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Lončarić, Dina; Perišić Prodan, Marina; Ribarić, Ivana

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Dina Lončarić
University of Rijeka
Faculty of Tourism and
Hospitality Management
Primorska 42,
51410 Opatija, Croatia
dina.loncaric@fthm.hr
Phone: +38551294187

Ivana Ribarić
University of Rijeka
Faculty of Tourism and
Hospitality Management
Primorska 42,
51410 Opatija, Croatia
ivana.ribaric@fthm.hr
Phone: +38551294757

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Marina Perišić Prodan
University of Rijeka
Faculty of Tourism and
Hospitality Management
Primorska 42,
51410 Opatija, Croatia
marinap@fthm.hr
Phone: +38551689315

THE INFLUENCE OF A VISITOR'S PERCEPTIONS OF A MUSEUM'S WEBSITE DESIGN ON BEHAVIOURAL INTENTIONS

ABSTRACT

The purpose of this paper is to examine the impact of a museum's website design on visitors' intentions. Three hypotheses were set which assume that the design of a museum website has a positive influence on the intention of visitors to return to the website, to personally visit the museum, and to recommend the website to their friends and relatives. To achieve the purpose of the research, empirical research was carried out. The respondents evaluated the websites of 145 Croatian museums and responded to questions which indicate their intention of revisiting the website, personally visiting the museums and recommending the website to other people. The hypotheses are tested and confirmed using the partial least squares structural equation modelling (PLS-SEM). This research confirmed the perception of the website design to be a significant predictor of visitors' intentions regarding website revisits and of visiting the museums personally. Research results have also confirmed a significant and positive impact of visitors' assessment of a museum website and their intentions to recommend the website to others. The results of this research contribute to the theory and practice. Interpretation and generalization of the findings should be taken with caution because this study used a convenient sample of university students, which does not represent the entire population of museum website users. The research model represents a novelty in the current research studies, since it contains a new dimension "Overall impression" which has the most effect on the positive evaluation of the website.

Keywords: Museum marketing, web marketing, website, PLS

1. Introduction

The goal of any museum is to preserve its collection and modernize its presentation, in order to preserve unique monuments and civilizational wealth for the coming generations and, at the same time, to encourage the interest of potential visitors. According to Kirezli (2011: 173), museums are a special form of non-profit organizations in the service sector which establish a linkage between nations' cultural heritage and modern life. In addition, Pallud and Straub (2014: 361) pointed out that these institutions qualify as experiential settings because they offer their visitors several social and experiential benefits, such as life enrichment, avenues for interactions, enjoyment, and learning experiences.

Over time, the role of museums has changed significantly. Nowadays, museums "serve the functions of collection, research and exhibition, as well as education and recreation" (Sheng, Chen, 2012: 53), while in the past, museums were mainly focused on their collections, hence research and exhibitions were their most important activities (Pallud, Straub, 2014: 361). Today, museums act as specific mediators of culture (Gajski et al., 2011: 5) constituting a part of a wider cultural and entertainment environment, which is ruled by highly discerning visitors who seek an immersive experience. In order to utilize their potential, museums have to act in a way that will encourage the interest of active and curious visitors. This has emphasized the need to accept marketing as a survival tool and to make it into a link between museums and visitors (Komarac, 2014: 199). By monitoring visitors' changing needs for high-quality cultural offerings, based on highly set professional and scientific standards and monitoring overall museum production, museum marketers have to adjust the placement of cultural products to potential customers by continuously adapting and improving the quality of communications and public relations.

According to Kotler et al. (2008), museums should turn to marketing in order to increase audiences, build relationships with stakeholders, and embrace the latest technology in communication with the market. Powerful means to communicate with and reach vast audiences are websites, which provide useful services to the public by communicating museum programs, exhibitions, fees, hours, directions and services. Nowadays, every museum should cre-

ate its own website. Namely, museums contain rich sources of material in their collections and there is a particular interest in making this material available to a wide audience. According to Pallas and Economides (2008: 45), online museums are using some tools in order to be seen not only as guardians of information, but as part of a wider exchange. In particular, these Internet tools, such as online seminars, online tours, chat forums, e-shops, survey/polls, e-talks, extend the function of the museum website so that it is not regarded only as a catalogue of knowledge. Accordingly, most museum experts accept the unique opportunities that websites offer for attracting people to their museums (Hume, Mills, 2011: 276).

Although well-designed museum websites should induce behaviour and inspire revisits and physical visits to the museums, extant research has not documented this phenomenon at a satisfactory level. Furthermore, a complete absence of evidence is noticeable in the area of researching the website visitors' intentions to recommend the website to other people. Recent research in professional and scientific marketing literature has positioned the website as a very effective means of communicating, focusing mainly on its functional tasks. However, a knowledge gap occurs in the absence of systematic research of causal relationships between the museum website design, the intentions to revisit the website and the intentions of personally visiting the museum, while the connection between website visits and website recommendations to other people has not been explored to any sufficient extent. Therefore, the aim of this paper is to address the following research questions:

1. Does the museum website design encourage revisits to the website?
2. Does the museum website design encourage physical visits to the museum?
3. How does assessment of the museum website design affect the intention of visitors to recommend the website to their friends and relatives?

This paper is divided into five main parts. After the introduction, the second part gives a literature review regarding the issue of web-based marketing in a museum context as well as a systematic review of main website features. Next, the methodology of the primary research is explained, followed by the results of the research. Synthesis of the results is given in the conclusion.

2. Literature review

For a long time museums were considered to belong to culture in the most classic sense (Mencarelli et al., 2010: 332). However, a gradual shift has been made from the functional definition, where museums were object-based and focused on acquisition, conservation, communication and exhibition of art, to the purposive definition, which is people-based (Rentschler, Hede, 2007: 9). The shift was supported and promoted by the International Council of Museums (ICOM)¹, which defines a museum as “a non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment” (International Council of Museums [ICOM], 2015). Today’s museums have a tripartite role: as agents of social change, as focal points of cultural activity, and as repositories of heritage and knowledge (Chhabra, 2010: 310-313). Many museums have become places open to a diverse audience, as they have adjusted their activities to visitors’ needs, wants and expectations (Komarac, 2014: 211). This was done out of the need of maintaining a competitive edge (Lin, 2009: 106), given the increased levels of competition.

