Study and Evaluation of Tourism Websites based on User Perspective

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ABSTRACT

A well-designed website is mandatory for good marketing and proper tourism business. This research considers Nepal as a domain of study and specifically explores welcomenepal.com, the official tourism portal as a reference for the study. The work is based on the study of the existing literature, user-survey, and technical testing of the website using open-source testing tools to identify user perspective, design issues, website architecture and design quality of the tourism website. A population size of 400 respondents, which consist of both domestic and international tourist, are considered for the survey. Data is received from 360 respondents, which is analyzed using statistical tests like Cronbach's alpha, Pearson's correlation, cross-tabulations, bars charts and graphs to draw inferences and consclusion. The software-based test results serve as another important parameter for the evaluation of the current official website. This study brings out core needs of the tourist in terms of expectations from a tourism website and access technical quality of the current portal to provide necessary feedback and suggestions. The government officials, business houses, and web designers can utilize this work as a knowledge base to build tourism websites, which are user-centric. Further, the work is specifically important for Nepal government and tourism officials to identify shortcomings in their current website and make improvements for better design and user adaptability in future.

☞ keyword : tourism website, user requirements, web evaluation, web quality, user centric design

1. Introduction

Tourism websites serve as one of the important components of ICT, which help travelers to make travel related decisions. Nepal is an underdeveloped and emerging economy in South East Asia. As the country is landlocked it has huge barriers in case of trade and economy, relying mostly on two giant neighbors, India and China for trade and facilitation. Agriculture is the principal economic activity, which employs 65% of the population and provides 31.7% of GDP, followed by remittance 9.1% and tourism with 7.5%. [1]. Tourism is a vital industry of the country and it plays a great role in uplifting the overall economy of Nepal and add value at different proportions. Reports published by the Economic Impact Research of 2018, showed that tourism contributed a 177 billion NRS in Nepal's total GDP. It is further forecasted to rise by 4.3 percent annually reaching upto NRS 287.6 billion (8.3%) of the GDP in 2027, which is mandatory for the Nepalese economy to grow and improve as shown in figure 1[2].

Tourism is an integrated business that is closely connected to the hotel industry, the hospitality industry and the transport industry which serve as the base, followed by any other supporting industries that make business possible within these entities [1]. The dependency of tourism on various industries of small and big nature requires an integration of all such industries. A strong integrated information management system with vital information on destinations, products, services, transport facilities, etc., is very important. Also, an information portal that can accurately link all these industries can prove highly beneficial both for the tourist as well as tourism business organizations making a great impact on the application of ICT in tourism industry.

Websites are an important sources of information that

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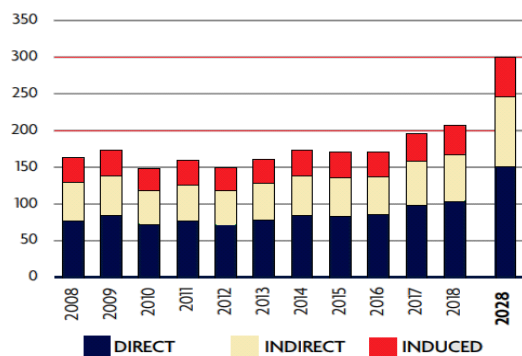
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serve as a niche in helping the tourist to make decisions on destinations. In current times, websites serve as a store house of information on tourism products and services. A well-designed and comprehensive website is a core need for

Total Contribution of Travel and Tourism to GDP
2017 NPRbn

(Figure 1) Travel and Tourism contribution to GDP of Nepal, Source WTTC report 2018

marketing, exploring and gathering information for tourist and tourism agencies. Therefore, it is important that tourism websites are developed based on user requirements and have user-centric approach. This work explores user perspective and users' requirements through survey and literature study to come up with design solutions, recommendations, and suggestions for effective tourism websites.

Nepal is highly dependent on tourism to support its economy and provide jobs to its citizens. A good tourism business can guarantee small and big jobs of various nature and also provide chances for linked industries of all kinds to prosper and make fortune. ICT is enlisted as an important component by World Travel and Tourism Council for uplifting and supporting the growth of tourism economy. The government of Nepal has realized this fact and has initiated many programs and projects to promote and digitize tourism industry. Some initiatives include the digitalization of tourism sector, promoting Nepal for tourism 2020, conserving national heritage and world heritage sites, etc. [3]. A lot of work is already underway in tourism sector and government has approached its citizens to provide constructive feedbacks, suggestions and ideas to develop tourism industry. ICT is taken as a major component in this phase of development and different levels of technological

initiatives are introduced in tourism that includes the construction of tourism website, impelmentation of ICT systems in airports, construction of tourism information centers and other related activities. In spite of these initiatives and aggressive approach in tourism, there is still a gap that is seen at all levels of implementations [3]. The studies from earlier authors also state that Nepal suffers in terms of physical infrastructure, roads, proper policies and strategies in place and weak homework done for digital implementations and connectivity. Further, an integration between different units of Nepalese tourism is missing at large contributing to information gaps and proper management. This work addresses the core needs for a tourism websites from user prespective to design and develope better tourism websites.

2. Literature review

There are many factors that are responsible and play an important role in the growth and development of a tourism economy, which includes a well-developed infrastructure, good governance, well planned promotional activities, friendly policies and practical approaches at tourism business and governance level [4]. In the current scenario, the role of ICT and internet-based technologies are significantly important and form an integral part of tourism industry. Various studies have been carried out by different authors at different times, studying different aspects of ICT. The application of internet has brought profound change in the existing business models and have created a great impact. Digital technologies have opened vast opportunities in business substituting old business models with new ones, redefining supply chain, business structures and business associations [4] [5]. The application of ICT has empowered consumers with immense information and varied choices. A consumer today has a lot of flexibility in terms of quality, price and services. The ICT impact is not only advantageous to tourist but even business houses, government agencies and public sectors also have strong position to sell, manage and market their products and services [6] [7].

