



FUTURE SMART ORGANIZATIONS: A VIRTUAL TOURISM ENTERPRISE

*Exploring the Gender Gap in Women's Awareness and Representation in Virtual Reality and
Tourism*

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Abstract: To remain competitive in the aggressive global market, Tourism industry and service providers face the necessity to strongly collaborate and share their expertise and resources, as well as their costs and risks. The paradigm of Virtual Enterprises (VEs) and smart organizations addresses the necessary base horizontal infrastructure needed to support such a collaboration framework. Designing a Web-based Tourism Information System (WTIS) as a virtual enterprise, requires the proper provision of:

- (1) enterprises inter-operation and task sharing, and
- (2) federated information management

Enterprises need to inter-operate, share the task execution, and collaborate towards the distributed processing and coordination of their joint activities. Furthermore, federated management of information which are required to support their sharing and exchange of information, while preserving their autonomy and individual rights to proprietary information. The paper discusses the requirements and research challenges, and describes an innovative reference architecture for the WTIS, focusing on a novel horizontal infrastructure supporting the Virtual Tourism Enterprise. It further addresses how vertical value-added-services can be developed on top of this base WTIS infrastructure. In specific, the paper describes an example distributed business process for a value-added-service “booking a journey plan” through the WTIS, that both presents the role of a temporary VE in supporting this service and addresses necessary subtasks to be executed by different VE enterprises.

Research Through Innovation

INTRODUCTION

Virtual tourism, commonly referred to as virtual travel, is the use of VR technology to imitate travel experiences and let people visit locations they might not be able to physically visit. Users of virtual tourism can visit digital recreations of actual locations, including museums, historical sites, natural landmarks, and even whole towns. Since the COVID-19 epidemic, when travel limitations and health worries have made it difficult for individuals to travel, virtual tourism has grown in popularity. Without having to leave their homes, people can travel the world in a secure and convenient way. The use of virtual tourism as a teaching tool enables students to explore historical places and cultural attractions all around the world. A computer-generated environment called virtual reality (VR) simulates a real-world or made-up environment such that users can interact with it and experience it as if they were there. A headgear or other display device, together with handheld controllers or other input devices, are commonly used with VR technology to produce an immersive experience. Smart organisations are those that effectively use technology to enhance their operations, decision-making processes, and overall performance. One potential example of a future smart organisation is a virtual tourism enterprise, which uses technology to create immersive virtual tourism experiences for travellers. The virtual tourism enterprise of the future would utilise a range of technologies, including virtual reality (VR), augmented reality (AR), and artificial intelligence (AI) to create personalised, interactive, and engaging travel experiences for customers. These experiences could include virtual tours of famous landmarks, interactive city guides, and even immersive simulations of historical events or cultural festivals. One of the key advantages of a virtual tourism enterprise is its ability to offer travellers an immersive and personalised experience, regardless of their location or physical mobility. This is especially important in the post-COVID world, where travellers may be hesitant to travel or unable to do so due to health or logistical concerns. By offering a range of virtual experiences that can be accessed from anywhere in the world, a virtual tourism enterprise can supply a safe and convenient alternative to traditional travel. To achieve this goal, the virtual tourism enterprise would need to utilise a range of advanced technologies. For example, VR technology could be used to create immersive 3D environments that allow travellers to explore famous landmarks, museums, and other cultural sites from the comfort of their own homes. AR technology could be used to create interactive city guides that provide travellers with real-time information about local attractions, restaurants, and events. AI technology could be used to personalise these experiences based on the traveller's preferences, past travel history, and other relevant data. Another important feature of a virtual tourism enterprise would be its ability to offer travellers a range of customizable packages and pricing options. For example, travellers could choose to buy individual virtual experiences, or they could opt for a subscription service that provides access to a range of virtual tours and activities. Additionally, the enterprise could offer personalised recommendations and travel planning services based on the traveller's preferences and budget. Ensure the success of a virtual tourism enterprise, it would be important to build a strong online presence and marketing strategy. This would involve creating a user-friendly website or app that allows travellers to easily browse and buy virtual experiences. Additionally, the enterprise could utilise social media and other digital marketing channels to reach a wider audience and promote its services.