Attracting a wide audience and increasing visitation, in addition to understanding visitor expectations, requires the identification of possibilities, mostly focused on the ways of presenting the exhibitions in a more attractive way. In other words, museums should be market-oriented and implement a marketing concept which will provide a framework for effective communication with the environment and for efficient information collection and processing, in order to serve customers in the best way and to fulfil the public interest at the same time.

Museum marketing is a dynamic and complex field, which many museum professionals have found to be essential for a museum’s existence. The connection between museums and marketing began in the late 1970s (Komarac et al., 2014: 106), but the term “museum marketing” was considered a “dirty word” for a long time (Komarac, 2014: 203). Indeed, what many in museums feared was that, by introducing marketing, “art would suffer in the hands of the market” (Rentschler, Hede, 2007: 12). However, over the past decade the term “marketing” has ac-

quired an important place in the agendas of those who are engaged in the management of art and cultural institutions (Lagier, De Barnier, 2013: 2) so the bond between museums and marketing is becoming stronger. According to Tobelem (1997: 341-344), the introduction of marketing into museums can be attributed to four factors whose relative importance depends on the country and the nature of each institution: the growth of museums, the question of financing, the competitive environment and the need to know the visitors better. Implementation of a marketing concept into museum practice will result in “the high degree of satisfaction manifested by visitors who then become the best advocates for the institution, spreading its reputation through word of mouth information” (Tobelem, 1997: 344).

Marketing has gradually become an important element in attracting new visitors. Thus, contemporary museums are using promotion and different channels of communication for this purpose. Certainly, one of these frequently used and highly efficient communication channels is the Internet, used by a constantly growing number and variety of people. Therefore, most museums have established a presence on the Internet by creating their websites. As a platform, the website is the central and the most important part of the modern virtual environment (Dukić et al., 2013: 429). Museum websites, which Kotler (2008) highlights as a “significant means for reaching vast audiences and which serve to inform, educate, and encourage online visitors to participate in museum life”, present a significant communication tool in cultural tourism. Websites have many advantages such as “convenience and efficiency; travellers can obtain information, compare costs, and make reservations easily if online access is available” (Kim et al., 2009: 53). That is the reason why “companies are now paying close attention to their websites, and have become aware that having a website gives them the opportunity to easily reach potential customers, and by giving accurate and factual information, gain the trust of customers” (Aplar et al., 2010: 32).

In the last twenty years, research and studies have generated different approaches and models for the assessment of the quality and efficiency of official websites (Biloš et al., 2014: 51). Although there are several factors affecting the development of a high-quality website, the basic guidelines when structuring, designing and managing a quality website should be the customers’ wishes and requirements

(Lončarić et al., 2010: 350). High-quality Internet sites will attract more attention, contacts, and visits from consumers by implying that their products are of high quality. In addition, when consumers are satisfied with a high-quality Internet site, they are stimulated to active and positive word-of-mouth communication for the site (Yoo, Donthu, 2001: 32). To fulfil this task, management and marketing personnel must determine what the customers actually want from their visit, and then use their resources efficiently by targeting the right market. However, Pallas and Economides (2008: 46) find that web developments are often undertaken with limited resources in terms of time, knowledge and money and so consequently, many museum sites lack useful features. These limiting factors result in the fact that a large number of museum websites are created in the form of ordinary "electronic brochures" (De Silva, 2003: 55) containing information such as: visiting hours, entrance fees, a brief history of the museum, upcoming exhibitions and special events, addresses and telephone numbers, maps to the museum and images of exhibits with a textual description. In this summarized form, these websites do not meet the expectations of visitors. It is obvious that the content and the way the website content is presented affect the formation of visitors' impressions of the website as well as of the museum itself. That is why a museum's website has to be a dynamic entity in order to keep up with the evolution of technology and attract a constantly growing number of users who will return to the website. Consideration should be given to a wide variety of people in order to satisfy their expectations. Lazarinis et al. (2008: 17) point out that well-designed and user-adaptable websites improve business promotion as they attract more e-visitors. Castaneda et al. (2007) also proved that attitudes toward a website are a strong predictor of intentions to revisit the website. One can assume that, if the websites are well designed, have interactive elements and updated information, they will attract the interest of potential physical visitors, who will, possibly, recommend the website to friends and relatives.

Academic research into museum visitors, their motivation for visiting, and their expectations and satisfaction has been extensive, but there is insufficient evidence indicating that website content and design have an impact on the behaviour and intentions of potential and actual visitors. Kravchyna and Hastings (2002) investigated the moment in time

the user visited the website and have come up with significant statistics. In the study sample of 124 museum website visitors, 57% users visited the website before and after their physical visit, 23% users visited the site before their physical visit, 13% visited the site even if they didn't go to the museum, and only 7% visited it after their physical visit. These statistics can be significant as they provide an indication of visitors' behaviour. However, the question remains whether the museum websites encourage physical visits to museums, taking into account the content and the design of the websites.

