THE IMPACT OF WEB 2.0 ON SUSTAINABLE TOURISM

ARWA AHMED GHARAMA[1], BABAK BASHARI RAD[1,*], MOHAMMAD AHMADI[2], MOHAMAD FIRDAUS CHE ABDUL RANI[1], MERVAT BAMIAH[3]

[1] Faculty of Computing, Technology and Engineering, Asia Pacific University of Technology and Innovation, Technology Park Malaysia, 57000 Kuala Lumpur, Malaysia
[2] School of Computing, Engineering and Mathematics, Western Sydney University, Parramatta NSW – 2150, Australia
[3] College of Computer and Information Sciences, Prince Sultan University, Riyadh 11586, Saudi Arabia
*Corresponding Author: babak@iraseat.com

Abstract

The emergence of Web 2.0 has enabled enormous revenues from online products and services provided to users via the internet. Web 2.0 facilitates users with a wide array of websites and applications that enable them to buy, sell, pay, browse, post, share, among other online activities. This study focusses on investigating the impact of web 2.0 on sustainable tourism, and customer decision making. Tourism attracts people who enjoy traveling around the world for exploring, education, adventure, and pleasure purposes. Sustainable tourism involves tourists visiting with respect to culture environment and people of the destination country, which will create a positive impact on the environment, economy, and society of foreign countries. This explanatory study has deployed the deductive approach for testing the research hypothesis. The research findings depict that Web 2.0 has a significant positive impact on sustainable tourism and customer decision making.

Keywords: Regression analysis, Social networking, Sustainable tourism, Web 2.0.

1. Introduction

The increasing number of active users connecting to the Internet for social networking, bookmarking, collaborating, and information sharing besides other activities had added a pool of massive contents on the web [1]. Web 2.0 platforms provide connectivity gateway and networking capabilities for users [2].

It turns the web into a sharing platform that enables users to browse, read, download and upload contents [3]. According to Fuchs et al. [4], Web 2.0 differs from Web 1.0 (viewing and downloading copyrighted information) as it does not require any web design or publication skills to participate in knowledge sharing to the entire world.

Web 2.0 refers to the practices of connecting people through a web of social participation and the sharing of information. Some examples of Web 2.0 are YouTube, Flickr, Blogs, Scribd, Travelco, etc. Web 2.0 enables the collaboration and information sharing between users ubiquitously and pervasively anytime from anywhere via the Internet to ensure productivity and effective use [5, 6]. According to Bughin and Chui [7], there are many benefits of Web 2.0 for individuals and organizations as it strengthens the interaction between the customers and points of sale. Moreover, it improves the communication of the organizations with customers, suppliers and external partners besides increasing the awareness of products, services, promotions, etc. [8].

Tourism as a dynamic and competitive industry requires adapting constantly to customers' ever-changing needs and desires. It focusses on gaining customers satisfaction, as well as ensuring their safety and enjoyment. Tourism business involves transportation, reservation, entertainment, accommodation, food, and beverage services. There are several types of tourism including Agriculture tourism [9]. Religious tourism [10], Extreme tourism [11-13], Wildlife tourism [14], and Sustainable Tourism. The focus of this study is on sustainable tourism which refers to traveling with respect to the destination culture, environment, and people.

According to World Tourism Organization (WTO), sustainable tourism is vital for the economy since it revenues from travelers spending, as well as it creates a positive impact on the environment, economy, and society of the host country. Sustainable tourism may relate to traveling for leisure, or business purpose, and for visiting friends and family as well. Hall [15] stated that sustainable tourism includes transportation, accommodation, recreation, shopping, and entertainment services. However, despite its significances, it has two major issues regarding its reliance on fossil fuels and its impact on climate change.

Mason [16] criticized the effectiveness of sustainable tourism by determining its negative impact on the environment of the host country. He stated that the sustainable tourism's CO_2 emission mainly comes from transportation contributes to more than 72 %, whereas the remaining percentages come from accommodation 24%, and local activities 4%. Whereby, Dodds and Graci [17] stated that although sustainable tourism is effective in improving the economy, it also increases the consumption of natural and other resources of the host country. Edgell Sr [18] suggested that sustainable tourism assists in developing a better environment and lifestyle of the host country. Additionally, he stated that it provides political and financial support for developing new attractive and protected areas to attract more tourists.