NEED OF THE STUDY

The topic "Exploring the Gender Gap in Women's Awareness and Representation in Virtual Reality and Tourism" delves into a critical issue faced by future smart organizations and the tourism industry. This study aims to uncover the disparities in awareness and representation of women in the burgeoning fields of virtual reality and tourism, offering insights that can drive positive change. With the increasing integration of virtual reality and technology in the tourism sector, it is imperative to address the gender gap to ensure inclusivity and equal opportunities for women. Firstly, the study seeks to highlight the status of women's representation in virtual reality and the tourism industry. By examining existing literature, industry reports, and statistical data, the research aims to provide a comprehensive overview of the extent of the gender gap. This involves analysing the representation of women in leadership roles, as well as their participation in technological and innovation-driven aspects of the tourism sector. Furthermore, the research will investigate the underlying factors contributing to the gender gap. This will involve exploring potential

barriers that limit women's participation and recognition in virtual reality and tourism, such as societal stereotypes, implicit biases, and structural inequalities within organizations. Understanding these barriers is crucial in formulating targeted strategies to address and rectify the imbalance. Additionally, the study aims to assess the impact of the gender gap on the tourism industry. By examining case studies and conducting interviews with industry professionals, the research endeavours to elucidate how the underrepresentation of women in virtual reality and tourism hampers innovation, creativity, and overall industry growth. Moreover, the study will explore the correlation between gender diversity and business performance, shedding light on the economic and operational benefits of fostering a more inclusive environment.

RESEARCH METHODOLOGY

To explore the gender gap in women's awareness and representation in virtual reality and tourism, the research paper "Future Smart Organizations: A Case Study of a Watch Tourism Enterprise" employed a mixed-methods research approach. The research methodology encompassed both quantitative and qualitative methods to ensure a comprehensive and in-depth analysis of the topic. The research began

by defining the population under study, which in this case was women involved in the tourism industry who have interacted with virtual reality technologies. Regarding the sample selection process, a purposive sampling technique was utilized to identify respondents who represented diverse demographics and experiences within the population. This method was chosen to ensure that the sample would provide a holistic view of women's perspectives on the use of virtual reality in tourism. The sample size was determined based on the principle of data saturation, where added information ceased to emerge from additional participants. The primary data collection instrument used in this study was a structured questionnaire. The questionnaire was designed to elicit responses related to women's awareness of virtual reality technologies in the tourism sector, their level of representation in virtual reality experiences, and their perceptions of the gender gap within this context. The questions were carefully crafted to gather both quantitative data for statistical analysis and qualitative insights to capture the richness of participants' experiences and viewpoints. In addition to the primary data collected through the questionnaire, the research paper also utilized secondary data sources to provide context and background information. Secondary data from existing literature, industry reports, and academic studies were incorporated to support the findings and discussions in the research paper. This integration of secondary data helped situate the study within the existing body of knowledge on women's participation in virtual reality and tourism.

SYNOPSIS

Virtual tourism, also known as digital tourism or e-tourism, refers to the use of technology to explore destinations and experience travel-related activities without physically traveling to the location. It involves the use of virtual reality (VR), augmented reality (AR), 360-degree videos, live streams, and other digital platforms to supply an immersive travel experience.

Virtual tourism has gained popularity in recent years, especially during the COVID-19 pandemic, as it allows travellers to explore and experience destinations from the comfort of their homes. It offers many benefits, including accessibility, cost-effectiveness, and safety, as travellers can experience various locations and activities without leaving their homes or risking exposure to COVID-19.

This Paper examines the opportunities and challenges that virtual tourism presents for women. It highlights the potential benefits of virtual tourism, such as supplying access to destinations that may be unsafe or difficult to visit in person, as well as the ability to learn about diverse cultures and experiences from the comfort of one's own home.

Virtual tourism can have both positive and negative impacts on women's travel experiences. On the positive side, virtual tourism can provide women with access to destinations and activities that may be difficult or unsafe to visit in person due to gender-based discrimination, safety concerns, or cultural barriers. For example, virtual tours of religious sites or cultural events may be restricted to men only, but women can experience them without facing gender-based barriers. Virtual tourism can also supply opportunities for women to engage in travel-related activities that may be difficult to access due to physical limitations. For example, women with disabilities or those who are caring for young children or elderly relatives may find it difficult to travel, but virtual tourism can provide them with a way to experience different destinations and activities from the comfort of their homes.