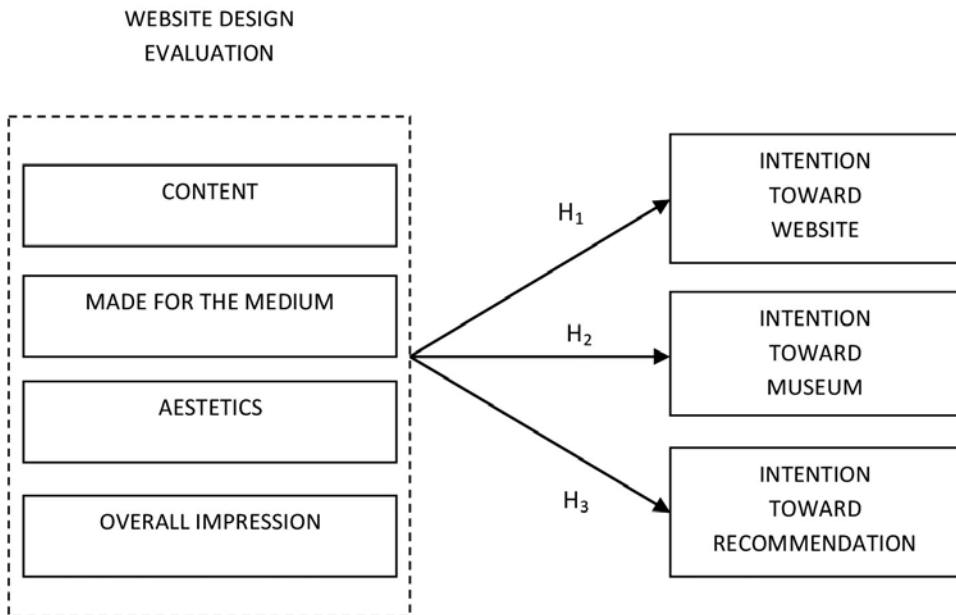
If museums wish to use websites for the purpose of cultural heritage presentation and attracting visitors, it is crucial that they focus their attention on the availability, functionality and content of the websites. In order to deeply understand the expectations of visitors and predict their behaviour, it is necessary to determine the kinds of information that visitors expect on the website, and what kind of oversights should be avoided. Vergo et al. (2001) give four of the biggest frustrations that users find with museum websites: inaccessibility of the full content of the museum, not finding the sought-for information, inability to access the schedule, inability to ask questions from the curators. As preferred website content, a survey conducted by Kravchyna and Hastings (2002: 11) revealed the various information needs of the online visitors. "Finding information on recent exhibitions" (68%) proved to be the most important reason for visiting the museum website, followed by "searching museum collections" (63%). "Information needs over special events in the museum" (60%) took third place in the ranking of information needs. Pallas and Economides (2008) highlight the content of the museum's site, which includes all information about its exhibits and artists, as a fundamental dimension. Furthermore, "multilingualism, dynamic and thus frequently updated content, e-mail communication and searching capabilities are crucial options of websites" (Lazarinis et al., 2008: 17). For that reason, much attention should be given to the website content so that they remain informative and visually appealing.

Although there are several previous studies on museum websites, mostly focused on functional tasks, (Lazarinis et al., 2008; Pallas, Economides, 2008; Hume, Mills, 2011) and revisiting the websites (Castaneda et al., 2007; Pallud, Straub, 2014), the impact of website design on intended behaviour has

not been sufficiently explored. Zhang et al. (2000) provided an emerging theoretical framework to distinguish between the website features that satisfy users from those features that dissatisfy users. In their study, subjects were asked to classify certain features into satisfiers and dissatisfiers, which showed support for the framework. Von Dran and Zhang (2000) approached the issue from a different angle. They applied a marketing model to the web environment by focusing on users' different quality expectations. Again, the empirical data showed that the model can be used to distinguish the features that meet users' basic, performance, and excitement quality needs. Both studies imply that the specific web domain or the purpose of a website impacts what users think about the features as satisfiers/dissatisfiers or how they meet different quality needs. In their further research, Zhang et al. (2000) used an inductive thematic analysis approach to examine user perceptions of the importance of website design features in six different website domains: Financial, E-Commerce, Entertainment, Education, Government, and Medical.

The results indicate the most important clusters of features for each of the six domains: navigation, completeness/comprehensiveness of information, site technical features, currency/timeliness/update, accuracy and readability/comprehension/clarity. The influence of website design on user reactions was also investigated by Flavian et al. (2006). They studied the reactions of Internet users and found that highly usable websites are positively related to trust and loyalty. Schaupp et al. (2006) examined the influence of different success measures on intentions to reuse a website. Their results indicated that the design characteristics of a website, such as information quality, perceived effectiveness, system quality and social influence, significantly affect user satisfaction with the website. Zhang et al. (2011) showed that highly usable websites positively influence online relationship quality. More recently, Pallud and Straub (2014: 367) also asseverated that "well designed websites do indeed induce visitors to return to the website and arouse their interest to visit the museum." In their research (2014: 362), to assess website design, they relied on the conceptualization of usability developed by Agarwal and Venkatesh (2002) and adapted from the Microsoft Usability Guidelines (MUG).

Figure 1 Research model



Source: Authors

This conceptualization uses five categories: content, ease of use, promotion, made for the medium and emotion. Furthermore, Pallud and Straub examined a new variable that has been overlooked in many MUG conceptualizations, namely, the aesthetics of websites. Their research results indicated that aesthetics is the single most important variable that influences user experience. They also established that well-designed websites induce visitors to return to the website. However, the study did not prove that attitudes towards websites affect the intention to visit the museum. Following the example of Pallud and Straub (2014) and taking into consideration the results of other previous studies, the research model (Figure 1) of this paper is formulated and three hypotheses are set:

H1: A positive assessment of a museums' website design positively affects the intention of visitors to return to the website.

H2: A positive assessment of a museums' website design positively affects the intention of visitors to personally visit the museum.

H3: A positive assessment of a museums' website design positively affects the intention of visitors to recommend the website to friends and relatives.

The central part of the model represents the construct of "Website design evaluation", which is presented as a second-order construct, while the first-order construct consists of four dimensions. Apart from "the content," "made for the medium" and "aesthetics" as significant criteria for website design evaluation (Pallud, Straub, 2014), the model of this research contains a new dimension, "overall impression" which encompasses two variables (promotion and ease of use) identified in previous research (Pallud, Straub, 2014) and one new variable, relating to the website experience. The model also contains three dependent variables: "Intention toward website", "Intention toward museum" and "Intention toward recommendation". The following section describes the methods applied in the paper.

3. Methodology

The object of analysis were museums listed in the official list of museums, galleries and collections in Croatia (Museum Documentation Centre)². Out of 217 museums, galleries and collections only 145 (66.8%) were relevant for this research. These are

museums that have their own websites.

