the studies in relation to the research questions and methodologies.

Table 4. Theoretical and practical contribution of research

N	Theoretical and practical contributions	Methodology applied	Related Q	Paper
1	Identifying 15 key sustainability thematic roles of the museums	Critical Discourse Analysis (CDA)	Q1	A1
2	Identifying the objectives and roles along which different practices exist in CEE and non-CEE countries	Critical Discourse Analysis (CDA)	Q2	A1
3	Identifying the proportion and level of achievement of the sustainability objectives of museums	Content analysis	Q3	A2
4	Identifying 3 dominant perspectives of Hungarian museum leaders for sustainable museum	Q method	Q4	A3
5	Novel identification of the potential tool for enhancing sustainability: personalised museum experiences is the new technological challenge	Literature review Q method	Q4	A3
6	Novel synthesis of the literature on sustainable museum	Systematic Literature Review (SLR)	Q4	A4
7	Novel approach using the Q-method to explore the trends that characterise the engagement and mechanism of action of opinion groups.	Q method	Q4, Q5	A3, A4
8	Identifying 3 dominant perspectives of young museum visitors for sustainable museum	Q method	Q5	A4
9	Creation of model of multi-phase museum visit, new approach to be used by museums to target visitors	Grounded theory	Q6	A5

Source: own editing

- (1) The research complements the empirical literature on sustainable museums and contributes to broadening the theoretical background with regard to sustainable museums. The mission of museums in this context has not been examined before. The research has shed light on the value preferences that define museums and around which they can develop sustainable strategies.

- (2) The novelty of the research is that there has been no research on museum sustainability specifically in the context of European contemporary museums. Our study investigated the differences between museums in CEE and other countries, thus contributing to both museum management and sustainability research.
- (3) No previous study has measured and compared sustainability indicators at the international level. The museums studied operate in different regions of Europe, in very different economic and social contexts. Their comparison is an important contribution to the theoretical literature of sustainable museums and museum management.
- (4) Research with Hungarian museum leaders has shown that there are several possible approaches to establishing a sustainable museum strategy. Through this research, we have contributed to the application of sustainability in practice.
- (5) Among the preferences of the members of the three factors, we found two statements that neither represents agreement nor disagreement, both related to the museum visiting experience: interactivity makes it easier to reach younger generations and the museum of the future offers a personalised experience. These are areas in which museums have not yet made much progress, and the inclusion of AI in museum visits is one of the developments that could open up new horizons, and museums should therefore make a greater effort to learn about and apply these solutions.
- (6) Novel synthesis of the literature on sustainable museums. We have highlighted that the topic is under-researched in tourism.
- (7) The Q-method is used to explore the trends that characterise the engagement and mechanism of action of opinion groups. Research illustrates the current conditions, but also outlines desirable and possible future alternatives.
- (8) The research provides insight into the differences and similarities between Generation Z opinion preferences and thus contributes to a deeper understanding of the sustainability of museums from the perspective of future museum visitors.
- (9) Several articles have contributed to the literature by exploring families as museum visitors. Some relevant studies have specifically investigated in the motivations of families to visit museums. However, these previous studies have focused on only one aspect of the family-friendly elements of museums. The present study adds to previous literature by offering a model of the family-friendly museum and sets up a multi-phase visitor model to help museums reach other visitor target groups.

III.3. Practical implications

Overall, my research findings provide an insight into the phenomenon of sustainable museums and explores the interfaces along which different interest groups in society can enter into partnership with it.

For museums

Museum professionals often use the term sustainability to mean environmentally conscious operations and economic stability. The research explored all dimensions of a sustainable museum, not only these 2 pillars but also the cultural and social aspects.

Building on the results of the research, each museum can develop its own strategy and identify the factors that make it perform well and those that make it less effective. The research has shown that sustainability is a very complex concept, which can lead museum professionals to be confused about it, but they can use the results of the research to embark on this long but seemingly inevitable transformation.

This study highlighted the most important elements for sustainable museums from the perspective of members of Generation Z. Young visitors are very important for museums and the research pointed out that today's young people are already very conscious museum visitors and have specific expectations. Based on these museums can plan their services and programs.

The research provides useful insights for museum management and helps them to develop partnerships with different stakeholders and to take proactive steps in long-term discussions with cultural policymakers.

In our study, we found that the existence and level of the four pillars of sustainability reflects the viability of museums and the importance of their role in society and that it is therefore particularly important for their operations to be linked to the environment that surrounds them and without the support of which they cannot be sustainable.

For the tourism sector

Awareness of the concept of sustainable museums is an important element in the drive towards sustainable tourism. We hope that the dissertation will provide not only scientific basis for further research (due to there is lack of studies on this theme) but practical contribution to building strategies in creating quality offers, targeting a travelling public who are discerning, culture-loving and conscious visitors. Art tourism, which includes museums could be one of the future trends in this field.

For cities and local governments,

Cities and regions have a lot to gain from museums. As well as providing academic work and value to communities, they are also important catalysts for a region's economy. However, it is also very important for policymakers to understand the values of sustainable museums and the directions that museum development should take in the museum sector. It is important to see that museums are first and foremost social institutions with a strong scientific background and can not only be an economic catalyst but they can also raise the prestige and reputation of a region, putting a city or region on the world map in areas where it would otherwise not be accessible.

III.4. Limitations and future research directions

However, the research study was limited to exploring the mission of museums and did not analyse other sources of information from museums that could provide additional information on museums' attitudes towards sustainability. Therefore, in the future, it would be worthwhile to extend the research to analyse the information and strategy documents of the museums' entire website and to explore other methodologies, such as case studies. Despite the richness of the contributions from our informants, our study about museum experts, Z generation and families has limitations. The first is that only Hungarian participants were included in the sample. Thus the study could be enhanced in the future by involving experts and visitors from other regions, which may reveal other perspectives. Further research on the relationship between sustainable museums and tourism would be useful for the development of tourism services. In order to meet the needs of tourists, an important visitor segment of museums, a new service paradigm needs to be developed to replace the product-oriented approach to exhibitions.

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V. LIST OF PUBLICATIONS

Own publications relevant to the research:

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