The tourism industry is information intensive industry and all actors associated in this business heavily rely on information for proper marketing and management of this

(Table 1) Literature review on web design and development issues

Year	Component of the study	Authors	Ref
2000	Electronic queries	J. Palkoska, A. Dunzendorfer, and J. Küng	[11]
2000	Data warehousing	P. Sharma, D. Carson, and T. Delacy	[12]
2000	Tourism commerce	J. Zabel, D. Bönke, and P. Constanta	[13]
2016	Web Usability	Tuba Ugras et. Al	[14]
2014	Multimedia functions	Xie, Gui Mei	[15]
2019	Interaction	P. Voštinár, D. Horváthová, M. Bako and M. Mitter	[16]
2003	E business	H. Degen and S. Pedell	[17]
2004	Web adaptations	N. Singh and D. W. Baack	[18]
2020	ICT and Tourism	Shrestha et al.	[19]
2020	Web Design	D. Shrestha, T. Wenan, B. Gaudel, J. Chun and S. R. Jeong	[20]
2002	Travel Semantics	B. Pan and D. R. Fesenmaier,	[21]
1995	ICT tourism channels	D. Buhalis	[22]
2020	Technology and Nepal tourism	Lama, S., Pradhan, S. & Shrestha	[23]
2019	Attitude towards ICT in tourism	Tan Wenan, Deepanjal Shrestha, Deepmala Shrestha, Seung Ryul	[24]
2002	Web design and evaluation	Law R., Bai B.	[25]

business. Websites are the first and foremost medium to provide information in this business [6]. The work on tourism research has shown that websites play a very important role when travelers sit to plan and make their travel itinerary [7]. Therefore, the importance of tourism websites in tourism business is an indispensable component. Authors argue that because internet has the capacity to distribute large volume of multimedia information over long distances immediately, the websites have become a very important tools of information [4][5][8]. The use of multimedia in websites has substantially improved the effectiveness and efficiency of information presentation and dissemination through electronic channels. The amalgamation of internet with e-commerce has further opened a wide and huge spectrum for tourist to buy their products and services [7]. Business organizations are incorporating e-business applications as an essential part in their websites helping them to catch attention of user and allow them to buy products and services [7]. The use of virtual systems, high-definition technologies, and extensive information content are capable of generating huge value in websites. Use of multimedia and attractive designs are important to keep visitors flocking in websites [9][10]. The technology of personalization of information, analysis of data and recommendations for the users on products and services has caught a lot of attention of web users and it has become an important area of research and development [9] [10].

Literature review shows that website design, content layout, architecture, usability, ease of use, web dimensions and attributes of tourism websites are curious subject of study. Different authors have carried out studies related to different aspects of website as shown in table 1. Most of the authors and researchers point out that besides the huge development in the internet and web technologies, the usability quotient of the website is still poor [11]. The users still struggle with web information, content analysis and find it difficult to navigate through webpages. Some authors highlight visibility, inaccessibility, poor design, weak functions, hard-to-use content and few cross-cultural considerations as major problems [11]. Travelers come from different origins and have different cultural and social needs. Tourism websites should be able to accommodate the cultural differences and have sufficient understanding of traveler's needs. Information and tools on languages, cultures, currencies, and customs are the vital components that must be addressed in a web site design. Travelers need to be provided with vivid and comprehensive information on destinations, food, shopping, budget estimate, itinerary planning, safety, etc. Thus, website development needs a comprehensive analysis and design at user and business level. A good analysis and design increases the probability of proper use of website from it's targeted users.

3. Problem Definition and Research Framework

Tourism websites hold a great significance in tourism business sector as they serve as the first face of tourism industry of a country. They are an important tool for providing information on tourism products and services, along with other vital information on VISA, regulations and other important aspects. A good tourism website is mandatory requirement for tourism marketing, business and governance. It is observed that tourist have special requirements from tourism websites, so it is mandatory to understand user perspective and related design aspects of a tourism website.

3.1 Research Questions:

The study is carried to solve the above scenario and answer four research questions mentioned below:

1. What is the current status of the official tourism website of Nepal?
2. What do tourists perceive as an effective tourism web site?
3. What features do they perceive important in an effective tourism web site?
4. Can we generalize the current study for other tourism websites?

3.2 Significance of the Study

This study holds a great value for tourism organizations, business houses and tourism dependent government sectors to have a knowledge on the primary requirements of tourist from a tourism website. This study will bring out the technical details in terms of content representation, design issues, web architecture and navigational features specifically required for a tourism website. A contrasting approach to take official website of Nepal tourism as a reference will help users to identify their core needs as well as test the quality of existing websites. User will be able to provide better inputs taking official website as a reference. Further, testing the official web portal with testing tools will uncover the technical details which will be important knowledge for

the web designer in future. The work will hold special significance for Nepal government and Nepalese business houses to know the concrete details of official web portal and user requirements for future enhancement and improvement of the current websites.

3.3 Research Framework

The study is carried in different phases that includes literature review, survey design, data analysis and interpretation. The validation of the technical aspects of the system is based on the automated testing tools as shown in figure 2.
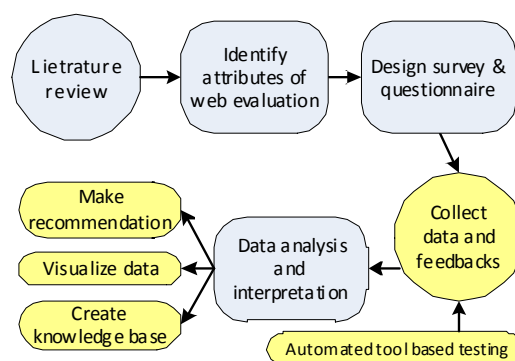