The survey method was applied to answer the research questions and a questionnaire was designed to gather empirical data. While there are numerous previous studies on museum website evaluation (Olsina Santos, 1999; Pallas, Economides, 2008; De Silva, 2003), there is no comprehensive mechanism for systematically assessing all components of a museum's website (Pallas, Economides, 2008: 46). In this paper the respondents' opinions about the features of a museum website were examined according to previous research (Agarwal, Venkatesh, 2002; Pallud, Straub, 2014). The respondents were offered eleven items that refer to the following dimensions: "Content" (items 1–3), "Made for the media" (items 4–6), "Aesthetics" (items 7 and 8), "Website experience" (item 9 - new variable), "Ease of use" (item 10) and "Promotion" (item 11). Given that the dimensions of "Website experience", "Ease of use" and "Promotion" were measured using only one variable, these statements were combined to form the single dimension "Overall impression". Besides that, respondents were offered three statements referring to the intention of their behaviour (items 11–13). Constructs and measurement items are shown in Table 1. Respondents evaluated their agreement with statements on a five-point Likert-type scale, ranging from 1 "strongly disagree" to 5 "strongly agree".

The research was performed in May 2014. The respondents were university students enrolled in the second year of the 'Marketing' curriculum and possessing excellent Internet usage skills. Females accounted for one-third of the total number of students. Although the sample is not representative, this sampling frame can be considered as relevant because museums are targeting young people to broaden their audience (Pallud, Straub, 2014; Kotler, 2001). Besides that, online customers are younger and better educated than other customers, which makes student samples closer to the target population (McKnight et al., 2002). Each student was assigned a museum and asked to assess the museum's website and to respond to questions aimed at evaluating website design and determining behavioural intentions. Students evaluated the websites of all 145 museums and responded to questions which related to the website features and their intention of revisiting the website, personally visiting the museum and recommending the website to their friends and relatives.

The hypotheses formulated were tested using the Partial Least Squares Structural Equations Modelling (PLS-SEM) method. PLS-SEM is effective when working with small samples, with data that deviates from normal distribution, or “when the goal is predicting key target constructs or identifying key ‘driver’ constructs” (Hair et al., 2014: 19). Because PLS-Path Modelling has also been described as an important research tool in social sciences, especially for satisfaction studies (Mateos-Aparicio, 2011), and appropriate when handling formative measures and single-item constructs (Hair et al., 2014: 15), we assessed the method as being applicable to this paper. Results of the research are presented below.

4. Research results

4.1 Results of descriptive statistics

Descriptive statistics were computed using IBM SPSS Statistics 23, while the other data analyses were performed with Smart PLS 2.0. The results of the descriptive statistics are shown in Table 1.

The descriptive analysis results of the perception of the Croatian museum websites are disappointing. Out of the eleven characteristics, seven were rated below average (the average value is less than three).

Table 1 Constructs, measurement items and results of descriptive analysis (N=145)

| CONSTRUCTS | ITEMS | CODE | MEAN | SD |
|--|---|-------|------|-------|
| CONTENT | 1. The website offers content that is relevant to the core audience. | WEB1 | 3.49 | 1.015 |
| | 2. The website uses media appropriately and effectively to communicate the content. | WEB2 | 2.86 | 1.176 |
| | 3. The website provides current and timely information. | WEB3 | 3.63 | 1.135 |
| MADE-FOR-THE-MEDIA | 4. The website offers you the opportunity to be a part of an online group or community. | WEB4 | 2.34 | 1.216 |
| | 5. The website can treat you as a unique person and respond to your specific needs. | WEB5 | 2.75 | 1.134 |
| | 6. The website reflects the most current trend(s) and provides the most current information. | WEB6 | 2.69 | 1.211 |
| AESTHETICS | 7. I find that the design of the website looks pleasant. | WEB7 | 3.11 | 1.167 |
| | 8. I find the design of the website to be creative. | WEB8 | 2.82 | 1.229 |
| OVERALL IMPRESSION | 9. The website provides a unique experience. | WEB9 | 2,41 | 1.127 |
| | 10. The website is well structured and organized. | WEB10 | 3.19 | 1.282 |
| | 11. If I saw an advertisement of this website on the Internet or other related media (e.g. newspaper, TV), I would be stimulated to go to this website. | WEB11 | 2.58 | 1.194 |
| INTENTION TOWARD WEBSITE | 12. Given the chance, I intend to return to the website of this museum. | ITW1 | 1.82 | 1.005 |
| INTENTION TOWARD MUSEUM | 13. Given the opportunity, I intend to visit the physical museum. | ITM1 | 2.59 | 1.228 |
| INTENTION TOWARD RECOMMENDATION TO FRIENDS | 14. I liked the museum's website so much that I will share my experience with friends and family. | ITR1 | 1.77 | 0.943 |

Source: Authors

The opportunity to be a part of an online group or community received the lowest average score of 2.34 (SD=1.216). The item "The website provides current and timely information" achieved the highest average value (M=3.63, SD=1.135). Respondents believe that websites offer content that is relevant to the core audience (M=3.63, SD=1.015) but they are not creative (M=2.82, SD=1.229). Therefore, it is not surprising that the respondents gave extremely low ratings to the intentions to return to the website of the museum (M=1.82, SD=1.005) and to recommend the website to friends and family (M=1.77, SD=0.943). They are slightly more optimistic in expressing their intention to visit the museums in spite of their bad websites (M=2.59, SD=1.228).

