Fostering Interaction Between Locals and Visitors by Designing a Community-Based Tourism Platform on a Touristic Island

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Abstract. More people are traveling than ever before. This intense and disproportionate growth in tourism may, however, generate negative environmental and social effects, especially on islands. In order to address this issue, this article presents the design and evaluation of Há-Vita, an interactive web platform, whose goal is to foster awareness of local nature and folk knowledge and create connections between locals and visitors. We explored these design goals through different research methods, such as user studies with tourists in hotel lobbies, as well as focus groups consisting of two different groups of local residents and a group of visitors. Theoretically, Há-Vita is grounded in the concept of "community-based tourism ventures," which is concerned with environmental preservation via ecotourism practices and, at the same time, the empowerment of local communities. Furthermore, the design rationale of the platform is also inspired by the authenticity theory, which examines tourists' pursuit of meaningful interactions with locals. Our results indicate that, despite time constraints (for visitors), locals and visitors were willing to interact with each other as they acknowledged authentic benefits in such interaction. Furthermore, our focus groups with locals have shown the potential to stimulate different levels of local empowerment based on the community-based tourism framework in the design iterations of Há-Vita.

Keywords: Community Empowerment, Tourism, Nature and Culture Preservation, Design, HCI and Tourism sustainability.

1   Introduction

Tourism is now an activity within the reach of millions, and this has enabled the travel and hosting industry to flourish globally. In particular, islands are special places with a natural attraction for tourists, due to their unique environmental and cultural attributes. On many islands, tourism is usually the answer to socio-economic constraints, contributing as the prime source of economic welfare and job creation for the locals who inhabit these isolated regions [1]. Intense and disproportionate tourism growth may, however, generate damaging environmental and social effects. Tourism pressures can endanger endemic species as well as generate friction in the local community as visitors

may adopt behaviors that go against the island culture or traditional values [2, 3]. This friction may lead locals to dislike tourism and to develop coping mechanisms to avoid contact with visitors[3, 4], generating unexpected consequences in the long run. It is crucial that the growth of the travel and tourism sectors continues with the investment and development taking place in an open and sustainable manner, motivating the empowerment of local communities and protection of cultural habitats [5–7].

As seen in the work of Dourish and Foth et al. [4, 8], issues relating to nature or the environment have been the focus of several studies in HCI research. Those studies have looked at how information and communication technologies (ICTs) may foster environmental sustainability, behavioral change, and social benefit. The potential and effectiveness of HCI interventions in eco-friendly practices require inquiry into the contexts in which those practices arise. In HCI research, environmental and ecological concerns are typically framed as a psychological problem of "bad habits," where the solution is to motivate and inform people to act pro-environmentally [9]. However, environmental and ecological concerns go beyond personal or individual responsibility, as they also have a political dimension that must be considered before eventually becoming part of any effective solution in HCI interventions. The contradictory dual reality of islands, which heavily rely on tourism revenues but also struggle with the damaging effects of it, provides a perfect example of what Dourish calls the HCI discourse that "obscures political and cultural contexts of environmental practice, which on the other hand must be considered as part of an effective solution"[8].

Concerned with the interaction between locals and visitors towards environmental and cultural preservation, this work uses as an example of analysis the Archipelago of Madeira, an established tourist destination and home to the Laurisilva forest (UNESCO World Heritage site since 1999). In 2013, tourism accounted for 24 % of GDP and 15% of employment in the region [10].

This context led to the design of Há-Vita, an interactive web platform based on the concept of "community-based tourism ventures" [5] which is defined as initiatives that aim to care for the environment (ecotourism) as well as ensuring the empowerment of local communities. Through the fostering of interactions (online and offline) between visitors and locals, the goal of the platform is to raise awareness of local values, the natural heritage, folk knowledge and traditions. Our main contributions for the Interact community are: i) the description of the design and rationale of the Há-Vita web platform, ii) the discussion regarding the benefits of such platforms for locals and tourists, as we conducted studies with both groups, and iii) the discussion of the user feedback regarding the Há-Vita prototypes and preliminary considerations for the future design iterations.

Over the next two sections, we describe the conceptual framework and related work that supported the motivation and design of the platform. Then, in section 4, the design of the platform following a design research approach [11], is reported. In section 5, we delve into the findings of several studies, followed by a discussion of the findings against the empowerment framework and laying out preliminary reflections for future designers of platforms with similar goals to Há-Vita.

2   Conceptual Framework

In order to address the two different target groups in our study, locals and visitors, the design rationale of Há-Vita draws on the combination of two different, but complementary, conceptual approaches to tourism. First, "Community-Based Tourism" (CBT) [5, 12–15], in which locals are the primary beneficiaries of the tourism. Second, the "authentic" experience [16], a tourism trend that aims to provide unique and local experiences to tourists. Next, we will explain how, and why, these concepts serve as the basis of Há-Vita.