(Figure 2) Research framework of the study

3.4 Sampling Method

The study is carried out for a sample of 400 respondents which include both domestic and In-bound tourist. The respondents were divided into 4 classes which included tourism business personnels, government officials, frequent travelers and website designers. The study did not discriminate on the basis of age and gender in the formed groups. A total of 360 responses were received from the total number of distributed questionnaires. The domestic respondents were contacted both through online media and physically by distributing the questionnaire to them in person. The international tourist were provided the questionnaire through online media with assistance of Facebook, Google and peer group contacts. A random sample of respondents consitisintg of 2-4 persons in each group were further interviewed to extract more details in terms of their

preferences. The interviews were recorded and analyzed later. The technical aspects of web design were tested using open source web testing application. The analysis on data was done both qualitatively and using statistical tools to extract requirements of tourist regarding a tourism website.
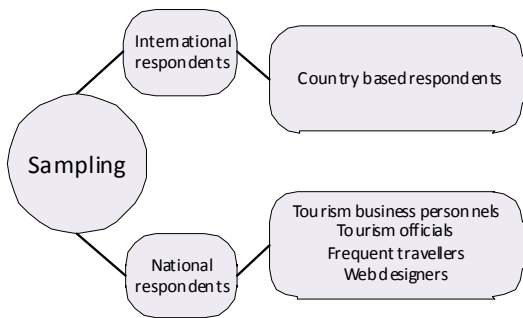

(Figure 3) Sampling outline of the study

3.5 Website testing

A thorough testing of the website welcomenepal.com was carried out to uncover the technical details and assure quality of the website. The two application Jmeter and Amber loom were used for inspecting the technicalities of the website. In order to have a comprehensive test, the tools were run in different time settings and tested in different environments.

3.6 Evaluation and analysis principles

A comprehensive study of different tourism website frameworks were carried and finally, framework proposed by Layla Hasan and Emad Abuelrub was considered after some modification. The attributes include web quality, which had four components in the first hierarchy consisting of content quality, design quality, organization quality, and user-friendly. The identified four attributes were further investigated by extending attributes of the framework to understand the tourism business needs of Nepal. The study extensively studied 20 top tourism website as a reference to build a knowledge base of information and architecture of popular tourism websites. A framework was developed using the knowledge and literature for the tourism web design as shown in figure 4. This attained knowledge was further used to develop questionnaire for the study and

conduct survey. 11 major categories with 61 sub categories were detailed for the study.
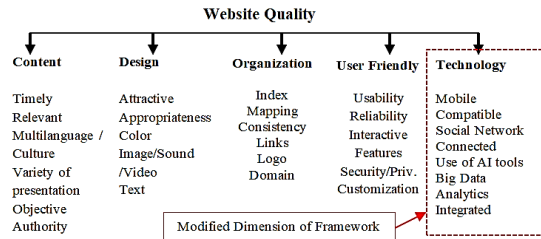

(Figure 4) Modified framework proposed by Layla Hasan and Emad Abuelrub

4. Data analysis and findings

Data analysis is the core activity of any research and is carried out after data is collected cleaned, compiled and then investigated using a statistical tool. The obtained two sets of data were investigated with simple statistical analysis combined with user feedbacks, interview and software testing results. The result of the data analysis included findings and conclusions with respect to tourism web design requirements.

4.1 Analysis from the Survey

The figure below represents survey results of demography data. Figure 5 shows data of countries of the respondent from 11 countries represented in the form of increasing frequency of respondents, which include, Nepal, India, USA, Ukraine and China. Figure 6 represents the age groups of the respondents with increasing frequency consisting of 18-25, followed by 26-32 and 33-40. There were no respondents reported above this age. One of the reasons that may account for absence of other groups is that the survey is technology based. It can be concluded that people above 40 were not comfortable with the technology related survey.
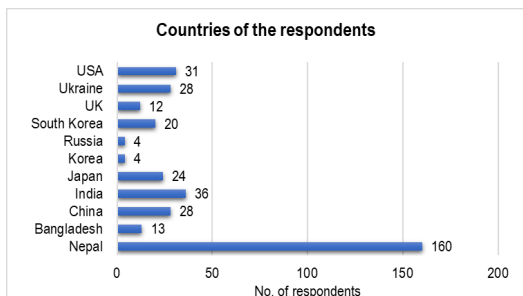
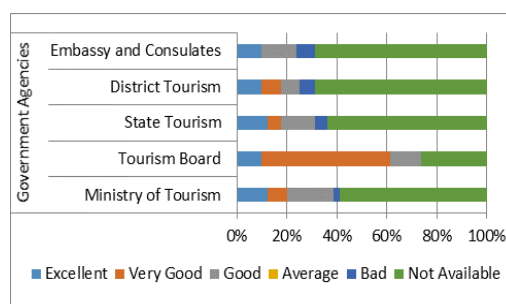(Figure 5) Representation of respondent countries
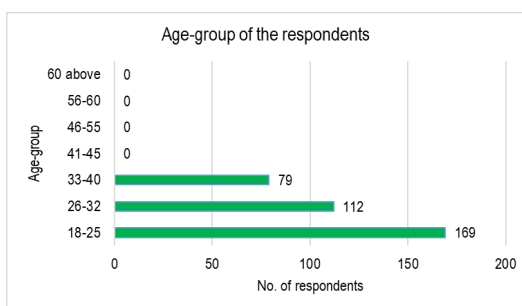
(Figure 6) Representation of respondents age group

The further analysis of four important attributes of website is carried out using cross tabulation. The result of inbound and domestic tourist has important insights to display. It was seen that design layout was rated as average by inbound 38% and domestic 35% tourist. The next category content information had a rating as 56% by inbound and 32.5% by domestic tourist. Similarly, information

architecture had rating percentage of 42% inbound and 12.5% domestic tourist and effective navigation with 42% inbound and 17.5% domestic tourist. Respondents rated information architecture (37.5% inbound and 34% domestic) and effective navigation (inbound 24%, domestic 40%) as bad design. Content architecture had a major difference in the range with inbound and domestic tourist rating it at (4% and 37.5%). Respondents with 17.5% to 30% rated all the other attributes as good as shown in table 2. Positive results were seen in case of load times, mobile compatibility, browser consistency for both inbound and domestic tourist participants.