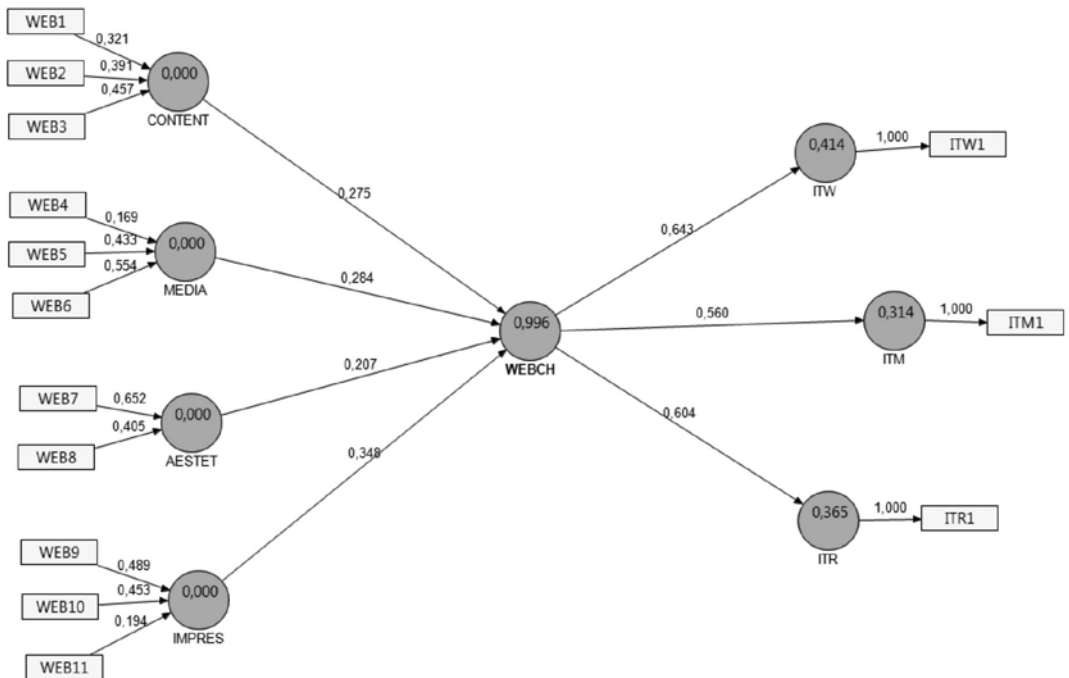
4.2 Hypotheses testing

The second part of analysis involved hypotheses testing. The hypotheses were tested using the Partial Least Squares Structural Equations Modelling (PLS-SEM) method. Data analysis was performed

with SmartPLS 2.0 which can easily handle reflective and formative measurement models and single-item constructs (Hair et al., 2014: 15). An evaluation of PLS-SEM results includes an evaluation of the measurement model followed by an evaluation of the structural model.

The measurement model specifies the relationship between constructs and measures (Diamantopoulos et al., 2008). There are two types of measurement models: reflective and formative. Since a reflective measure dictates that all indicator items are caused by the same construct, formative measurement models are based on the assumption that the indicators cause the construct (Hair et al., 2014: 43). Diamantopoulos and Winklhofer (2001) highlighted several characteristics of the formative measurement models that distinguish them from the reflective measurement model: 1) the indicators characterize a set of distinct causes which are not interchangeable as each indicator captures a specific aspect of the construct's domain;

Figure 2 PLS-SEM model with indicator weights and structural coefficients



Source: Authors

Table 2 VIFs, weights, *t* values and loadings of the first-order formative indicators

| INDICATORS | VIF | WEIGHT | T VALUE | LOADING |
|------------|-------|--------|---------|---------|
| WEB1 | 2.094 | 0.321 | 4.118 | 0.703 |
| WEB2 | 2.538 | 0.391 | 5.663 | 0.723 |
| WEB3 | 2.718 | 0.457 | 6.148 | 0.788 |
| WEB4 | 2.036 | 0.169 | 2.892 | 0.645 |
| WEB5 | 2.235 | 0.433 | 6.285 | 0.779 |
| WEB6 | 2.945 | 0.554 | 8.610 | 0.830 |
| WEB7 | 3.967 | 0.652 | 7.436 | 0.813 |
| WEB8 | 2.962 | 0.405 | 4.358 | 0.767 |
| WEB9 | 3.289 | 0.489 | 12.315 | 0.839 |
| WEB10 | 3.322 | 0.453 | 10.167 | 0.827 |
| WEB11 | 2.355 | 0.194 | 4.705 | 0.774 |

Source: Authors

2) formative indicators might correlate positively or negatively or lack any correlation; 3) formative indicators have no individual measurement error terms, that is, they are assumed to be error-free; 4) a formative measurement model, in isolation, is under-identified and, therefore, cannot be estimated. Since the items determine the content of the construct and represent different dimensions of the formative construct, they cannot be deleted without theoretical justification (Petter, et al., 2007). Given that the museum website designs in this study were evaluated based on statements relating to various website features, the measurement model is considered to be formative.

In many studies, constructs are often conceptualized and subsequently operationalized as multidimensional entities. In this case, it is necessary to distinguish between (at least) two levels of analysis, that is, one level relating manifest indicators to (first-order) dimensions, and a second level relating the individual dimensions to the (second-order) latent construct (Diamantopoulos et al., 2008). As illustrated by the conceptual model (Figure 1), the central part of model consists of the latent construct "Website design evaluation" (WEBEV). We conceptualize it as a second-order factor with four first-order formative dimensions: content, made-for-the-media, aesthetics and overall experience. In addition, the other three constructs (ITW, ITM and ITR) have only one indicator which is acceptable for PLS-SEM (Hair et al., 2014: 15). The PLS path model is displayed in Figure 2.

Different statistical tests can be performed to decide whether an indicator should be included in the formative construct or not, including convergent validity, assessing the degree of multicollinearity and assessing indicators' weights as well as loadings (Diamantopoulos et al., 2008; Hair et al., 2014, Rabaa'i, Gable, 2012). The results of the performed analysis are presented in Table 2.

"Convergent validity detects if the measures for a construct are more correlated with one another than with measures of another construct" (Petter et al., 2007: 641). All variables used in this research significantly correlate with their corresponding construct which is a sufficient condition for convergent validity (Pallud, Straub, 2014). To examine the collinearity between indicators we used the variance inflation factor (VIF) statistics. It is obvious that multicollinearity is not a concern since all VIFs are lower than 5 (Hair et al., 2014: 132). To assess the formative indicators' weights, a bootstrap analysis was performed with 5000 subsamples. It is shown that all *t* values are above 2.57, which indicates the significance of their weights ($p < .01$). These results give support for retaining all indicators.