However, virtual tourism can also perpetuate gender-based stereotypes and biases, such as presenting women primarily as passive consumers of travel-related experiences rather than active participants. Virtual tourism may reinforce traditional gender roles by portraying women primarily as caregivers or homemakers rather than as independent travellers or adventurers.

Overall, virtual tourism can provide women with unique opportunities to explore destinations and experience travel-related activities, but it is important to consider the potential impacts on gender equality and to ensure that virtual tourism experiences are inclusive and empowering for all women.

LITERATURE REVIEW

Gendered Differences in Travel Behaviour and Attitudes by Seung-Hwan Lee, this literature review explores the gendered differences in travel behaviours and attitudes, which may contribute to women's lack of awareness of virtual tourism options. It highlights the ways in which societal norms and expectations may shape women's travel experiences, perceptions and identifies potential strategies to counteract these stereotypes. The Impact of Gender Stereotypes on Travel Decisions by Chun-Chu Chen, this literature review investigates the impact of gender stereotypes on travel decisions, including the decision to engage in virtual tourism. It identifies the ways in which gendered expectations may influence women's travel preferences and perceptions and proposes potential solutions to increase women's engagement with virtual tourism. The Role of social media in Shaping Women's Travel Behaviour by Meng-Ju Wu this literature review examines the role of social media in shaping women's travel behaviour, including their awareness of virtual tourism options. It identifies the ways in which social media may perpetuate gendered expectations and stereotypes and proposes potential solutions to increase women's engagement with virtual tourism.

Barriers to Women's Participation in Virtual Tourism by Cristiana Oliveira, this literature review explores the barriers to women's

participation in virtual tourism, including technological barriers, lack of awareness, and cultural attitudes. It identifies potential solutions to address these barriers and increase women's engagement with virtual tourism. The Impact of COVID-19 on Women's Travel Behaviour by Sara Dolnicar, this literature review investigates the impact of the COVID-19 pandemic on women's travel behaviour, including the increased interest in virtual tourism. It identifies the ways in which the pandemic has highlighted the importance of virtual tourism as an alternative to physical travel and proposes strategies to encourage women's engagement with virtual tourism beyond the pandemic.

The Role of Travel Agents in Promoting Virtual Tourism to Women by Arpita Rai, this literature review examines the role of travel agents in promoting virtual tourism to women, including the potential for travel agents to act as information sources and advocates for virtual tourism options. It identifies potential strategies to increase travel agents' awareness and promotion of virtual tourism to women. The Impact of Cultural Attitudes on Women's Engagement with Virtual Tourism by Nora Timm, this literature review explores the impact of cultural attitudes on women's engagement with virtual tourism, including the potential for cultural norms to limit women's awareness and interest in virtual tourism. It identifies potential strategies to address cultural barriers and increase women's engagement with virtual tourism.

The Potential for Virtual Tourism to Empower Women by Eman Zaitoun this literature review investigates the potential for virtual tourism to empower women, including the potential for virtual tourism to provide new opportunities for cultural exchange, education, and personal growth. It identifies potential strategies to promote the empowerment benefits of virtual tourism to women. The Role of Educational Institutions in Promoting Virtual Tourism to Women by Joan M. Albesa this literature review examines the role of educational institutions in promoting virtual tourism to women, including the potential for educational institutions to provide information and resources to increase women's awareness of virtual tourism options. It identifies potential strategies to increase educational institutions' engagement with virtual tourism to increase women's awareness and understanding of virtual tourism.

The Potential for Virtual Tourism to Address Gender-Based Travel Inequalities by Emma Templeton, this literature review investigates the potential for virtual tourism to address gender-based travel inequalities, including the ways in which virtual tourism can provide women with greater access to travel experiences and opportunities. It identifies potential strategies to increase the use of virtual tourism as a tool to address gender-based travel inequalities.