The advancement in Information and Communication Technology, as well as the smart digital devices (mobiles, sensors, RFIDs, computers, etc.), have facilitated the interaction between people on the Internet. Web 2.0 as an established networking within the tourism industry does not only provide quality holiday experience for tourists but also sustain the global tourism industry [19, 20]. Figure 1. Sigala et al. [21] illustrate how travelers use their smart devices on holidays. It is observed that 36% of travelers use their smartphones to search for restaurants while on holiday and 32% for accessing online social media whereas less were performed for other activities to do during their holidays.
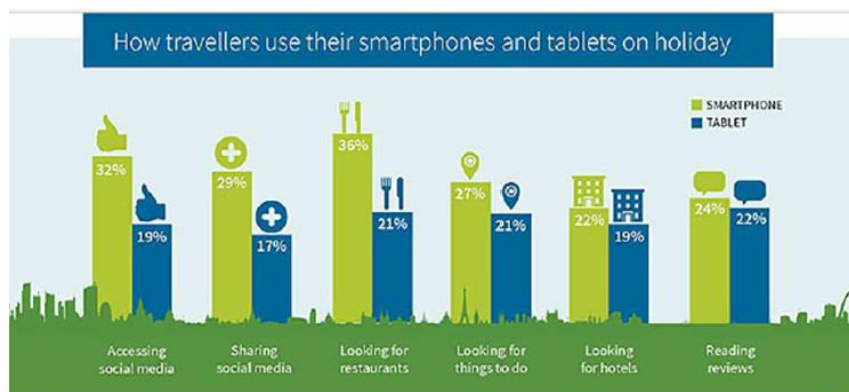

Fig. 1. How travelers use their smartphones and tablets on holiday.

Currently, the behaviors and preferences of travelers are being influenced by the social media trends and the generated online contents. Moreover, by analyzing the behavior and preferences of travelers are important for the tourism industry, as it assists the service providers to know the ratios or percentages of potential customers.

2. Adoption of Web 2.0 in Sustainable Tourism

Through the effective and efficient adoption of Web 2.0 media, travel organizations can increase peer-to-peer collaborations and transform their key business processes. Moreover, tourists can find related information and express their concerns using their gadgets on blogs, wikis, mashups, social media and others. According to Ashworth and Goodall [22], tourism has become one of the profitable businesses of many nations; therefore, countries need to market their attractions and increase the customer's awareness. They also found that filming is one example of marketing in the tourism industry, as it helps in promoting the country. Furthermore, it also enhances the growth of the entertainment industry and international traveling.

Goodall and Ashworth [23] stated that marketing through advertisement and other promotional activities in the tourism industry is lacking and needs improvements. Pappas [24] stated that advertising attractive places and unique experiences of the country, the performance of the tourism industry of the relevant country can be improved. Leung et al. [25] stated that social media is a crucial tool for the success of marketing tourism and in every other business as well. According to Kumar et al. [26], virtual media has facilitated direct interaction between tourism service providers

and customers. Moreover, social media marketing has improved the tourism industry by developing customers awareness and knowledge about the countries.

Sustainable tourism concerns of preserving the country delicate natural and cultural resources. It must have economic advantages, as well as create social benefits for the local community without harming the environment. Web 2.0 as an emerging platform have been implemented in the Tourism sector. However, there are no available studies indicating its application on sustainable tourism and, more specifically, in decision-making processes [17]. Therefore, this study investigates the impact of Web 2.0 on sustainable tourism and decision-making processes.

3. Research Methodology

This study follows the positivism philosophy based on a quantifiable observation of the collected data without intervening the concept of Web 2.0. It has progressed with the deductive approach due to hypothesis formation. Moreover, this study is an explanatory research based on a quantitative analysis of a questionnaire conducted via Google Forms on Asia Pacific University of Technology and Innovation (APU) students. The explanatory research design was deployed to examine the cause-and-effect relationship between Web 2.0 and sustainable tourism. Statistical Package for the Social Sciences (SPSS) software was used to analyze the data. The identified Web 2.0 dependent variables were the sustainable tourism and customer decision-making process. Whereas, the independent variables were blogs, podcasting, and social media. The variation in the independent variable of the Web 2.0 was done to identify the consistency in the relationship of Web 2.0 with the dependent variable of sustainable tourism and decision making. Figure 2 shows the study framework that includes independent and dependent variables relationship.
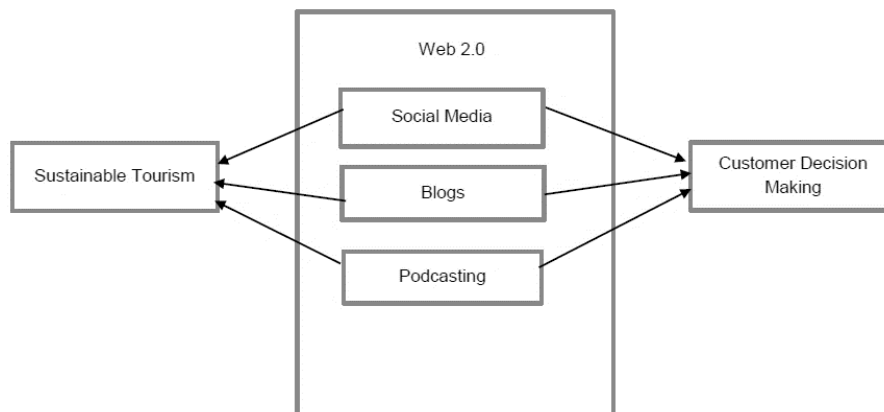