Following the repeated indicators approach (Hair et al., 2014: 230-231) the second-order construct was formulated. As seen in Figure 2, paths to the second-order construct (WEBEV) represent the contribution of the first-order constructs. Table 3 represents the results of the second-order formative model evaluation.

Table 3 VIFs, path coefficients, t values and loadings of the second-order formative indicators

| WEBSITE DESIGN EVALUATION INDICATORS | VIF | PATH COEFFICIENT | T VALUE | LOADING |
|--------------------------------------|-------|------------------|---------|---------|
| CONTENT (CONTENT) | 2.760 | 0.275 | 18.535 | 0.869 |
| MADE-FOR-THE-MEDIA (MEDIA) | 3.106 | 0.284 | 18.010 | 0.906 |
| AESTHETICS (AEST) | 2.562 | 0.207 | 13.771 | 0.840 |
| OVERALL IMPRESSION (IMPRES) | 3.804 | 0.348 | 22.125 | 0.935 |

Source: Authors

It is shown that all second-order formative indicators have significant ($p < 0.01$) path weights. Also, second-order formative indicators show high loadings (zero-order bivariate correlations) on the website design evaluation construct. The dimension "Overall impression" (IMPRES) (path coefficient=0.348, $t=22.125$) has the greatest effect on website design evaluation as a second-order formative construct, while the dimension "Aesthetics" (AEST) (path coefficient=0.207, $t=13.771$) has the least effect.

After evaluation of the first- and second-order measurement models we assessed the structural model. Evaluation of the structural model includes size and significance of path coefficients and calculation of coefficient of determination (R^2). The assessment of the structural model starts with path coefficient estimate followed by the bootstrapping routine. The results are shown in Table 4.

As can be seen, all relationships are statistically significant. In relation to hypothesis H1, the results show that WEBEV significantly and positively influences ITW (path coefficient=0.643, $t=15.368$, $p < 0.001$). This finding supports H₁. Further, WEBEV positively influences ITM (path coefficient=0.560, $t=10.481$, $p < 0.001$) which confirms H₂. Also, WEBEV significantly and positively influences ITR (path coefficient=0.604, $t=13.087$, $p < 0.001$) which supports H₃. Additionally, we examined the R^2 values of the endogenous latent variable. The obtained value of ITW (0.414), ITM (0.314) and ITR (0.365) can be considered close to moderate (Hair et al., 2014: 175). Therefore, one can conclude that the perception of the website characteristics has a significant impact on the respondents' intention to revisit the websites and to visit the existing museum, with the possibility of recommending the website to friends and family.

Table 4 Significance testing of the structural model path coefficients

| PATH | PATH COEFFICIENT | T VALUE | P VALUE | HYPOTHESIS |
|-----------|------------------|---------|---------|------------|
| WEBEV ITW | 0.643 | 15.368 | 0.000* | Supported |
| WEBEV ITM | 0.560 | 10.481 | 0.000* | Supported |
| WEBEV ITR | 0.604 | 13.087 | 0.000* | Supported |

* $p < 0.01$

Source: Authors

5. Discussion and conclusion

The aim of this study was to establish the relationship between the perception of the website design and intention to revisit the website and to visit the museums personally. The causal link between the assessment of website design and intention of visitors to recommend the website to friends and relatives was also investigated at the same time.

The results of the empirical research show an unsatisfactory level of web marketing implementation in Croatian museums. Respondents who evaluated websites expressed their perception of the website characteristics and gave them very low ratings. Although they consider that the websites offer content that is relevant to the core audience and provide current and timely information, they find them uncreative. In particular, one can point out that the websites are not interactive and do not offer opportunities for online society inclusion to visitors. This is a result of poor implementation of social networks. Prior research also showed that visitors would welcome the ability to interact with a museum's site (Pallas, Economides, 2008). Not surprisingly, the respondents do not want to re-review the website but are a little bit more optimistic in expressing their intention to visit the museum personally.

This study has found that overall impression of users about a website has the most effect on the positive evaluation of the website, which is an important conclusion of this paper. Unlike the reference study by Pallud and Straub (2014), aesthetics had the least influence on website evaluation. Furthermore, this research confirmed the perception of the website design to be a significant predictor of museum website revisits (H_1). This is in accordance with the findings in a prior study carried out by Pallud and Straub (2014) who found out that a well-designed website induces visitors to return to the website and arouses their interest to visit the museum. Also, the research confirmed the perception of the website characteristics to be a significant predictor of visiting the museum personally (H_2). This is a significant finding which proves that new technologies are important for museum practice and that websites are an essential tool for attracting new visitors, especially young people who are familiar with new technologies. However, this finding is opposite to what was found in a recent study by Pallud and Straub

(2014) who showed that attitudes toward the website did not influence intention to visit the physical museum but was mediated by intentions to visit the website. Hence, further research on this topic is required. Research results have also confirmed a significant and positive impact of visitors' assessment of the museum website and their intention to recommend the website to other people (H_3). This is a significant contribution of this study, taking into account the lack of evidence in the research of this phenomenon. However, more thorough research should be conducted on this topic.

This study clearly indicates that Croatian museums have not made use of all the possibilities for the application of web marketing in contemporary circumstances when social contacts are moved to the virtual world. The question is, why this is so? One can only assume that the museum managers are not aware of the importance of marketing in museums and of implementing new technologies in museum practice. However, previous research conducted in Croatia showed that marketing is positively perceived among museum marketing managers and museum directors, despite their view according to which marketing is not always applicable in museums (Komarac et al., 2014; Komarac, 2014). Therefore, the answer to this question may be found in one of the future studies.

The limitation of this study is seen in the fact that it was conducted on a non-representative sample and, therefore, the results of the study cannot be generalized. The websites were evaluated by students who may have slightly different criteria than other audiences (such as children or the elderly who do not review websites before deciding to visit museums). However, if we take into account the fact that in the future the target audience will be the current generation of young people, museums must be prepared for a future that is already here. Therefore, this study provides museum managers with a basis for a better understanding of consumer behaviour and the role of web marketing in contemporary museum practice.