2.1   Community-based tourism and four levels of empowerment

CBT looks at how local communities can exert control over the activities taking place in their environment based on past studies of how community-based tourism [13, 15], tourism conducted and controlled by locals, may empower local communities by diversifying the local economy, generating entrepreneurial opportunities for residents from different backgrounds, preserving culture, conserving the environment, and providing educational opportunities. Although one may say that CBT is related to the complex and broad literature on community engagement across different disciplines such as Political Science [17] and Urban HCI [18], the literature about CBT is quite developed and has been recognized in the context of tourism development, namely 'sustainable tourism' (ST) [19, 20], but also cultural tourism [19] and ecotourism [5]. For the latter, and aligned with the same concerns of our design rationales, there is a specific branch in the literature called "Community-based tourism ventures" (CBTV). This refers to initiatives that aim to care for the environment (ecotourism) as well as ensuring the empowerment of local communities. This approach to ecotourism is a response to tourism activities that are controlled by outside operators, foreign tourism companies, or contexts in which most of the economic benefits fall naturally (accrue) to the government, rather than returning benefits to local communities [5]. This approach is inspiring to our work since it prioritizes the quality of life of people and the conservation of environmental resources in the local community. Community-based tourism is not, however, exempt from challenges and is often criticized by scholars [12, 19]. This critical outlook of CBT is anchored in the problematic assumptions embedded within the community concept itself, as Noel Salazar emphasizes in his work [19]. Within the literature on CBT [12, 19], and also community engagement [17], different authors criticize the idea of community as being a construct and vague, and that is not taken into account by CBT studies. Blackstock [12], for example, argues that the literature on CBT, as presented since the 1990s, fails in three major regards towards community development: Firstly, it tends to take a functional approach to community involvement (not having the transformative intent of community development and not focusing on community empowerment). Secondly, it tends to treat the host community as a homogeneous bloc. Thirdly, it neglects the (external power-based) structural constraints on local control of the tourism industry. Additionally, Manyara and Jones [13] found several challenges for "development of indigenous small and medium tourism enterprises (SMTEs)." Some of these obstacles are: access to the global marketplace, literacy and

numeracy, sector-specific skills, access to capital, resource ownership and lack of government support through appropriate policy and legislative framework[13].

Okazaki[14] concluded that, to mitigate the failures of CBT, the first step in tourism planning should be to examine the current situation with respect to community participation and then to indicate the initiatives that are required to promote it. In addition to Okazaki's attempt to address issues found with CBT, we recall the previous point made by Blackstock [12] that we should focus on community empowerment, and we draw on the principles or signs of empowerment proposed by Regina Scheyvens with regard to CBTV [5]. She explains the signs of local empowerment and disempowerment derived from these four levels:

1) Economic Empowerment: Cash earned is shared between many households in the community and there are visible signs of improvement; Economic Disempowerment: Only a few individuals/families gain direct financial benefits from ecotourism, most profits go to local elites, outside operators, government agencies, etc;

2) Psychological Empowerment: Self-esteem of community members is enhanced because of outside recognition of the uniqueness and value of their culture, natural resources and their traditional knowledge; Psychological Disempowerment: Many people have not shared in the benefits of ecotourism, yet they may face hardships because of reduced access to the resources of a protected area;

3) Social Empowerment: Social cohesion that may improve individuals and families as individuals and families work together towards the ecotourism activities; Social Disempowerment: The community takes on outside values and loses respect for traditional culture and for elders. Rather than cooperation there is competition for the perceived benefits of ecotourism;

4) Political Empowerment: Refers to the structure that represents the needs and interests of all community groups and provides a forum through which people can raise questions; Political Disempowerment: The majority of community members feel they have little or no say over whether the ecotourism initiative operates or the way in which it operates;

Drawing on these studies that have used the four levels of empowerment, we anchor the analysis of our data to understanding how local communities in Madeira might be empowered through the control of a digital media platform.

2.2 Authenticity

Authenticity theory is connected with what van Nuenen [21] presents as "the modern discourse of anti-tourism, which consists of a traveler's desire to reach beyond superficial experiences that the tourism industry fosters." Van Nuenen is drawing from Goffman's theories, dating back to 1959 [22], in which Goffman provides an analysis of social interactions framed by the metaphor of "front and back regions" of a theatre. The front is the meeting place of hosts and guests (e.g., reception offices, parlors) and the back is "where members of the home team retire between performances to relax and to prepare" (e.g., kitchens, boiler rooms). Building on Goffman's [22] division into front and back regions, MacCannell [2, 23] says that touristic experience is underlined

by the same structural tendencies. Increasingly, tourists' ambitions move towards experiencing the local life, being like locals; there is a desire to experience "back regions" and being "one of them," in this case being one of the locals, or at least having access to the truth, to the intimacy of locals.

What is relevant for us in having this theory as a framework is that part of this authentic experience involves a pursuit of more meaningful interactions with locals [23]. In MacCannell's words: "the touristic way of getting in with the natives is the entry into a quest for authentic experiences, perceptions and insights" [23]. This theory informs us not to design something that serves only as staged authenticity but a platform that enables visitors to engage with local life through developing ties with residents.

3   Related Work

3.1   Interaction between locals and tourists

Past studies have revealed that the interaction between locals and tourists have developed in many forms and through different services (e.g., Couchsurfing, Airbnb, HomeAway [24]) and situations, either online or offline [25]. More recently, this interaction between locals and tourists has been part of a broader discussion of what constitutes an authentic experience [2, 23] for tourists [3, 26] in the context of digital media and tourism (see vayable.com [27], Urban Buddy [28], Spotted by Locals [29]). Echoing our context and design rationale, Moyle et al. [25] explored the cultural interaction between local communities and visitors to islands using social exchange theory to enhance the understanding of the island experience, in Bruny Island in Tasmania, and Magnetic Island in Queensland, Australia. The authors found that locals have a variety of motivations for social interaction with visitors, ranging from solely economic, to a genuine desire to share culture and traditions, and avoid superficial and hostile contact. However, the most common reason for interaction was economic. Nevertheless, those who do not rely on tourism to live "often expressed a genuine desire to interact in order to provide quality and meaningful experiences." It is also insightful to note that these authors point out that locals who have lived longer on the islands conceptualize the interaction with visitors as a "process of storytelling," either during an economic transaction or just socially. For those, pride plays a crucial role in interactions in which the sharing of history, culture, and environment is valued. While the authors found that some locals blame tourists for the deterioration of local infrastructure, they found a number of conditions that may facilitate the interaction between local and visitors, such as "festivals, events, and markets", where "locals could choose to interact with visitors, with a time limit, and without any major perceived threat to locals' lifestyle."