Fig. 2. The study framework.

This study has deployed a random sampling approach for data collection in form of probabilistic sampling [27]. The reason for choosing this technique is that the respondents have an equal chance to be a part of the survey, and hence the results will be more precise and accurate [28]. However, in non-probability sampling respondents do not have an equal chance of selection [29], which makes probability

sampling the only suitable methodology whereby the results can be generalized from the sample to the population of the conducted research [30].

The World Youth Student and Educational (WYSE) Travel Association, stated in its report that young travelers represent 20% of international travelers [31]. Students in higher education are known as technology-oriented, who use social networking platforms to communicate and to collect information about several interests including tourist destinations and other tourists' experiences as well as feedbacks [20]. Students, currently, are huge fans of online platforms, especially when it comes to traveling and sharing experiences [32].

This research experiment sample size was gathered from 160 respondents age ranged between 18 to 38 years old from APU. These respondents reflected the characteristics of the large population in terms of demography, gender, age, preferences, etc. APU students were selected for their vast engagement with new technology products and services. Another reason is that they travel regularly as tourists or involve in exchange students' programs. A pilot test of the questionnaire was conducted on 20 students. However, 10 respondents were unable to understand the terminologies used in the questionnaire, which were replaced with easier terms for more understanding of the respondents.

The questionnaire proved to be filled with no missing values and no double markings. Hence, 89 (56%) of the respondents were males and 71 (44%) females. The questionnaire data were interpreted and analyzed using SPSS for testing its reliability. Moreover, the study regression analysis was performed for determining the impact of Web 2.0 on sustainable tourism and consumer behavior. Regression analysis has been used to critically identify which independent variable is related to the dependent variables of this study [33]. Additionally, an Analysis of Variance (ANOVA) was used to determine the means of the existing relationship between the independent variable groups.

A comparison was made for hypothesis testing as well as for exploring the type and nature of the relationships among different variables which are being tested. Furthermore, correlation analysis was used to find out if there is a relationship between the tested variables. Hence, the coefficient of variation enables finding out results variations. Figure A-1 (*Appendix A*) shows the overall questionnaire results percentages.

4. Analysis and Discussions

As per the questionnaire analysis, when the respondents were surveyed about their opinion concerning the extent to which they participate in good environmental practices, 90.625% of the participants responded in a positive manner and agreed on investing in environmentally friendly services. They have decided to use social media for subscribing to tourists' pages to get information regarding various travel destinations, as well as visiting natural and heritage places, besides participating in good environmental practices. Whereby, 88.125% of students liked to visit places which have environmental restoration and 87.5% preferred to use podcasting for entertainment, also they agreed that information presented by bloggers are not biased and traveling to places with waste disposal. They stated that traveling decisions regarding travel destination selection are based on the cost of living.

Moreover, 84.375% of the students agreed that the information available on various social media platforms are dependable and that the reliability of blogs is based on bloggers real-life experience. They agreed also on carrying forward responsible buying while traveling and visiting places. While 81.875% do not want to consume products or services which are harmful to the environment. Moreover, they prefer to use podcasting as it increases the awareness of what is happening around the world. Whereas 80% of the students use podcasting to view events across the globe.

Based on the analysis of previous questions, it is observed that students used Web 2.0 to access social media networking which enabled them to create their own profiles to get recognized and to get engaged with others in numerous activities around the world, as well as they can explore posts, information, product videos, pictures, or take part in discussion forums, etc. Moreover, it has been identified that people rely on social media networking forums to extract information regarding travel and tourism. Additionally, the findings of the study identified that social media networking, blogs, and podcasting have a great influence on the customer's decision making for visiting a specific destination or going for a trip.