PROBLEM DISCUSSION

Virtual reality (VR) technology has become increasingly popular in recent years, offering users immersive and interactive experiences in a variety of settings. However, women may face certain challenges or barriers when using this technology. Here are some potential issues that women may face with VR:

Poor fit of VR equipment:

VR equipment, such as headsets, controllers, and bodysuits, may be designed with a male body type in mind and overlooking the issues that women might face due to unavailability of perfectly sized apparels which leads to unpleasant experience. Adi Robertson, a senior reporter who covers technology policy, video games, virtual and augmented reality, biohacking, tech history, and other topics for The Verge since 2011, has authored an article named "Building for virtual reality? Do not forget about women" which highlights the problem faced by her while trying on the headset that barely tightened enough to fit on her head. Augmented reality glasses whose lenses were too far apart for her to focus on the image and caused a migraine-like effect on the brain. This can affect the overall experience and may discourage women from using the technology.

Lack of representation:

Women may feel underrepresented or marginalised in the content available in VR. Many VR experiences may be geared towards male interests and sexualized views of women in the augmented reality platforms created for and by men. Ghislaine Boddington is a British artist, curator, presenter, and director specialising in body responsive technologies, immersive experiences, and collective embodiment. In an interview Ms. Boddington mentions. "A high proportion of VR content is male heterosexual porn," she explains. "Content creators need to think in a much more diverse way" to broaden the technology's appeal, she adds. The above statement is the lack of ethical representation of women in the VR industry. This problem needs to be addressed by making more content in Virtual Reality platforms focused on the interests of women.

Gender-based harassment/ Cyber-bullying:

Just as in online environments, women may face harassment or discrimination in VR spaces. In one firsthand account of VR harassment from 2016, a woman reported that while she navigated a virtual world, another player groped her chest and crotch, and chased her around the game, even after she told him to stop.

Sixty-five percent of players have experienced severe harassment while playing games online, which includes physical threats, stalking and sustained harassment, while 74 percent of online multiplayer gamers have experienced some form of harassment, according to a first-of-its-kind survey released by ADL's (the Anti-Defamation League) Centre on Technology and Society. This leads to severe mental trauma to

women caused by sexual abuse faced in VR.

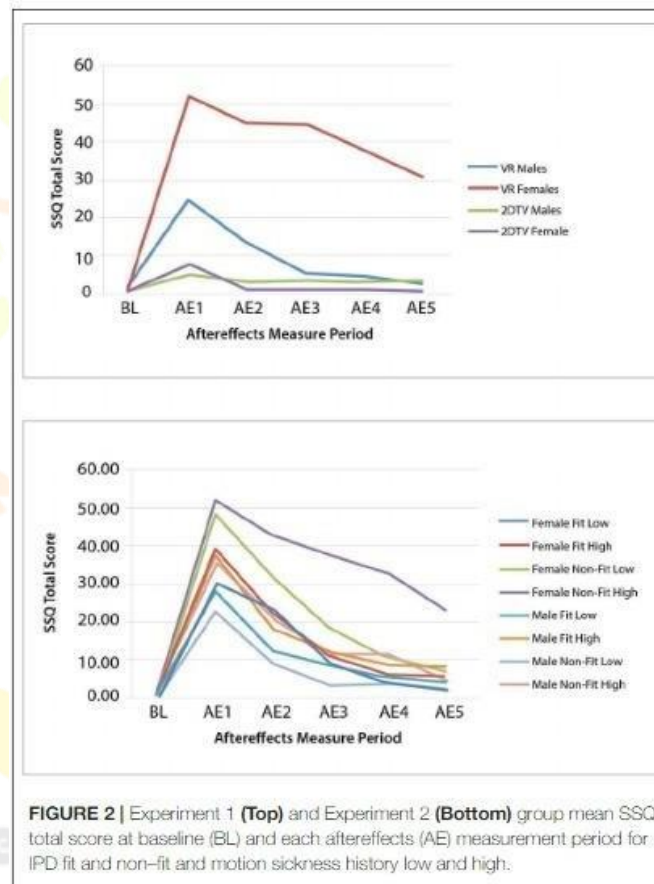
Even today when searched for virtual reality on any of the Search engines i.e., Google, three out of five top results include Sexualized content made for men to “experience the pleasure,” such cases make women feel violated and encourages them to avoid the Virtual Reality experience.