These authors provide several suggestions that may inform our current work. First, the education of the island communities is relevant in order to prepare and adapt for a shifting global landscape in which visitors have more interest in experiencing each destination more holistically. Also, the authors advocate for the inclusion of the visitors' perspective in future studies about interaction between locals and visitors to small islands. To date, we have not found studies similar to ours that survey tourists in regards to the interaction between locals and visitors, nor specifically on islands. As a result,

our study fills a gap in the literature by not only adding the perspective of visitors in such interactions, but also incorporating their impressions in the design of an interactive system.

While Moyle et al. talk about interaction between locals and visitors in general, without making distinctions between online and offline interactions, Chung et al. [24, 30] look at this type of interaction in online communities, and the role of an offline meeting in building online friendships. By using Social Network Analysis, Chung [24]found that locals and tourists build friendships in an online community through offline events. Moreover, they argue that that locals and tourists make their friendships in an online travel community, but online friendships are likely to be formed after a face-to-face meeting, not only by online interactions. On a note relevant to our project, Chung et al.[30] conclude that the fact that online users generally build friendships after face-to-face meeting provides destination marketing organizations with significant practical implications.

By developing the Há-Vita conceptual design further, we aim at not only providing information about nature and culture but also facilitating meaningful interactions with locals. We push forward the trend/concept of designing digital media platforms for interactions between locals as we offer deeper contact with the locals' way of living and raise awareness towards the local values. Furthermore, this work also builds on, and takes forward, the recommendations of the work by Moyle et al. [25] and takes into consideration the feedback of both locals and visitors in the design of the platform.

4 Designing the Há-Vita Platform

For the design of the Há-Vita platform, we followed a research through design approach [11]. We drew inspiration from the relevant literature on community-based tourism, the initial field research conducted when gathering the video content and the authors' inside knowledge as active members of the local community[1]. We also followed the advice of Norman and Stappers: "when political, economic, social and cultural variables interact, it is best to proceed slowly, with incremental steps" [31].The development of the prototype evolved into two stages. Stage 1 describes the conception and content design of the platform based on the gathered literature, informal interactions with local scientists, local artisans, with details in subsection below (4.1). Stage 2, subsection 4.2, describes how based on the video interview topics, the platform allows visitors to engage in activities around the island that allow them deeper contact with the locals and their way of life.

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[1] All authors were resident on the island at the time of the study and contributed equally to the design of the platform. The first author is native and highly engaged in preserving local values and environmental care, and she was the primary facilitator of the focus groups. The second author has a background in journalism and extensive experience working with communities and conducted most of the interviews, while informally involving the community in the project, and was also one of the facilitators in the focus groups. The third author is the Principal Investigator of the project with extensive experience in community storytelling and interactive media.

4.1 Stage 1: Há-Vita 1.0

Content Creation: We chose to produce video interviews as this format offers the visitors the sense to "get to know" community members and hear from them first hand. Utilizing the journalistic principle of having different points of view in a story, we carefully chose our interviewees based on their expertise and knowledge on local heritage, crafts, and biodiversity. The interviewees represented two different sources: 1) Scientific knowledge holders and 2) Local folk knowledge holders. All interviewees were informed of the general project goal to stimulate and instill in tourists an interest in the natural heritage and folk knowledge of Madeira. To scientists, we asked open-ended questions regarding technical distinctions of terms such as native and endemic plants, or the causes of wildfires or floods on the island. To local residents, we posed general questions about their knowledge and experience with the flora, fauna, and traditional products of Madeira. The content and thematic areas addressed in the platform were directly affected by the interactions with the locals as they generated a snowball effect for content development; locals suggested themes and stories, or put us in contact with other locals that they thought could contribute to the platform. After three months of work, we managed to gather 18 interviews of various length, the content and themes of which was analyzed and yielded seven main categories: Laurisilva, Madeira's Fauna, Traditional Products, Hydrological Balance, Macaronesian Forests, Invasive Species, and Natural Disasters (represented in Fig. 1).

Conceptualization of the interface: The Há-Vita homepage presents a promotional video introducing the platform's main goal. The top of the page contains a drop-down menu, where clicking on the word *Episodes* leads to the identification of the seven themes, drawn from the interviews and extensive interactions with the locals. The icons in the drop-down menu expand, and by clicking inside the expansion, the visitors are forwarded to the page where the locals express their knowledge regarding the chosen topic (Fig 1.). The interface was deployed in a customized WordPress template.

Fig. 1. Há-Vita graphical elements highlighting the connection to Madeira's nature and traditions (e.g., the main logo represents of one of the indigenous trees; Icon 3 from main categories depicts Poncha on of the traditional beverages of Madeira)

Há-Vita 1.0 provided us with a working repository of video content, and interviews with the local community, in a non-linear, modular fashion. At this stage, the communication between the visitors and the locals was still quite restricted, being only granted through comments to the videos. In order to enable a sense of empowerment of locals through the interaction with visitors, we needed to make the platform more interactive.