The data regarding the government agencies show that data on tourism board is available easily on the website and is confirmed by both sets of respondents as shown in figure 7 and 8. The other information components are not seen or present in the official website.
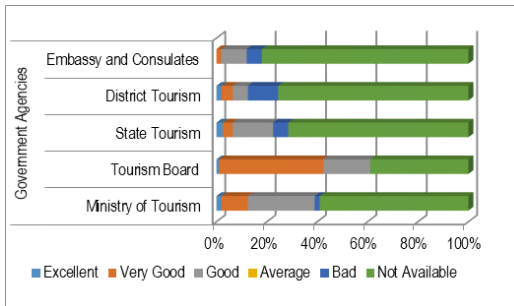

(Figure 7) Representation of domestic respondents views on Government agency information

(Table 2) Representing cross tabulation of website content data of inbound and domestic tourist

What is your impression about the undermentioned contents in Nepal's Official Tourism Website	Excellent		Very Good		Good		Average		Bad		Not Available	
	Dm	In	Dm	In	Dm	In	Dm	In	Dm	In	Dm	In
Design layout	8%	0%	15%	13%	20%	33%	35%	35%	23%	20%	0%	0%
Content information	8%	0%	5%	15%	18%	28%	33%	54%	38%	4%	0%	0%
Information Architecture	15%	0%	15%	0%	19%	24%	14%	42%	38%	34%	0%	0%
Mobile Compatibility	8%	1%	13%	18%	56%	77%	24%	4%	0%	0%	0%	0%
Load Times	13%	12%	20%	16%	38%	67%	30%	6%	0%	0%	0%	0%
Browser Consistency	10%	2%	23%	24%	44%	55%	24%	20%	0%	0%	0%	0%
Effective Navigation	5%	0%	18%	9%	20%	29%	18%	39%	40%	24%	0%	0%
Colour Scheme	18%	25%	15%	46%	34%	10%	14%	0%	20%	20%	0%	0%
Dm: Domestic Tourist	In: Inbound (International Tourist)											

(Figure 8) Representation of inbound respondents views on Government agency information.

(Figure 9) Domestic respondent view, VISA information

(Figure 10) Inbound respondent views, VISA information

(Figure 11) Representation of respondents views on news and events (Domestic)

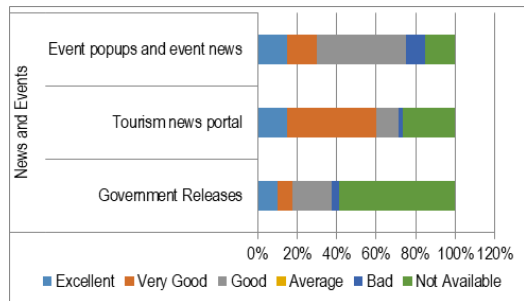VISA is a very important information component of the tourism website. A clear and complete information is an ultimate requirement of any tourist visiting another country. VISA is a very important aspect of travel and it serves as one of the most vital information for any tourist. A good tourism website must have clear, updated and price information in terms of VISA and regulations. The next section of the survey inquired the four components: custom regulation, administrative regulation, VISA information and currency exchange rate information. The survey concluded that website lacked information for administrative regulation. The survey had (Domestic 64%, Inbound 61%), similarly custom regulations were also not available (domestic 78%, inbound 78%) and currency exchange rate (domestic 81%, inbound 80%) as shown in the figure 9 and 10. VISA regulations was rated as good by (domestic 31% and inbound 40%). Respondents data and interview depicted that information on VISA did not had

right placing on the web page and respondents had to struggle to find out the information in this section.

Tourist needs to keep themselves updated about local news and events in the tourism destinations and the country itself. The analysis of this aspect depicted that informations on tourism news is very good in the tourism portal (45% domestic, 47% Inbound). The news on government release, updates and events in very poor (60% domestic, 60% Inbound) and there are no pop-ups or real time mechanism for information update in the portal as ahown in figure 11 and 12.

The modern websites have complex demands and this demand increases for a tourism website. Tools and application links are important part of business and must be included in a good web design. The survey concluded that official tourism website had this component missing from the web structure. Mobile and Windows apps (Not available 67.5%), Location finder (Not Available 77.5%) and Language
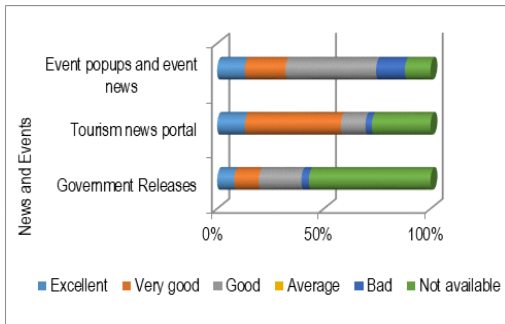
(Figure 12) Representation of inbound respondents views on news and events
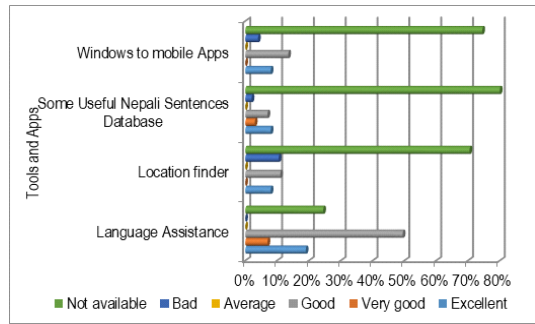
(Figure 14) Inbound respondents views on tools & apps
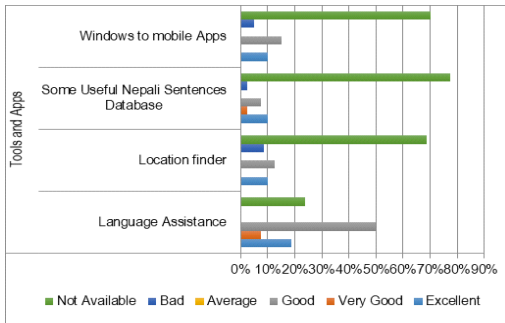
(Figure 13) Domestic respondents views on tools & apps
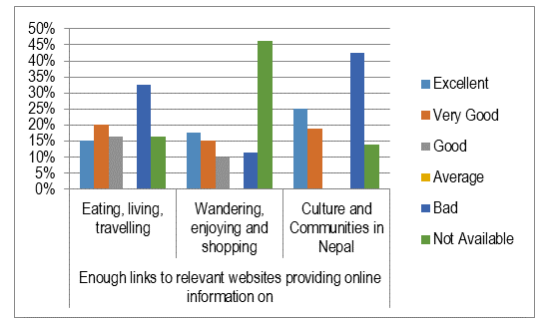
(Figure 15) Representation of domestic respondents views on information and relevant links.

assistant (Not available 70%) for domestic tourist. The data from inbound tourist also had similar conclusions as Mobile and Windows apps (Not available 72%), Location finder (Not Available 78%), and Language assistant (Not available 74%).