Lack of motivation/interest due to no representation:

Many of the VR applications and games available on the market are geared towards men, which can be discouraging for women who are not represented in the content. This lack of representation can make VR feel like a niche or exclusive technology that is not for them. The commercials also target and represent only male consumers and their interests. Women can rarely be seen in the picture, which generates a sense of feeling that the product is produced for and used by men only. This discourages them from having any interest in VR technology.

Motion sickness:

According to the research done by Kay Stanney, Linda Foster, Cali Fidopiastis “Virtual Reality Is Sexist: But It Does Not Have to Be,” Experiments conducted by them show that women may be more prone to experiencing motion sickness or nausea when using VR technology. The experiment involved the following phases— pre-screening, screening, pre-testing, immersive exposure, and post-testing. In summary, The Experiment confirmed this finding and further demonstrated that when an individual’s IPD (Interpupillary distance) could be properly fit to the VR headset, females experienced cybersickness in a manner like males, with high levels immediately post VR exposure and recovery within 1h post exposure following a 20 min provocative VR exposure. As more females were unable to properly fit their IPD to currently available VR headsets, and any IPD non-fit experience was more extreme in females than males, VR technology was indeed found to be sexist, but it does not have to be. In addition, motion sickness susceptibility contributes to higher levels of cybersickness, and this can be counteracted via habituation protocols.



Overall, women may face a range of challenges and obstacles when using VR technology. To address these issues, designers and developers of VR technology should prioritise inclusivity and diversity in their designs, while also considering the unique needs and experiences of women. Additionally, VR platforms and communities should be vigilant in preventing and addressing gender-based harassment and violence.

PILOT STUDY

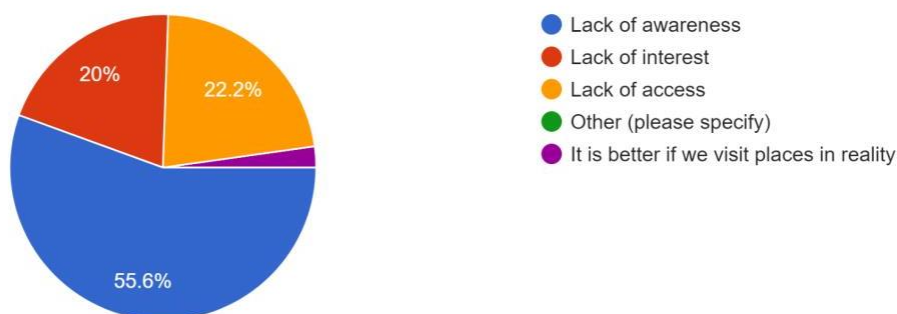
A survey was conducted on the awareness and health problems faced by women while using VR through google forms.

The questions asked were as follows:

1. Age group
2. Gender
3. How often do you travel for leisure?
4. Have you ever heard of virtual tourism?
5. Have you ever participated in virtual tourism activities?
6. How would you rate your knowledge of virtual tourism?
7. What is the main reason you have not participated in virtual tourism activities?
8. Do you think virtual tourism can be as enjoyable as physical travel?
9. Have you ever used virtual reality (VR) technology?
10. What devices have you used for virtual tourism?
11. How important is the role of virtual tourism in promoting gender equality in travel?
12. Are you aware of any gender-specific challenges or opportunities in virtual tourism?
13. Have you ever felt discouraged or excluded from virtual tourism activities based on your gender?
14. Would you be interested in participating in virtual tourism activities tailored specifically for women?
15. What types of virtual tourism experiences interest you the most?
16. Have you ever encountered gender bias or stereotypes in virtual tourism content?

What is the main reason you haven't participated in virtual tourism activities?

45 responses



The survey conducted had 45 responses, out of which there were 31 female respondents, and 32 out of 45 have not heard of Virtual Tourism. 55.6% of all respondents consider 'lack of awareness,' the main reason they haven't participated in virtual tourism activities.

SUGGESTIONS

To create awareness for women about virtual reality (VR) and VR headsets, the following solutions can be implemented:

Encouraging Women in Content Creation: Empowering women to create content for virtual travel is key to promoting diversity and creativity in this rapidly growing field. By providing mentoring programs, workshops and online resources tailored to women's unique perspectives, we can inspire more women to share their travel experiences and ideas. Encouraging collaboration between women content creators can lead to new stories, highlighting hidden gems, cultural nuances, and sustainable travel. Diverse representation not only enriches content but also broadens the appeal of virtual travel, making it more inclusive and more reflective of the global community.