4.2   Stage 2: Há-Vita 2.0

Past studies have suggested [25] that direct involvement of local communities in touristic activities could benefit both visitors and locals. On the visitors' side it would provide the opportunity for an authentic experience, and for the locals it would provide empowerment. In Fig 2., the connection between local empowerment, tourists, nature, and the island's cultural values is present. Locals can be contributors not only concerning content for the main themes, but they can also contribute by organizing activities. Those who contribute to the video content appear to the right side of each video. Below the picture, there is a highlight if the local offers an activity. By clicking that section visitors will be able to see which activity is proposed. Visitors can also have an overview of all locals participating in the platform, while locals have access to a backend allowing them to manage their connection with the visitors (Fig 3.).

Fig. 2. Features enabling visitors to connect with locals. *Left*: hovering on the locals' photographs keywords showcases a summary of who the local is. *Right*: Activities showcase a description, date, type contribution, explanation on how to sign up and a contact form in case doubts arise.
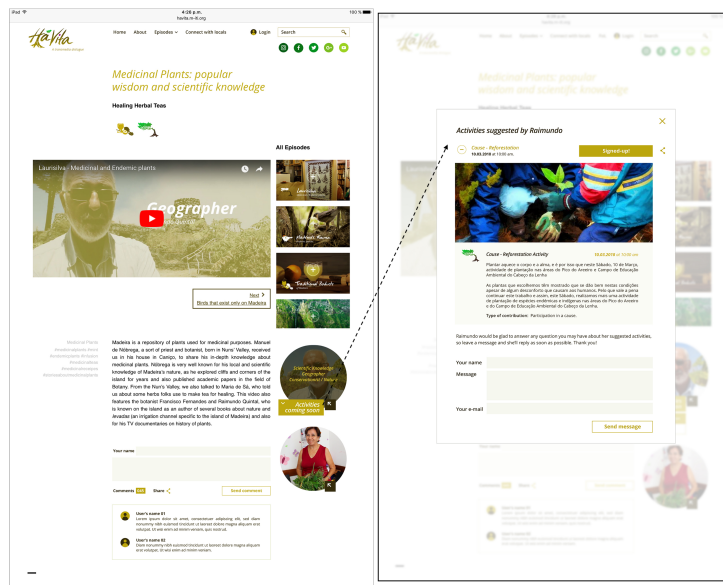
Fig. 3. Left: Complete list of all the locals participating in the platform with whom visitors and connect, and instructions how they can connect. Types of possible connections: Sending messages or enrolling in activities. *Center:* Locals profile page featuring the contacts from the visitors and activities they are currently organizing; *Right:* Locals form for adding a new activity.

| Connect with locals Page | Local Profile Page | Add Activity Pop-Up |
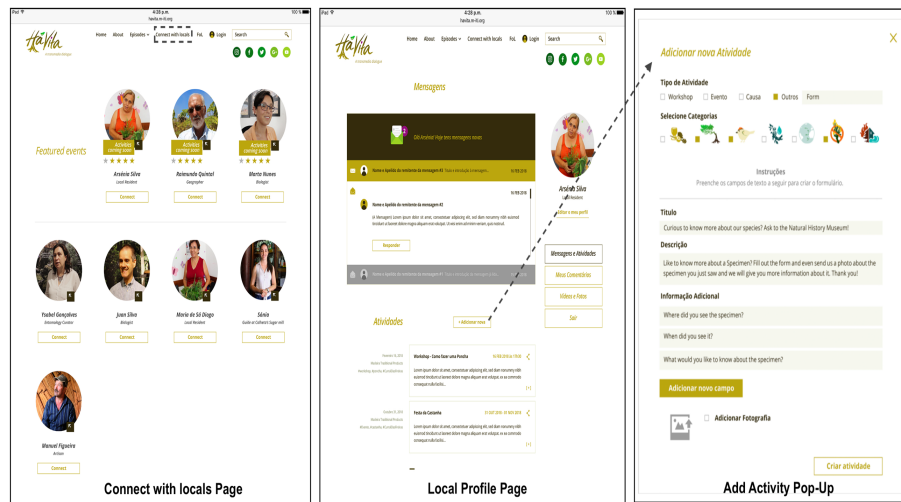
5 Evaluation of Há-Vita platform

The overall concept and design of Há-Vita were evaluated in several stages. We ran a pilot test with visitors of the Island to gather first insights, followed by a series of focus groups with three distinct user segments: the local residents, the local scientists, and the tourists. In the next section, we describe this process of evaluation and its findings.

5.1 Pilot study of Há-Vita 1.0

The pilot study aimed at testing the research protocol, as well as evaluating the effectiveness of the content on the users and, finally, the website graphical user interface. A table was set up in a hotel lobby with a computer and tablets (Fig 4.). Researchers invited the guests to interact with the platform. A semi-structured interview was designed to probe into three main areas: A) Content, B) Interface C) Connection with locals. The whole protocol lasted 15/20 minutes. 12 European guests, age range 14 to 65, participated in the pilot and were rewarded with a locally produced vegetal sponge.

Interviews were recorded and later transcribed into NVivo software. Main results are summarized in Table 1.

Table 1. Results of the pilot study, grouped by NVivo nodes and illustrative quotes.