Tourism websites are important source of information sources that must provide comprehensive and detailed information on tourism product and services. An analysis of this aspect concluded that eating and travelling as very good to good (35% domestic, 45% Inbound), 33% and 40% rated it as bad presentation and for wandering and enjoying respondents rated it as very good to excellent by (60% domestic, 33% Inbound) 45% and 39% rated it as bad presentation. The information on culture and communities was rated as bad, 43% by domestic and 42% by inbound tourist. The presentation of this aspect was rated as an average value by both the group of respondents as shown in figure 15 and 16.
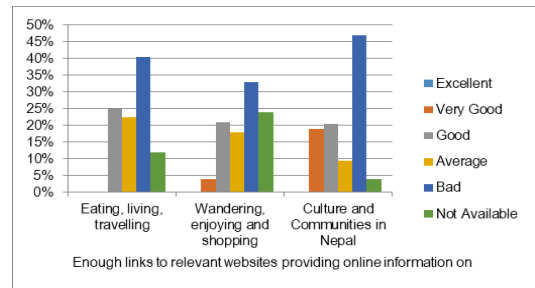
(Figure 16) Representation of inbound respondents views on information and relevant links.

Tourism business revolves around tourism destinations which include Point of Interets, hotels, restaurents. Information on these aspects is very important for marketing, promotion and growth of business. To explore this part, major questions with 12 sub questions were asked to both domestic and inbound respondents. The popular destination

(Table 3) Representing cross tabulation of tourism destination attributes between data of inbound and domestic tourist.

	Excellent		Very Good		Good		Average		Bad		Not Available	
Tourism Destinations	Dm	In	Dm	In	Dm	In	Dm	In	Dm	In	Dm	In
Popular Destinations	31%	41%	23%	31%	46%	28%	0%	0%	0%	0%	0%	0%
Spiritual and Religious Sites	20%	47%	46%	17%	34%	8%	0%	0%	0%	29%	0%	0%
Religious Information	0%	37%	0%	6%	41%	18%	59%	36%	0%	3%	0%	0%
National Heritage	0%	15%	0%	49%	0%	8%	59%	0%	41%	20%	0%	9%
Wild life Conservations	10%	5%	50%	49%	40%	37%	0%	0%	0%	10%	0%	0%
Flora and Fauna Sites	0%	2%	0%	4%	0%	23%	24%	39%	20%	19%	56%	14%
Culture and Arts	25%	32%	15%	43%	55%	23%	0%	0%	0%	2%	5%	0%
Tour Operators	0%	0%	0%	0%	0%	0%	0%	0%	35%	0%	65%	100%
Hotel Operators	0%	0%	0%	0%	0%	0%	0%	0%	35%	0%	65%	100%
Adventure Sports	63%	59%	21%	28%	3%	12%	0%	0%	0%	2%	14%	0%
Entertainment	0%	0%	0%	0%	0%	0%	0%	0%	53%	43%	48%	58%
Seminar, Events and Conventions	0%	0%	0%	0%	0%	4%	0%	19%	28%	14%	73%	64%

information was rated by domestic respondents as (Excellent 31%, Very good 23% good 46%), Spiritual and Religious information as (Excellent 20%, Very good 46% Good 34%), Culture and Arts as (Excellent 25%, Very good 15% Good 55%) Adventure sports (Excellent 63%, Very good 21% Good 3%). Tour hotel operator information as bad 65% in each category and 56% as not available in flora and fauna category. The inbound tourist data about Tourism destination depicted that Popular destination(Excellent 41%, Very good 31% Good 28%), Spiritual and Religious information as (Excellent 20%, Very good 17% Good 8%), Culture and Arts (Excellent 32%, Very good 43% Good 23%) Adventure sports (Excellent 59%, Very good 28% Good 12%). Tour operator and hotel operator information as bad with 100% in each category and 58% Not available in entertainment and 64% NA in seminars and events as the next highest category as shown in table 3.

Information on Geography and Seasons were next component of investigation, and respondents data showed that website had rich information regarding it. 52% of the domestic tourist and 60% of inbound tourist ranked season and similar tourism information as good. Information on sensitive area was not available for 75% of domestic respondents and 95% of the inbound tourist. Domestic respondents rated Information on landmass as excellent by 20% Good 25%, 35% as average while inbound tourist voted it as 36% average, 40% as bad and 24% as NA. The website

regarding seasons had general information. This part of content did not share any specific details with respect to a particular geographical region. Respondents for the component, sensitive area traced no information in the website

The development of e-commerce and web technology has enabled websites to import tools and applications that enable business. Social network sites, commercial websites, booking portals, dynamic web content and management portals are actively using commercial tools and applications as a part of their web content. The analysis of these components from respondents' data showed 100% inbound tourist found it missing while domestic tourist rated it around 80% NA and 20% as bad availability. Chat bots had rating of 75% as excellent to good in both categories of the tourist. User personalization, electronic transaction features, mass customization, dynamic content, online booking features, experience sharing, emergency and rescue sections were rated as NA or bad availability by 60% of the both inbound and domestic tourist as shown in table 5. Travel information was also rated as poor and NA by 60% domestic tourist whereas the inbound percentage included 38% NA and 42% as good. Safety instruction got a rating of (62.5% NA) emergency contacts (65% NA) health and hygiene (97.5% NA) by domestic tourist. The same attributes got a rating as safety instruction as (42% good 26.5% NA) emergency contacts as (50% NA), health and hygiene (66% as NA) by

(Table 4) Representing data of geography, seasons and information assitance of inbound and domestic tourist.