The evaluations of the independent variables including blogs, podcasting, and social media revealed that the main purpose of visiting different places as a tourist is to create a positive impact on the environment, economy and the society of the host country. Thus, it has been analyzed that the sustainable tourism focuses on contributing a positive aspect to the environment, economy, and society of the country which proves that Web 2.0 has a positive impact on improving sustainable tourism and decision making since decision-making process is based on the acquisition of information from the internal or external sources. It has been identified that customer's decision making on sustainable tourism is influenced by the various media through which information is attained. Thus, Web 2.0 possesses an influence on sustainable tourism and the customers' decision-making.

5. Evaluation and Testing

Statistical test interpretation has been performed to investigate the impact of Web 2.0 on the sustainable tourism. The reliability analysis, regression and correlation analysis were carried out to ensure the consistency of the accumulated data. The interpretations of the statistical test are presented in the following sections:

5.1. Reliability test

The reliability testing of the accumulated information was performed to ensure the validity of data for further analysis. This study depicts the value of Cronbach's Alpha to be 0.990 for 17 items that exceed the benchmark value that is 0.60 which means that the accumulated data is consistent and valid, also the coefficient of consistency meets the standard criterion verifying that the data gathered is genuine.

5.2. Regression analysis

The regression testing analysis of the accumulated information was performed to evaluate the study hypothesis that is listed as follows:

H1. There is an impact of social media networking on sustainable tourism**.**

H2. There is an impact of the blogs on sustainable tourism.

H3. There is an impact on podcasting on sustainable tourism.

H4. There is an impact of social media on customer's decision making.

H5. There is an impact of the blogs on consumer decision making.

H6. There is an impact on podcasting on consumers decision-making.

Table 1 and Fig. 3 illustrates the regression testing of dependent and independent variables. As observed that social media networking possesses a significant link with the sustainable tourism since its R square value is 89.5 % which is a high percentage that approves the first hypothesis test. This result is supported by [34] who stated that social media networking plays a significant role in making people aware of sustainable tourism. Moreover, as seen from the results in Table 1. blogs possess a positive impact on sustainable tourism since the value of R square is 84.1%, which means that hypothesis 2 is also approved. This result is also supported by Fuchs et al. [4] who stated that blogs are considered as one of the emerging digital media because the positive opinions of people stimulate the development of the customers' intentions. As for hypothesis 3, the R square value shows that podcasting has a strong relationship with the sustainable tourism. This is due to the high R square value of 78.4% which also proves that podcasting significantly instigates the sustainable tourism.

The regression test for hypothesis 4 shows that social media networking is strongly associated with the customers' decision-making. R square value is 94.4% which approves the hypothesis that social media networking possesses a significant impact on customers' decision-making. Hypothesis 5 was proved by the R square value of 92.7% which indicates that blogs are strongly associated with the customers' decision-making. Finally, hypothesis 6 was also approved with R square value of 88.2% which indicates that podcasting has a strong association with customers' decision-making. In summary, all the research hypotheses were accepted to depict an impact through the regression test.

Table 1. Regression analysis of the hypothesis.

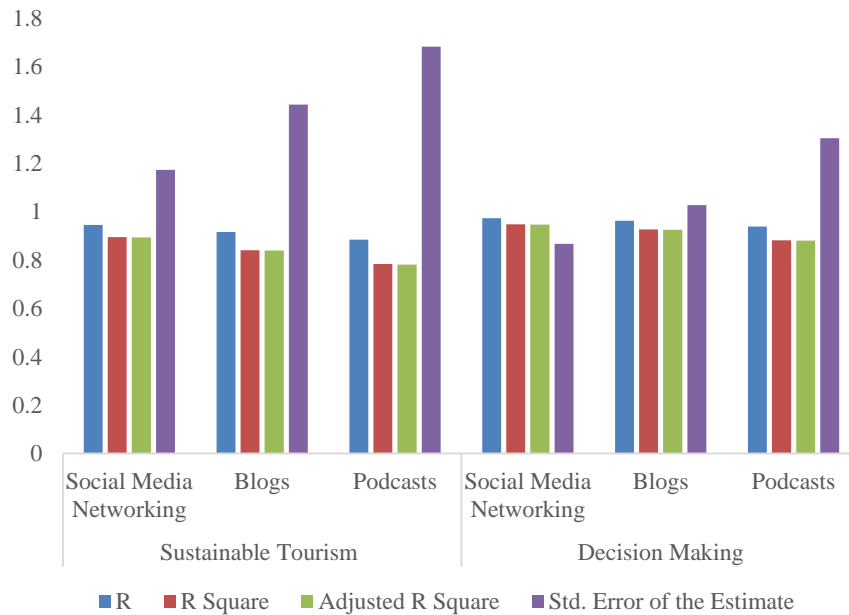| Dependent Variable	Independent Variable	R	R Square	Adjusted R Square	Std. Error of the Estimate
Sustainable Tourism	Social Media Networking	.946	.895	.894	1.17365
	Blogs	.917	.841	.840	1.44379
	Podcasts	.885	.784	.782	1.68330
Decision Making	Social Media Networking	.974	.948	.947	.86766
	Blogs	.963	.927	.926	1.02728
	Podcasts	.939	.882	.881	1.30389