Platform Content: 1) Design and interaction were simple; 2) Participants enjoyed and found the content shared by the locals relevant; 3) Scientific content was valued to confirm knowledge obtained during their explorations; 4) Videos featuring the locals sharing folk content was perceived as being authentic; 5) Há-Vita had enabled them to gather new knowledge about Madeira and its ecosystem; 6) Added motivation to explore the island more; 7) Participants imagined accessing Há-Vita, before and during the travel;   *PSU1- "she is really authentic, (...) I could meet her out in the street, and she would just talk to me like this…"*   *PB1-"I haven't realized it been so many natural disasters! (...) deforestation, so that's what I discovered, and I also feel... sympathy for the people who were caught in the natural disasters…"*   *PJI1-"I was unaware of all this unique nature, there is more than you realize, different birds, plants, different species"*   *PSU4- "I think the combination of being out there and then catching up with background is very good..."*
Improvements: 1) Include advice on what to do or not do in order to preserve local nature, biodiversity, and traditions; 2) Videos should be tied with locations around the island (e.g., That bird can be found in X location/city); 3) Add a clear message about the website goal; 4) Add a short textual description before the video summarizing the subject;   *PSU6- "It is simple to navigate and go around it... (says spontaneously before the question)"*   *PGH1-"(...) interesting videos, but it doesn't become clear... what you want to tell me..".*   *PSIT1- "just tell us want we can do … people don't like to think…"*
Visitors and locals' interaction: 1) the videos triggered curiosity about the locals; 2) Some participants felt prompted to interact with the interviewee while locals or others foresee difficulties in the communication and logistics;   *PS2-" (...) I would ask the best places to go, about to finding about locals, what they are doing, maybe there are traditional festival going on if there is something very special happening..."*   *PSU7- "The Poncha lady, I think that is really authentic. I would ask for recipes, how to find the herbs out in the trails."*   *PA1-"(...)not really, only between a group of friends, but not me, myself"*   *PSH2- "That is very difficult because they obviously speak a different language (...)"*

Implications of the findings for the Há-Vita design and follow-up study: While the platform was generally well received, visitors are transient individuals and do not usually have time to divert from their holidays plans. As a result, most of them engaged in the study in a rushed and reluctant way, echoing[25] findings. Therefore, we changed our method to a focus group discussion in order to have participants committed to discussing the platform for a longer period of time and to probe more in-depth opinions.

5.2 Focus groups study

The new study was designed to understand how different stakeholders would respond to the concept of the Há-Vita platform, involving local community members who held "popular/folk knowledge" (e.g., popular wisdom about medicinal plants), local "experts" (e.g., local scientists and tourists operators) and visitors of Madeira island (Fig 4.). The sessions were moderated by two facilitators and two assistants who helped in the setting up and documentation of the sessions (always the same across sessions).

Sessions were recorded both in audio and on video; observations and non-verbal inter-actions were noted.

Fig. 4. Images from the conducted evaluation sessions

Pilot Study Setting   FG Local Experts   FG Local Community   FG Visitors

Design of the Focus-Group Session.

The facilitator presented the general purpose of the focus group (FG), introduced the research team, and gathered consent forms. This was followed by an icebreaker activity and then the Há-Vita platform was showcased, projected onto a large screen followed by a discussion designed to elicit comments and feedback on the platform. Throughout the text, we have replaced the participants' names with identity codes (IC) referring to which FG and the id of the participant (e.g., FVC: Focus Visitors Letterfakename).

Table 2. - Characterization of the participants and focus group sessions

Sessions / Participants General Characterization	Duration/Nº Participants
Local Community: Age ranging from mid-thirties to late sixty, residents in Nun's Valley locality; Elderly handcrafters, farmers and stay-at-home women, or retired people, but all were active members of the community center; IC's: FLC; FLL; FLA; FLM; FLJ; FLMR	80min / 6
Experts Community: Participants with different expertise: 1 environmental researcher/geographer (FERQ), 1 Biologist (FECG); 4 participants with background in tourism (one travel agent (FERP), one guest relations man-ager (FESC), the head of the government touristic projects (FECN) and a tourism Professor from the local university (FELM);	120min / 6
Visitors: 6 females and one male with ages ranging from 24 to 44; All par-ticipants had a higher education degree; 2 participants were Portuguese (from mainland Portugal), 1 Romanian, 1 Italian, 1 German, 1 Turkish and 1 Spanish; IC's: FVMM, FVMF, FVIA	60min / 7

5.3 Results

In this section, we present the main results from the focus group (FG). All FG were recorded and audio files transcribed. The resulting data was analyzed by two research-ers using a thematic analysis approach supported by NVivo software. Firstly, research-ers used open coding to create high-level categories individually, then reviewed and merged their separate efforts into new common categories. Secondly, the researchers grouped the information into affinity diagrams used to explain the relationships be-tween categories. Thirdly, researchers organized the most frequent concepts and in-

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sights found for each focus group, followed by the description of each one with illustrative quotes given by users in the interviews. We will present the results from each focus group separately. The overall findings and discussion are presented in Section 6.

Table 3. – Summary of the Local Community Focus Group.