Geography, Seasons & Information Assistance	Excellent		Very Good		Good		Average		Bad		Not Available	
	Dm	In	Dm	In	Dm	In	Dm	In	Dm	In	Dm	In
Seasons and Tourism Information	18%	14%	18%	14%	51%	58%	0%	4%	0%	0%	14%	11%
Landmass Information (Hills, terrain)	20%	16%	8%	6%	25%	20%	0%	2%	34%	41%	14%	16%
Sensitive Areas Info.(Earthquake, landslides)	10%	8%	5%	4%	5%	4%	0%	0%	5%	5%	75%	79%
Travel Guide	13%	10%	18%	20%	9%	11%	0%	0%	0%	0%	61%	60%
Food and Cuisine	10%	8%	18%	16%	58%	56%	0%	0%	0%	7%	15%	14%
Safety Instructions	0%	0%	0%	0%	30%	31%	0%	2%	6%	8%	64%	59%
Quick Dialer (Emergency)	10%	8%	10%	8%	8%	12%	0%	0%	6%	8%	66%	65%
Health and Hygiene	0%	0%	0%	0%	0%	0%	0%	0%	1%	5%	99%	96%
Dm: Domestic Tourist					In: Inbound (International Tourist)							

(Table 5) Representing data of tourism business assistance of inbound and domestic tourist

Tourism Business and Assistance Components	Excellent		Very Good		Good		Average		Bad		Not Available	
	Dm	In	Dm	In	Dm	In	Dm	In	Dm	In	Dm	In
Visitors personal profile page	0%	2%	0%	15%	0%	16%	0%	0%	0%	2%	100%	65%
Online Query Tools (Chabot's)	18%	21%	15%	20%	43%	37%	0%	0%	13%	2%	13%	21%
Tourism Events	18%	13%	20%	30%	40%	45%	0%	0%	0%	0%	23%	13%
Experience sharing and blogs	18%	13%	10%	12%	13%	21%	0%	0%	0%	8%	60%	47%
Online transaction facilities	0%	2%	0%	2%	0%	7%	0%	0%	0%	15%	100%	75%
Languages	18%	12%	20%	19%	50%	52%	0%	0%	0%	8%	13%	10%
Official emergency contacts	10%	0%	15%	11%	8%	6%	0%	0%	8%	16%	60%	68%
Photos gallery and clarity	28%	45%	25%	36%	3%	0%	0%	0%	45%	20%	0%	0%
Audio, Video content	10%	12%	25%	35%	18%	31%	0%	0%	45%	20%	3%	2%
Allowing information and products to be downloaded by users	15%	4%	8%	6%	13%	15%	0%	7%	0%	0%	65%	69%
Online ordering/booking for tourism products and services	5%	0%	10%	2%	20%	19%	0%	7%	0%	0%	65%	73%
Customer relationships information database (feedbacks, ratings)	10%	0%	0%	2%	13%	4%	0%	7%	10%	16%	68%	72%
Information provisionaccording to the profile of the users	10%	0%	0%	0%	10%	4%	0%	7%	8%	6%	73%	84%
Dm: Domestic Tourist					In: Inbound (International Tourist)							

inbound tourist as shown in table 4. This part of the study bring a very important aspect of the tourist requirement that is missing from the official tourims web portal. Government of Nepal and any country coming up with a tourism website must include this component as primary part of their system. This will give added benefit and advantage for to a tourism website.

4.2 Reliability test for internal consistency

This section describes reliability test for constructs under consideration for both domestic and inbound tourists. The analytical results for domestic respondents in Table 6 indicate that the Cronbach's alpha (α) value for the construct C1: What is your impression about the under mentioned contents in Nepal's Official Tourism Website is 0.915, C2: Visa Information is 0.830, C3: Tourism Destinations is 0.779, C4: Geography and Seasons is 0.849, C5: Information Assistance is 0.826, C6:Government Agencies is 0.946, C7:Tools and Apps is 0.910, C8: News and Events is 0.852, C9: Tourism Business and Assistance Components is 0.964 and C10: Enough links to relevant websites for information is 0.960. It shows that the Cronbach's alpha (α) values for all the constructs are greater than the threshold value of 0.7. Thus, the internal consistency reliability of the ten constructs of Nepalese tourist respondents is confirmed. The analytical results for inbound respondents in Table 7 indicate that the

(Table 6) Representing analytical results for domestic respondents for internal reliability

Construct	Item Description	
C1: What is your impression about the undermentioned contents in Nepal's Official Tourism Website	Design layout	0.915
	Content information	
	Information Architecture	
	Mobile Compatibility	
	Load Times and Browser Consistency	
	Colour Scheme and Effective Navigation	
C2: Visa Information	VISA Issue information and VISA regulations	0.830
	Currency Exchange Rate	
	Custom Regulations	
	Administrative Regulations	
C3: Tourism Destinations	Popular Destinations	0.779
	Spiritual and Religious Sites	
	Religious Information	
	National Heritage, Culture and Arts	
	Wild life Conservations	
	Flora and Fauna Sites	
	Hotel Operators, Tour Operators	
	Adventure Sports and Entertainment	
	Seminar, Events and Conventions	
C4: Geography and Seasons	Seasons around year and Tourism Information	0.849
	Landmass Information (Hills, mountains, terrain)	
	Sensitive Areas Info.(Earthquake, landslides, floods, others)	
C5: Information Assistance	Travel Guide	0.826
	Food and Cuisine	
	Safety Instructions, Quick Dialer (Emergency)	
	Health and Hygiene	
C6:Government Agencies	Ministry of Tourism, Tourism Board, State Tourism, District Tourism	0.946
	Embassy and Consulates	
C7:Tools and Apps	Language Assistance	0.910
	Location finder	
	Windows to mobile Apps	
C8: News and Events	Government Releases	0.852
	Tourism news portal	
	Event popups and event news	
C9: Tourism Business and Assistance Components	Visitors personal profile page	0.964
	Online Query Tools (Chabot's)	
	Tourism Events	
	Experience sharing and blogs	
	Online transaction facilities	
	Languages	
	Photos gallery and clarity	
	Audio, Video content	
	Allowing information and products to be downloaded by users	
	Online ordering/booking for tourism products and services	
	Customer relationships information database (feedbacks, ratings)	
	Information provision according to the profile of the users	
C10: Enough links to relevant websites for information	Eating, living, travelling	0.960
	Wandering, enjoying and shopping	
	Culture and Communities in Nepal	