Fig. 3. Test model specifications and test conditions.

5.3. Correlation test analysis

The correlation test refers to the statistical test conducted to identify the relationship among various variables of a study [35]. The Correlation Test in Table 2 and Fig. 4 show that social media networking, blogs, and podcasting possess a significant positive relationship to the sustainable tourism with Pearson correlation values of .946, .917, and .885 respectively. Furthermore, we observed that social media networking, blogs, and podcasting possess a strong relationship with decision making with Pearson correlation values of .974, .963 and .939 respectively. Furthermore, we demonstrated that social networking has the strongest relationship with the customers' decision-making and sustainable tourism. The results of correlation analysis accept the study hypothesis with Sig. (2-tailed) of -000.

Table 2. Correlation test.

|		Social Media Networking	Blogs	Podcasts	Sustainable Tourism	Customer Decision Making
Social Media Networking	Pearson Correlation	1	.986	.969	.946	.974
	Sig. (2-tailed)		.000	.000	.000	.000
	N	160	160	160	160	160
Blogs	Pearson Correlation	.986	1	.972	.917	.963
	Sig. (2-tailed)	.000		.000	.000	.000
	N	160	160	160	160	160
Podcasts	Pearson Correlation	.969	.972	1	.885	.939
	Sig. (2-tailed)	.000	.000		.000	.000
	N	160	160	160	160	160
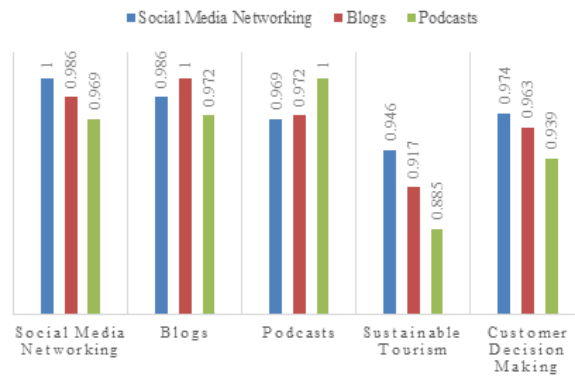
Fig. 4. Correlation test analysis.

6. Recommendations

Based on the findings of the research the following recommendations are made:

- Majority of respondents indicated that information disseminated in Web 2.0 platforms is dependable and that existing social arenas such as blogs, Facebook, Instagram, etc. with millions of followers further ascertain reliability and trust. Hence, these platforms can have new features incorporated such as artificial intelligence that performs background scanning and analysis to provide users with feedback and reviews for quick decision-making purposes.

- Podcasting of Web 2.0 also provides space for entertainment and means to be able to follow countless events across the globe. For instance, using Google Alerts and RSS feeds are a good example of that whereby users are alerted and updated on their areas of interest. Yet, these tools could be enhanced through embedding of new features knowns as reality-fact-checkers that will perform automatic background checks on users' contents with the background databases and provide a response back to the user.

- Folksonomy is another capability of Web 2.0 whereby Yahoo and DMOZ (a multilingual open content directory of World Wide Web links that offers a fully-fledged cluster of information categorization according to the exact needs of the users) [36]. For example, photo sharing capabilities of Flicker and the Bookmarking tools that enables tourists to record their memories. With these tools, more new features could be incorporated into Web 2.0 which will improve its capabilities and allow tourists to drag and drop contents across devices without sharing or using media transfers.