Positive reactions of the community to the multimedia content of Há-Vita platform: 1) Participants enjoyed watching its content and felt proud of viewing the local community members featured in the video interviews (FLC2); 2) Most enjoyed videos: The Laurisilva Video (featuring a priest-scientist), the Traditional Products explained by locals themselves, and the Exotic Species video; 3) The community members expressed a desire to collaborate in producing further content and suggested several topics they would like to contribute to (FLC1, FLC1) .
FLC1: "This is a great initiative… will you continue making more videos?"   *FLC2: "We have great things (...)why not showcase them to others…"*   *FLC1: "More wickerwork, it's a local handcraft and a thing they might like. Here are also women who know how to embroider, by showing the embroidery of Madeira."*
Há-Vita a catalyst for interaction between the local community and visitors: 1) Participants were very open to, and happy with, the idea of having a deeper and more authentic connection with the tourists (FLC4); 2) Participants recognized in the Há-Vita platform an opportunity to share the local culture eventually leading to attracting people to the small village and retaining them (FLC3). Apart from festivals/parties, tourists visit the location just for sightseeing purposes, spending little time in the village itself (5-10 min); 3) Participants were excited about the idea of organizing workshops for tourists and immediately started brainstorming types of workshops (FLA4, FLL1). The workshops would be very valuable, not only for economic reasons but also to keep traditions alive (see FLM2). They mentioned that some of the customs/traditions are being lost since younger generations are not interested in them. However, if there is (business) potential in the workshops, they might change their minds (FLM1). 4) The local community also expressed interest in learning something from the visitors (referring to a cultural exchange).
FLC4: "We want to welcome them all, as long as they're good people."   *FLC3: "(…) promoting the products would be a great help. It's very important, It's good for the local business, to expose the parish itself. FLM [complementing]: Because we don't want tourists who arrive here to stay only for 5min, have a coffee and leave.*   *FLM2: "it's not just about selling [the baskets] there must be teaching and learning."*   *FLM1: "the workshops could be also a way to attract youngers to learn these crafts… at first could be just for fun but then they might enjoy it."*   *FLA4: "This godmother of mine would love to make some chestnut soup, to dry and tread the chestnuts.; FLL1 (complementing): More wicker work, it's a local handcraft and a thing they might like. There are also women who know the embroidery of Madeira."*
Concerns: 1) Participants were worried that such a platform could not be developed in time within their lifespan that would be something more for their children or grandchildren to take advantage of; 2) Participants expressed that they would not be able to interact with the digital platform to add information, videos, or propose workshops, and they would need help from their children or grandchildren (FLA6).
FLA6: "It's too much work for us, it would have to be my daughter or Mr Manuel's daughter it's difficult for us."

Table 4. Summary of the Local Experts Focus Group

Há-Vita general impressions: 1) Local experts enjoyed Há-Vita and considered it a good start to be further expanded. They found the content interesting and dynamic, except for the "Natural Disasters" which was labeled as too sensitive to be disclosed to the visitors in this open way; 2) Participants valued the initiatives that promoted the connection between tourists and locals through organized workshops as it would help support locals' small business initiatives as well as farming and agriculture (FERQ1, FERP2, FERP3). Participants mentioned that these types of "connecting" activities would make visitors care about the location and revisit Madeira (FECG1).; 3) Participants found the idea of a network of "Contacts, Activities, and people" novel and worth pursuing (FERP1).
FERQ1: "(...) it should be either a monetary offer or a fixed price. If we have something to offer, there are costs involved. FECG1: Otherwise people don't show up." (complementing) *FERP1:"There is a platform... Be local, where people can sell a product. In September, if I have the grape harvest, and people can sign up for my activity. Tourists do look for these things..."* *FECG1: "These types of connections are what makes visitors feel well, come back and pass on the good word about Madeira.* *FERP2: "Some tourists go to some typical houses, that are not on a known route. They already know there is this man who offers a liquor (...) and most of the times the tourist leaves a monetary gratification and that man already won his day. (...)"* *FERQ2: "We have a collaboration with some hotels (...) Their guests sign up and participate in the tree planting/reforestation activities. Some become members (of the association)."*
Concerns and future suggestions: 1) Some of the local knowledge holders may present a lack of familiarity with technology and foreign languages and this should be taken into account in future iterations; 2) Several political issues were mentioned, such as more government intervention and support to preserve the local natural heritage (FERP7, FERP6). Há-Vita could work as a place where locals could publicly emphasize threats to the environment in order to draw the attention of the government; 3) Experts worried about the popularity of Madeira as a tourist destination and how that is affecting the resources of the island (in particular the natural trails and Laurisilva forest) (FERP6); 4) Participants suggested that Há-Vita could have the role of an educational tool regarding the local values (FERP8, FECN2); 5) Participants suggested to highlight the features that support direct communication and interaction between locals and visitors. Furthermore, a calendar showcasing activities would facilitate planning and participation before reaching the destination.
FERP7: "Everyone wants to "gain" from the tourism but they don't want to protect the "product of madeira" – it's Nature, locals don´t participants in the volunteering activities." *FERP8: "Tourism need to be educated – eg. not to pick plants, feed birds and not to go on trails who are closed - "they need to learn the household rules."* *FECN2: "Even though I work for the government... it needs to be educated as well."* *FERP6: "Similar to other cities, limits must be imposed ... if we don't preserve and limit ... everything will be destroyed (referring to Laurisilva forest, and limits in the trails)."*

Table 5. Summary of the Visitors Focus Group

Appreciation for the authenticity and dynamic content: 1) Participants appreciated how the information was presented in an informative and timely way and how the short and dynamic videos help to keep the focus on the content (FVIA2, FVMF2). In particular, they enjoyed the authenticity of the local people featuring on videos, and the mix between popular and scientific knowledge; in particular, the experts' reasoning as opposed to an emotional perspective (FVIA1); 2) Participants mentioned that the platform can become a powerful database of knowledge and they mentioned, Padre Nóbrega (a community cherished priest and botanist) who passed away soon after releasing the interview with the Há-Vita production team; 3) Participants also shared that they learn new things about Madeira from the video content. Several users highlighted the richness of information and authenticity value of the video about the exotic plants (luffas), the medicinal plants, and the video explaining the origins of Poncha.