Notes: α = Cronbach's Alpha

(Table 7) Representing analytical results for domestic respondents for internal reliability

Construct	Item Description	α
C1: What is your impression about the undermentioned contents in Nepal's Official Tourism Website	Design layout	0.848
	Content information	
	Information Architecture	
	Mobile Compatibility	
	Load Times and Browser Consistency	
	Colour Scheme and Effective Navigation	
C2: Visa Information	VISA Issue information and VISA regulations	0.829
	Currency Exchange Rate	
	Custom Regulations	
	Administrative Regulations	
C3: Tourism Destinations	Popular Destinations	0.839
	Spiritual and Religious Sites	
	Religious Information	
	National Heritage, Culture and Arts	
	Wild life Conservations	
	Flora and Fauna Sites	
	Hotel Operators, Tour Operators	
	Adventure Sports and Entertainment	
	Seminar, Events and Conventions	
C4: Geography and Seasons	Seasons around year and Tourism Information	0.844
	Landmass Information (Hills, mountains, terrain)	
	Sensitive Areas Info.(Earthquake, landslides, floods, others)	
C5: Information Assistance	Travel Guide	0.817
	Food and Cuisine	
	Safety Instructions and Quick Dialer (Emergency)	
	Health and Hygiene	
C6:Government Agencies	Ministry of Tourism, Tourism Board, State Tourism, District Tourism	0.831
	Embassy and Consulates	
C7:Tools and Apps	Language Assistance	0.894
	Location finder	
	Windows to mobile Apps	
C8: News and Events	Government Releases	0.836
	Tourism news portal	
	Event popups and event news	
C9: Tourism Business and Assistance Components	Visitors personal profile page	0.890
	Online Query Tools (Chabot's)	
	Tourism Events	
	Experience sharing and blogs	
	Online transaction facilities	
	Languages	
	Official emergency contacts	
	Photos gallery and clarity, Audio, Video content	
	Allowing information and products to be downloaded by users	
	Online ordering/booking for tourism products and services	
	Customer relationships information database (feedbacks, ratings)	
	Information provision according to the profile of the users	
C10: Enough links to relevant websites for information	Eating, living, travelling	0.700
	Wandering, enjoying and shopping	
	Culture and Communities in Nepal	

Notes: α = Cronbach's Alpha

(Table 8) Representation of Correlations between four major components (foreign respondents)

What is your impression about the undermentioned contents in Nepal's Official Tourism Website		Design layout	Content information	Information Architecture	Mobile Compatibility
Design layout	Pearson Correlation	1	.648**	.585**	-.036
	Sig. (2-tailed)		.000	.000	.611
	N	200	200	200	200
Content information	Pearson Correlation	.648**	1	.627**	.239**
	Sig. (2-tailed)	.000		.000	.001
	N	200	200	200	200
Information Architecture	Pearson Correlation	.585**	.627**	1	.153*
	Sig. (2-tailed)	.000	.000		.030
	N	200	200	200	200
Mobile Compatibility	Pearson Correlation	-.036	.239**	.153*	1
	Sig. (2-tailed)	.611	.001	.030	
	N	200	200	200	200
**. Correlation is significant at the 0.01 level (2-tailed).					
*. Correlation is significant at the 0.05 level (2-tailed).					

The correlation table for inbound tourist:

1. Since r(198)=0.648 and p=0.000 (i.e., <0.01), the correlation between design layout and content information has positive and strong association and is statistically significant.
2. Since r(198)=0.585 and p=0.000 (i.e., <0.01), the correlation between design layout and information architecture has positive and strong association and is statistically significant.
3. Since r(198) = -0.036 and p=0.611 (i.e., >0.05), the correlation between design layout and mobile compatibility has negative and weak association but is not statistically significant.
4. Since r(198) = 0.627 and p=0.000 (i.e., <0.01), the correlation between content information and information architecture has positive and strong association and is statistically significant.
5. Since r(198) = 0.239 and p=0.001 (i.e., <0.01), the correlation between content information and mobile compatibility has positive and moderate association and is statistically significant.
6. Since r(198) = 0.153 and p=0.030 (i.e., <0.05), the correlation between information architecture and mobile compatibility has positive and moderate association and is statistically significant

Cronbach's alpha (α) value for the construct. C1: What is your impression about the undermentioned contents in Nepal's Official Tourism Website is 0.848, C2: Visa Information is 0.829, C3: Tourism Destinations is 0.839, C4: Geography and Seasons is 0.844, C5: Information Assistance is 0.817, C6:Government Agencies is 0.831, C7:Tools and Apps is 0.894, C8: News and Events is 0.836, C9: Tourism Business and Assistance Components is 0.890 and C10: Enough links to relevant websites for information is 0.700. It shows that the Cronbach's alpha (α) values for all the constructs are either greater than or equal to the threshold value of 0.7 confirming the internal consistency reliability of the constructs.

4.3 Analysis from the Interview

The study also interviewed some of the domestic respondents to get a deeper understanding of the subject under investigation. They were asked to provide a brief understanding for choosing a particular option. The respondents used simple principle of navigation to locate for subjects of their interest. They rated a question as not available or bad in case they did not find for something they are looking for. The rating of user appeared as a need from the website or a comparison that they made with other tourism websites. The view on interview revealed that if they can find a feature easily available with good information content they rated it as excellent to good. If they found a feature missing or not appropriately located, they rated it as average to bad availability. The ratings were also based on content presentation, clarity, layout, picture quality and other related aspects. The distinction from excellent to good was marginal as they used their relative experiences to rate it.

4.4 Analysis from the tool-based testing

To ensure the technical standard of the official website tool based was carried with two different tools. The results

(Table 9) Representation of Correlations between four major components (domestic respondents)

What is your impression about the undermentioned contents in Nepal's Official Tourism Website		Design layout	Content information	Information Architecture	Mobile Compatibility
Design layout	Pearson Correlation	1	.778**	.893**	.262**
	Sig. (2-tailed)		.000	.000	.001
	N	160	160	160	160
Content information	Pearson Correlation	.778**	1	.756**	.410**
	Sig. (2-tailed)	.000		.000	.000
	N	160	160	160	160
Information Architecture	Pearson Correlation	.893**	.756**	1	.335**
	Sig. (2-tailed)	.000	.000		.000
	N	160	160	160	160
Mobile Compatibility	Pearson Correlation	.262**	.410**	.335**	1
	Sig. (2-tailed)	.001	.000	.000	
	N	160	160	160	160
**. Correlation is significant at the 0.01 level (2-tailed).					