REFERENCES

1. Agarwal, R., Venkatesh, V. (2002), "Assessing a firm's web presence: a heuristic evaluation procedure for the measurement of usability", *Information Systems Research*, Vol. 13, No. 2, pp. 168-186.
2. Aplar, O., Algur, S., Cengiz, F. (2010), "Content Analysis of Accommodation Establishment Websites in Alanya Region", *Hosteur*, Vol. 19, No. 2, pp. 25-32.
3. Biloš, A., Ružić, I., Kelić, I. (2014), "Usability and functionality evaluation of the most profitable Croatian companies' web sites", *International journal of multidisciplinary in Business and science*, Vol. 2, No. 2, pp. 51-61.
4. Castaneda, J.A., Munoz-Leiva, F., Luque, T. (2007), "Web acceptance model (WAM): Moderating effects of user experience", *Information & Management*, Vol. 44, No. 4, pp. 384-396.
5. Chhabra, D. (2010). *Sustainable Marketing of Cultural and Heritage Tourism*. London: Routledge.
6. De Silva, N. (2003), "The use of multimedia to better museum websites", Available at: <http://mms.ecs.soton.ac.uk/mms2003/papers/13.pdf> (Accessed on: August 2, 2015)
7. Diamantopoulos, A., Winklhofer H. (2001), "Index construction with formative indicators: an alternative to scale development", *Journal of Marketing Research*, Vol. 38, No. 2, pp. 269-77.
8. Diamantopoulos, A., Riefler, P., Roth, K. P. (2008), "Advancing formative measurement models", *Journal of Business Research*, Vol. 61, No. 12, pp. 1203-1218.
9. Dukić, S., Dukić, B., Ružić, I. (2013), "Model optimalnoga web okruženja za e-marketing vjerskih organizacija u Republici Hrvatskoj", *Ekonomski vjesnik*, Vol. 26, No. 2, pp. 428-453.
10. Flavian, C., Guinaliu, M., Gurrea, R. (2006), "The influence of familiarity and usability on loyalty to online journalistic services: the role of user experience", *Journal of Retailing and Consumer Services*, Vol. 13, No. 5, pp. 363-375.
11. Gajski, A., Klarić, V., Laszlo, Ž., Nevidal, R., Pintarić, S. (2011). *Djelovanje muzeja kao dionika kulturnog turizma (Manual)*. Muzej suvremene umjetnosti. Zagreb.
12. Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M. (2014). *A Primer on Partial least Squares Structural Equation Modeling (PLS-SEM)*. Los Angeles: Sage Publications.
13. Hume, M., Mills, M. (2011), "Building the sustainable iMuseum: is the virtual museum leaving our museums virtually empty?", *International Journal of Nonprofit and Voluntary Sector Marketing*, Vol. 16, pp. 275-289.
14. Kim, Y. H., Yuan, J., Goh, B. K., Antun, J. M. (2009), "Web Marketing in Food Tourism: A Content Analysis of Websites in West Texas", *Journal of Culinary Science & Technology*, Vol. 7, No. 1, pp. 52-64.
15. Kirezli, O. (2011), "Museum marketing: Shift from traditional to experiential marketing", *International Journal of Management Cases*, paper presented at Special Issue: CIRCLE Conference, 27-29 April 2011, Dubrovnik, Croatia, pp. 173-185.
16. Komarac, T. (2014), "A new world for museum marketing? Facing the old dilemmas while challenging new market opportunities", *Tržište*, Vol. 26, No. 2, pp. 199-214.
17. Komarac, T., Ozretić Došen, Đ., Škare, V. (2014) "Museum marketing and virtual museums in 21st century: Can museums survive without it?", in Szymura-Tyc, M. (Ed.), *5th EMAC Regional Conference - Marketing Theory Challenges in Emerging Markets*, Katowice: University of Economics Katowice, pp. 105-112.
18. Kotler, N. (2001), "New ways of experiencing culture: the role of museums and marketing implications", *Museum Management Curator*, Vol. 19, No. 4, pp. 417-425.

19. Kotler, N. G., Kotler, Ph., Kotler, W. I. (2008). *Museum marketing and strategy: Designing Mission, building audiences, generating revenue and resources*. 2nd edition. San Francisco: Jossey-Bass.
20. Kravchyna, V., Hastings, S. K. (2002), "Informational Value of Museum Web Sites", *First Monday*, Vol. 7, No. 2, Available at: <http://firstmonday.org/ojs/index.php/fm/article/view/929> (Accessed on: August 6, 2015)
21. Lagier, J., De Barnier, V. (2013), "Marketing of art or art of marketing: how to break resistance?", paper presented at 42nd EMAC Annual Conference, 4-7 June 2013, Istanbul, Turkey.
22. Lazarinis, F., Kanellopoulos, D., Lalos, P. (2008), "Heuristically evaluating Greek e-Tourism and e-Museum websites", *The Electronic Journal Information Systems Evaluation*, Vol. 11, No. 1, pp. 17–26.
23. Lin, Y. (2009), "Importance-performance analysis of the Taipei Fine Arts Museum's services", *Museum management and Curatorship*, Vol. 24, No. 2, pp. 105-121.
24. Lončarić, D., Šuman, S., Marković, M. G. (2010), "Website quality: users vs. professionals' perspective", in: Kudlaček, J., Barišić, B., Velay, X., Ohkura, K. (Eds.), *IN-TECH 2010, 16th International Conference on Information and Intelligent Systems*, pp. 350-353.
25. Mateos-Aparicio, G. (2011), "Partial Least Squares (PLS) Methods: Origins, Evolution, and Application to Social Sciences", *Communications in Statistics - Theory and Methods*, Vol. 40, No. 13, pp. 2305-2317.
26. McKnight, D. H., Choudhury, V., Kacmar, C. (2002), "The impact of initial customer trust on intentions to transact with a web site: a trust building model", *Journal of Strategic Information Systems*, Vol. 11, pp. 297-323.
27. Mencarelli, R., Marteaux, S., Pulh, M. (2010), "Museums, consumers, and on-site experiences", *Marketing Intelligence & Planning*, Vol. 28, No. 3, pp. 330-348.
28. Olsina Santos, L. (1999), "Web-site quality evaluation method: a case study on museums", paper presented at ICSE 99 - 2nd Workshop on Software Engineering over the Internet, Available at: <http://staff.pccu.edu.tw/~tdl/Web-siteQualityEvaluationMethod.pdf> (Accessed on: August 8, 2015)
29. Pallas, J., Economides, A. A. (2008), "Evolution of art museums' websites worldwide", *Information Services and Use*, Vol. 28, No. 1, pp. 45-57.
30. Pallud, J., Straub, D. W. (2014), "Effective website design for experience-influenced environments: The case of high culture museums", *Information & Management*, Vol. 51, No. 3, pp. 359-373.
31. Petter, S., Straub, D., Arun, R. (2007), "Specifying formative constructs in information systems research", *Mis Quarterly*, Vol. 31, No. 4, pp. 623-656.
32. Rabaa'i, A. A., Gable, G. G. (2012), "Is Service Quality As A Multi-Dimensional Formative Construct", *PACIS 2012 Proceedings*, Paper 59, Available at: <http://aisel.aisnet.org/pacis2012/59> (Accessed on: August 7, 2015)
33. Rentschler, R., Hede, A. M. (2007). *Museum Marketing: Competing in the Global Marketplace*. Oxford: Butterworth-Heinemann.
34. Schaupp, C., Fan, W., Be' langer, F. (2006), "Determining success for different website goals", paper presented at 39th International Conference on System Sciences, 4-7 January, Big Island, Hawaii.
35. Sheng, C.-W., Chen, M. C. (2012), "A study of experience expectations of museum visitors", *Tourism Management*, Vol. 33, No. 1, pp. 53-60.
36. Tobelem, J.M. (1997), "The Marketing Approach in Museums", *Museum Management and Curatorship*, Vol. 16, No. 4, pp. 337-354.