FVIA: "I also like that idea that you put "normal" people in the videos, that is really cool. It is nice to have experts but also just the locals… it gives a sense of authenticity."   *FVMF2: "The graphic elements helped to retain the information of what the people were saying.*   *FVIA2: "it's like dynamic, this moderation between the videos."*   *FVMF3: "(…) that database, that recorded knowledge. Because, that priest already died, right? His way of presenting information is really interesting. You see, he really feels passionate about it."*

Suggestions to strengthen the Há-Vita platform and stimulate the connection between visitors and locals: 1) The activities proposed by the locals should be laid out clearly so that people know exactly what to do and what to expect (FVGA1). When volunteering activities, clearly state why they are important and what benefits they can have for the local community. Explain what is unique about the workshops/activities promoted through Há-Vita (FVIA5, FVMF3). Echoing the "Experts" group, participants suggested a more efficient way to present the activities, for example in a calendar or a map, so that visitors could plan the activities according to their stay (FVMF4, FVSG1); 2) Expand and add more content and topics; there could be a crowdsourcing component where people could submit their videos about specific topics; 3) Use infographics to summarize the information from specific videos. Finally, they expressed the desire to have more videos inside each of the main categories and express the interest in having fun facts or curiosities that could be added as text or images in the webpage of each main topic; 4) In terms of the design and videos of the website, participants pointed out small improvements, such as the quality of sound in specific videos, keeping the consistency between videos in the flow and pace of the content (e.g. Some videos were more balanced than others in terms of pace and some videos had more infographics than others).

FVIA5: "For community spirit, sometimes don't need the same language, I feel like if you really want to do something you do"; FVMF3 (complementing):" put there, like lady doesn't speak English but it's a fun activity, or you're gonna meet the locals, it's a very interesting experience."   *FVGA1: "You could write as a traveler what is the benefit/contribution? Is it the time? Is the place? It takes one hour or tell me that you will bring me to this place where I have never been before."*   *FVSG1:" (…) little more information about the people who speak and maybe a little bit of summary of the content... in the beginning or after." FVMF4 (complementing):": "(..) if we could see the map of Madeira and activities, and everything that they are talking about. We can know where about."*

6   Discussion

The section is divided into three subsections: 1) Enabling Local Empowerment, where we discuss the potential for Há-Vita to empower residents through the four levels of community-based tourism; 2) Authenticity and Visitor Experience discusses to what

extent tourists found the content and experience that the platform offers authentic, and 3) Preliminary insights and general lessons learned distilled from our experience that inform the development of similar platforms with the design rationale of raising awareness about local values while fostering connections between locals and visitors.

6.1 Enabling Local Empowerment

Economic empowerment. In the FGs, locals, especially those from Nun's Valley, expressed a striking enthusiasm and willingness to organize activities for visitors such as workshops, tours, and visits to specific local areas. Although our participants did not stress economic benefits per se, they were open to engaging with visitors through Há-Vita and receiving a financial reward for the activities they could eventually organize. For example, locals were interested in the possibility of charging visitors for events such as wicker basket workshops as well as benefiting from a fair favor exchange. Visitors could, for instance, engage with locals from less urbanized areas in a fair exchange such as helping out in the winemaking and then receive a traditional lunch. A platform like Há-Vita could add value to the community and location by proclaiming new and authentic activities for tourists to engage in (FERP2); It could also lead to an "indirect" economic benefit that would come from the spread of the destination positive image (FECG1).

Psychological empowerment. During the FG in Nun's Valley, locals showed pride while watching their community represented on Há-Vita, through their comments and facial expressions (FLC2). They voiced that the platform was a powerful means to showcase local traditions to visitors. For this reason, several participants said out loud that they wanted to further contribute with novel content. They also proposed activities in which they could share their culture and crafts (FLC1). This need for more information was later on reinforced in the FG with visitors, in which they recognized how the multimedia part of the platform could become a "powerful database of knowledge" (FVMF3). Based on these results, Há-Vita could function as a self-esteem empowering tool for the community members, because it highlights values of the local culture, natural resources, and traditional knowledge.

Social empowerment. In our FGs, Há-Vita emerged as a potentially socially empowering tool by improving individuals' and families' cohesion while working together towards the ecotourism goals and activities. Locals in Nun's Valley mentioned how such a platform could be used to trigger youth interest and instill pride in learning old customs and traditions (FLM1). Elderly participants manifested a need for having the assistance from their children or grandchildren to use Há-Vita and communicating in foreign languages (FLA6). On one hand, this lack of digital literacy and foreign languages could be seen as an issue but it could provide the local community with bonding opportunities across generations as they work together, leading to an improvement of digital literacy for those elder locals. The FG with locals (scientific knowledge), revealed a certain level of disempowerment of the locals. From their words, companies are basically the only entities that profit from the tourism, but do not take action to protect the main "product of Madeira," which is nature and culture (FERP7).

Political empowerment. In the FG with scientific knowledge holders, participants spent a significant time discussing how Há-Vita might support community political empowerment. They discussed how the platform could provide themselves with a forum, in which people could speak out about pressing issues allowing them to address the regional government, to raise questions and suggestions. These participants were very concerned with tourism policies and pointed out the need to raise the regional government's awareness towards nature and traditions (FECN2). These findings led us to further envision Há-Vita as a potential channel of social and political change. This would address the concerns of Di Salvo et al. [9] and Manyara et al. [13] and could generate collective action by influencing policy and regulations regarding tourism and environmental preservation and awareness.

6.2   Authenticity & Visitor Experience

In general, our results suggested that visitors perceived the video content as authentic and engaging. Participants appreciated Há-Vita as a medium that offers insights into the cultural background of the local community and nature through video content. In this way, our findings reinforce our design rationale of providing starting grounds for interactions with locals. Such interaction could even begin before arriving at the destination, as suggested not only by several participants but also by Moyle et al. [25]. Likewise, Há-Vita could allow alternative touristic experiences benefiting those visitors wanting to enter "back regions" of the locale [15] but also promoting alternative routes and situations, eventually taking pressure off some of the most visited places. Indeed, our findings showed that most of the visitors that we engaged with were surprised to learn about the island's difficulties (PB1). Tourism Board's webpages often promote destinations as immaculate places and, as visitors learned about alternative facts, it contrasted with the "paradise" image of the destination they held before the visualization of Há-Vita. At the same time, however, the experience of browsing Há-Vita brought the visitors closer to the authentic reality of the island (PSU1, PSU7, FVIA).