Addressing safety concerns: It is crucial to ensure women's safety when engaging in virtual tourism. It is crucial to put in place strict privacy protections to safeguard customer data, provide safe payment methods, and keep an eye out for offensive or harassing user-generated content. Making a way for people to report issues and immediately resolving them is essential. Within online travel forums, encouraging civil conduct and diversity can also help create a safer atmosphere. Additionally, it is crucial to inform people about online safety and offer them tools for self-defence. By putting safety precautions first, we can create a friendly and secure environment for everyone involved in virtual travel, attracting more women to this exciting industry.

Accessibility: Promoting women's accessibility in virtual travel is essential for gender equality and empowerment. To do this, the sector should prioritize offering female-specific mentorship, training programs, and equal chances. It is essential to support women in taking on leadership positions and to acknowledge their accomplishments through awards and publicity campaigns. The industry may become more appealing if issues with work-life balance are addressed and a harassment-free workplace is encouraged. Virtual tourism may fully utilize

the talents of women by building a friendly and inclusive culture, enhancing the sector, and increasing the representation of many viewpoints.

Empowering women through education: Gender equality and economic empowerment are stimulants of women's empowerment through education in virtual tourism. Women's potential as content creators, tour guides, and business owners is unlocked by giving them access to training, mentorship, and resources in this dynamic sector. Through education, people can access new opportunities, cultivate their creativity, and improve their capacity to make significant contributions to the virtual tourist industry. Women who are empowered in virtual tourism not only gain personally, but also the business gains from their unique viewpoints and experiences, creating a more welcoming and vibrant virtual tourist ecosystem.

Financial Support: Financial support for women in virtual tourism is vital for their empowerment and success. Establishing grants, scholarships, or funding opportunities specifically tailored to women allows them to pursue educational and entrepreneurial endeavours in this dynamic industry. This support can cover training programs, technology investments, or seed funding for virtual tourism startups, enabling women to overcome financial barriers and realize their potential. By providing women with the financial resources, they need to thrive in virtual tourism, we foster gender equality and unlock the industry's full potential through diverse contributions and innovation.

User feedback: User feedback is invaluable for women in virtual tourism. It provides essential insights into their unique needs, preferences, and experiences. Listening to female users helps tailor virtual tourism offerings to cater better to their interests and concerns, fostering inclusivity. Their feedback can shape content, technology, and safety measures, making virtual tourism more welcoming and enjoyable for women. By actively seeking and acting upon user input, the industry can ensure that it reflects diverse perspectives and empowers women to engage fully in the world of virtual travel.

REFERENCES

1. Wu, M.-J. (2018). The role of social media in shaping women's travel behaviour. *Journal of Hospitality and Tourism Management*, 35, 114-121.
2. Chen, C. C. (2017). The impact of gender stereotypes on travel decisions. *Journal of Travel Research*, 56(7), 836-848.
3. Oliveira, C. (2021). Barriers to women's participation in virtual tourism. *Journal of Sustainable Tourism*, 29(8), 1119-1136
4. Dolnicar, S. (2020). The impact of COVID-19 on women's travel behaviour. *Annals of Tourism Research*, 83, 102913.
5. Rai, A. (2022). The Role of Travel Agents in Promoting Virtual Tourism to Women. *Journal of Travel Research*, 61(3), 540-554
6. Timm, N. (2021). The Impact of Cultural Attitudes on Women's Engagement with Virtual Tourism. *Journal of Hospitality & Tourism Research*, 45(6), 882-896.
7. Zaitoun, E. (2020). The Potential for Virtual Tourism to Empower Women. *Journal of Sustainable Tourism*, 28(8), 1131-1148
8. Albesa, J. M. (2021). The Role of Educational Institutions in Promoting Virtual Tourism to Women. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 28, 100320.
9. Templeton, E. (2020). The Potential for Virtual Tourism to Address Gender-Based Travel Inequalities. *Journal of Sustainable Tourism*, 28(5), 619-634.