37. Vergo, J., Karat, C.-M., Karat, J., Pinhanez, C., Arora, R., Cofino, Th., Riecken, D., Podlaseck, M. (2001), "Less Clicking, More Watching: Results from the User-Centered Design of a Multi-Institutional Web Site for Art and Culture", Available at: <http://www.archimuse.com/mw2001/papers/vergo/vergo.html> (Accessed on: August 10, 2015)
38. Von Dran, G., Zhang, P. (2000), "A Model for Assessing the Quality of Websites", paper presented at American Association for Information Science (ASIS 2000), 13-16 November, Chicago.
39. Yoo, B., Donthu, N. (2001), "Developing a scale to measure the perceived quality of an Internet shopping site (SITEQUAL)", *Quarterly Journal of Electronic Commerce*, Vol. 2, No. 1, pp. 31-47.
40. Zhang, P., von Dran, G., Blake, P., Pipithsuksunt, V. (2000), "A Comparison of the Most Important Website Features in Different Domains: An Empirical Study of User Perceptions", paper presented at Annual Conference. Americas Conference on Information Systems (AMCIS 2000), 10-13 August 2000, Long Beach, California, pp. 1367-1372.
41. Zhang, P., von Dran, G., Small, R., Barcellos, S. (2000), "A Two-Factor Theory for Website Design", paper presented at 33rd Annual Hawaii International Conference on Systems Science (HICSS 33), 4-7 January, Hawaii, pp. 1-10.
42. Zhang, Y., Fang, Y., Wei, K.-K., Ramsey, E., McCole, P., Chen, H. (2011), "Repurchase intention in B2C e-commerce—a relationship quality perspective", *Information & Management*, Vol. 48, No. 6, pp. 192-200.

(ENDNOTES)

- 1 The International Council of Museums (ICOM), Available at: <http://icom.museum/the-vision/museum-definition/> (Accessed on April 15, 2014)
- 2 Museum Documentation Centre, Available at: <http://www.mdc.hr/> (Accessed on April 10, 2014)

*Dina Lončarić
Marina Perišić Prodan
Ivana Ribarić*

UTJECAJ PERCEPCIJE DIZAJNA MREŽNOG SJEDIŠTA MUZEJA NA NAMJERE PONAŠANJA POSJETITELJA

SAŽETAK

Ovim radom nastoji se istražiti utjecaj percepcije dizajna mrežnoga sjedišta muzeja na namjere ponašanja posjetitelja. Postavljene su tri hipoteze koje pretpostavljaju da dizajn mrežnog sjedišta muzeja utječe na namjere ponovnoga posjeta mrežnom sjedištu, na namjere osobnoga posjeta muzeja te na namjere preporuke mrežnog sjedišta prijateljima i rodbini. U cilju dokazivanja postavljenih hipoteza provedeno je empirijsko istraživanje. Ispitanici su ocjenjivali mrežna sjedišta 145 muzeja u Hrvatskoj i odgovorili na pitanja koja ukazuju na njihovu namjeru ponovnoga posjeta mrežnom sjedištu, osobnog posjeta muzeju, te preporuke mrežnog sjedišta drugima. Hipoteze su testirane i potvrđene primjenom strukturalnog modeliranja pomoću parcijalne regresije metodom najmanjih kvadrata (PLS-SEM). Potvrđeno je da je percepcija dizajna mrežnog sjedišta značajan prediktor ponašanja posjetitelja u pogledu ponovnoga posjeta mrežnoj stranici te osobnoga posjeta muzeju. Rezultati istraživanja također su potvrdili značajan i pozitivan utjecaj procjene mrežnog sjedišta na namjeru preporuke mrežnog sjedišta drugima. Interpretacija i generalizacija rezultata treba biti uzeta u obzir s oprezom jer je istraživanje provedeno na prigodnom uzorku sveučilišnih studenata koji ne predstavljaju cjelokupnu populaciju korisnika mrežne stranice muzeja. Istraživački model predstavlja novost u dosadašnjim istraživačkim studijama, budući da sadrži novu dimenziju „Opći dojam“ koja ima najveći utjecaj na pozitivnu evaluaciju mrežnog sjedišta.

Ključne riječi: marketing muzeja, mrežni marketing, mrežno sjedište, PLS