7. Conclusion

The purpose of this research is to identify the impact of Web 2.0, on the effectiveness of sustainable tourism and decision making. A deductive quantitative approach was used to conduct this research. The comprehensive review of the generated findings revealed that the Web 2.0 in terms of social media networking, podcasting and blogs possess a firm association with the sustainable tourism and customer's decision making. Furthermore, the findings of the data analysis revealed that all the developed hypothesis of the study have been accepted depicting an impact through the regression test.

Abbreviations	
ANOVA	Analysis of Variance
PDA	Personal Digital Assistants
WTO	World Tourism Organization
WYSE	World Youth Student and Educational

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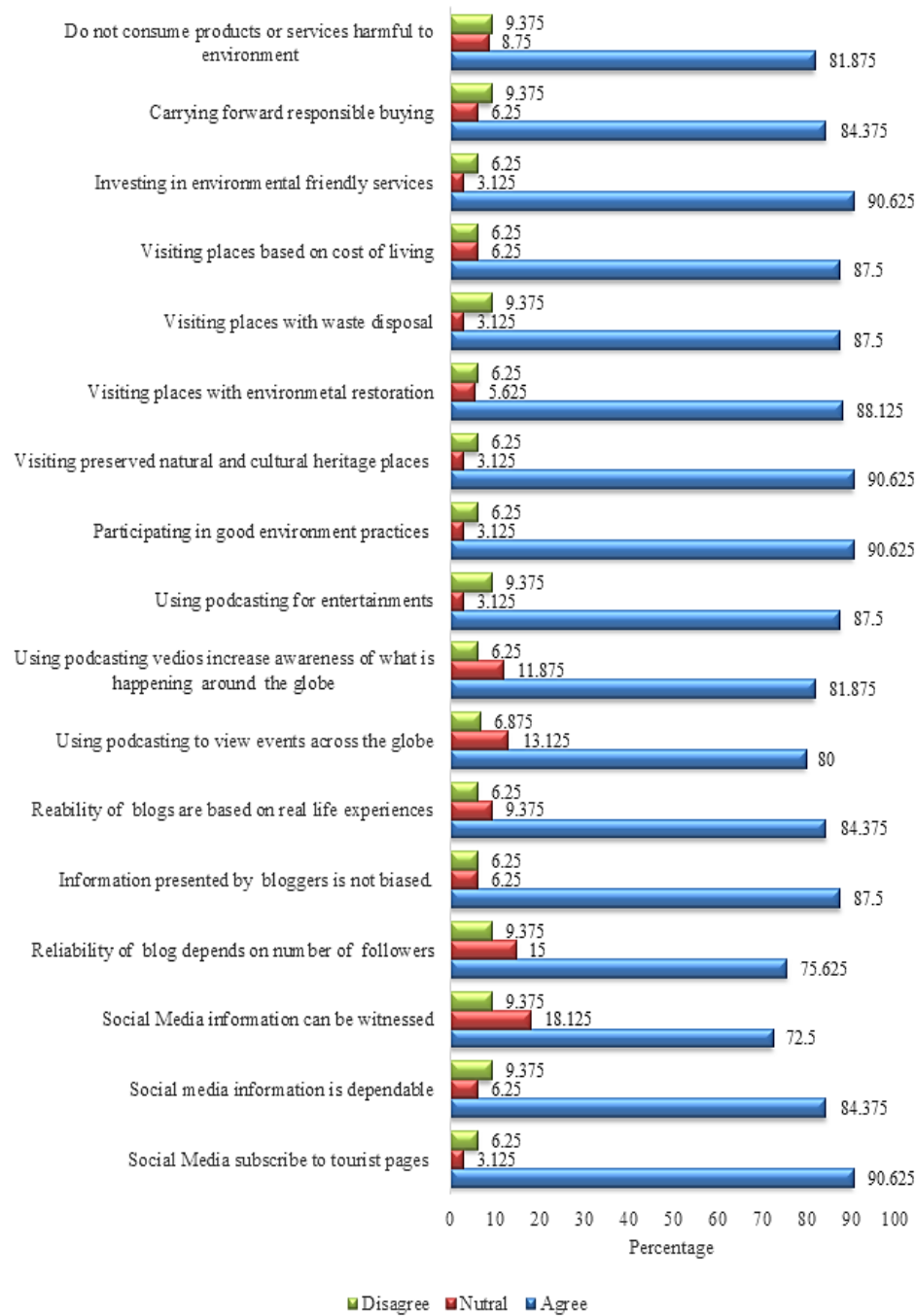
Appendix A

Fig. A-1. The study overall questionnaire results percentages.