Our findings suggest that Há-Vita shone a light on the island's values (biodiversity, folk knowledge and traditions), not only for visitors but also for the rest of the stakeholders (PJI1). Locals and visitors both manifested an interest in extending and regularly updating the Há-Vita content. This resonates with what Novacek [32] suggested, that by utilizing multimedia content we were able to engage the public not only in the biodiversity of the island but also with its traditions and folk knowledge (FVMF2, FVIA2). Moreover, visitors found the content interesting because it added to their touristic experience and local field trips. While local experts praised the website for its ecological and local values message, we were also encouraged to be more assertive and clear when posting these messages (such as "house rules"), making clear calendars, communication channels, and information more easily available (FVGA1, PSIT1).

Establishing connections between visitors and locals does not come without challenges, something that has been previously approached in the CBT literature [13]. Locals may have unique expertise but may not know how to share it with visitors. As seen previously, this could be related to digital literacy issues or due to language barriers.

The latter was also a concern shared by visitors. However, they were open and willing to make efforts to overcome this (FVIA5).

6.3   Summary of Preliminary insights

Design for local values conservation, valorization and authenticity: Local values can be lost over time. Hence, it is crucial to continually capture and preserve ephemeral and intangible heritage. Video interviews with local testimonials revealed themselves to be a great way to promote empathy and connection between visitors and locals; designers should leverage the pleasure of teaching and pride that locals have towards their local values; promote a balance between folk and scientific knowledge, and between reason and emotional content; if possible, complementary media such as infographics, animations, and visual summaries should be used to help viewers retain information.

Design for Digital (il-)Literacy and Inter-generational exchange: Locals enjoy seeing themselves, their products, and people they know personally, represented on the platform. However, digital literacy may be one of the biggest challenges for future design iterations of Há-Vita and similar platforms. Future design efforts could mitigate this challenge by facilitating inter-generational exchange and interaction, for example, through participatory design workshops. Besides this, the design process of such platforms should support elderly people and younger generations to co-create content and activities together, which could be also promoted in workshops.

Design for platform prosperity: At the current stage, Há-Vita only has content produced by the researchers themselves. In order to ensure sustainability of such a project, content creation workshops could be delivered to locals, so they could also contribute with content creation. Another approach is allowing crowdsourced content and subsequent monitoring mechanisms to ensure its quality. Future design efforts should delve into analyzing what would be the best format for the platform, whether a website or a mobile application (or even a mixed approach). Further research should address if locals (especially those with lower digital literacy) would be more comfortable in adding activities and content by using a custom-made application available on their mobile phones. Concerning the visitors' experience, designers should cater for different stages in the visitor experience; prior to the arrival to the location, but also during their stay. The design may leverage, for example, on a supplementary mobile application that supports a visitor's stay on the island by triggering relevant content based on their whereabouts. Furthermore, activities promoted by locals should be laid out clearly so that visitors know exactly what to expect (e.g., language, duration, outcomes, costs). When of volunteering activities, locals should clearly state why they are important and what difference they will make towards the local community.

Design carefully around CTB problematic issues by opening up to dialogue: we must acknowledge the risks and drawbacks of fostering community-based tourism and design around such things as: exploitation of visitors/locals; imbalance between the offered experience and the cost; addressing political concerns in its content and ensuring that locals have the means to control the benefits of exchanges with visitors. Designers could consider deploying strategies such as the integration of testimonies and evaluation of the proposed activities and hosts. Future iterations should account for

exchanges of information between locals, visitors, and government regarding problematic issues by providing open communication channels like forums of discussion.

7   Future work

Finding the best strategy to reach out to tourists, who are transient individuals and usually do not have much spontaneous time to spend, remains an open challenge. In the next iterations of Há-Vita, we aim to include a more significant sample and quantitative data, drawing for example on Há-Vita data generated through Google Analytics. Furthermore, it is important to realize that it will be hard to fully achieve our goal of empowering locals and stimulate interactions between locals and visitors, with design or video interviews only. It should be aided, as suggested by Di Salvo et al. [9], by administration collectives at the regional and national level. These local partners, as in the case of the Regional Tourism Board, may be able to facilitate the long-term engagement of both locals and visitors with the platform. Such steps would be fundamental in order to plan and run longitudinal studies for the platform. Finally, it would be crucial to thoroughly study how to achieve some sort of sustainability of the platform itself, and the impact of such a platform, both on the visitors' experience and on the local ecosystem.

8   Conclusion

In this paper, we presented the design and discussion of an Há-Vita, an online platform aimed at fostering awareness towards local nature and folk knowledge, as well as fostering connections between visitors and locals. We presented our design approach, and then discussions derived from our studies, in connection with the presented theoretical framework. This work makes specific contributions by further developing the trend of providing visitors with an authentic experience that not only has the potential to benefit the tourist experience, but also to empower the local community. Furthermore, we are filling a gap in the literature by adding the perspective of both visitors and locals in the interaction between them and laying out the barriers and strategies of undertaking user studies with visitors. Finally, we provided a discussion that may inform the design choices of future platforms with similar goals.

9   Acknowledgments

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