The correlation table shows:
1. Since r(158)=0.778 and p=0.000 (i.e., <0.01), the correlation between design layout and content information has positive and strong association and is statistically significant.
2. Since r(158)=0.893 and p=0.000 (i.e., <0.01), the correlation between design layout and information architecture has positive and strong association and is statistically significant.
3. Since r(158) = 0.262 and p=0.001 (i.e., <0.01), the correlation between design layout and mobile compatibility has positive and moderate association and is statistically significant.
4. Since r(158) = 0.756 and p=0.000 (i.e., <0.01), the correlation between content information and information architecture has positive and strong association and is statistically significant.
5. Since r(158) = 0.410 and p=0.000 (i.e., <0.01), the correlation between content information and mobile compatibility has positive and strong association and is statistically significant.
6. Since r(158) = 0.335 and p=0.000 (i.e., <0.01), the correlation between information architecture and mobile compatibility has positive and strong association and is statistically significant.

depicted some technical faults at different locations that need correction. Working links are important features of a website and missing or break of these links is bad user experience. The visitors get annoyed if these missing links occur on account of any faults that are traced to a typo error in the code, or renaming of a target web page or a web page is removed. The data of broken link and missing webpages of the official webpage is shown below in figure 17 and 18. The missing link and webpages are also problem of good maintenance when a content page is added or removed and as associated information is not updated accordingly. Official portals should avoid these mistakes and errors in their webpages to ensure a high quality of website design and information portal in existence.

Response time is an important aspect of a web design as it evaluates how much time a target machine takes to provide a response. There are two types of check ICMP echo and HTTP head request on port 80 of TCP to evaluate this. The technical test carried out with two testing tools show that some delays in website are above 100 ms, which is a poor

response time as shown in figure 19. The power of a website and its popularity is checked, based data collected from several sources by some of the metrics. Some of the metrics show number of visitors of a web site as one of the important features as this data does not change so quickly for most webs. Some of the tools consider interest of visitors in website over social networks to measure visitor frequency and popularity index. If a visitor looks for related information in social network, it indicates that the website is not popular and the score is 0. The data of popularity is very low for Nepal Tourism Official website, which indicates that this website has very less reach and popularity in the global index.

Broken Page https://www.welcomenepal.com/

Status Code	Position	Broken Link Reference URL
404	Line 691, col. 9	https://www.welcomenepal.com/whats-on/festivals.html
404	Line 735, col. 9	https://www.welcomenepal.com/whats-on/events-calendar.html
404	Line 770, col. 9	https://www.welcomenepal.com/whats-on/contests.html
ConnectFailure	Line 1631, col. 37	http://www.nepalnow.org/stories/5-festivals-to-attend-in-nepal-during-monsoon-season/
ConnectFailure	Line 1974, col. 80	http://www.nepalnow.org

(Figure 17) Representing broken links of website

Broken Page https://es.welcomenepal.com/

Status Code	Position	Broken Link Reference URL
⚠ ConnectFailure	Line 1401, col. 50	http://www.nepalnow.org/news/tourists-and-tourism-activities-away-from-the-storm-hit-area-in-nepals-terai/
⚠ ConnectFailure	Line 1734, col. 80	http://www.nepalnow.org

(Figure 18) Representation of broken page of website

IP Address 162.241.191.99 (www.welcomenepal.com)
ICMP Echo Requests

Client Location	Req. #1	Req. #2	Req. #3	Avg. Time
Prague, Czech Republic, Europe	127 ms	128 ms	127 ms	127 ms
Beauharnois, Canada, North America	45 ms	45 ms	45 ms	45 ms
Amsterdam #1, Netherlands, Europe	114 ms	114 ms	114 ms	114 ms
Amsterdam #2, Netherlands, Europe	113 ms	114 ms	114 ms	114 ms
Roubaix, France, Europe	115 ms	115 ms	115 ms	115 ms
Texas, USA, North America	43 ms	43 ms	42 ms	43 ms
Strasbourg, France, Europe	117 ms	117 ms	117 ms	117 ms
Gravelines, France, Europe	108 ms	108 ms	108 ms	108 ms

(Figure 19) Representation of access time of website

HTTP HEAD Requests

Client Location	Req. #1	Req. #2	Req. #3	Avg. Time
Prague, Czech Republic, Europe	257 ms	256 ms	258 ms	257 ms
Beauharnois, Canada, North America	90 ms	92 ms	91 ms	91 ms
Amsterdam #1, Netherlands, Europe	233 ms	222 ms	227 ms	227 ms
Amsterdam #2, Netherlands, Europe	227 ms	233 ms	229 ms	230 ms
Roubaix, France, Europe	224 ms	223 ms	223 ms	223 ms
Texas, USA, North America	87 ms	86 ms	91 ms	88 ms
Strasbourg, France, Europe	242 ms	243 ms	235 ms	240 ms
Gravelines, France, Europe	216 ms	216 ms	216 ms	216 ms

(Figure 20) Data of http head request for the official tourism webpage welcomenepal.com

5. Conclusions

The study answered all the questions under consideration for the study of official tourism website. The first research question investigated about the present status of the website and it was analyzed that website needs a lot of improvement and restructuring in the design. The contents related to information presentation, design layout, content placement and easy navigability need a revision. The respondents of both class domestic and inbound liked some of the features already existing in the website, which included image quality, color scheme, some information sections and video content. The open tool testing carried out with Jmeter and Amberloom brought the technical qualities of the website

pointing to low popularity, usage and global reach. The test also pointed toward missing links, webpages and poor response time of the host machine.

In response to the second question on what do tourists perceive as an effective tourism web site, it was explored that tourist are very specific about the information present in website. They are more interested to have good and reliable information on websites in their own language. Besides this information on VISA, destinations, hotels, service sectors, transport facilities and payment modes are their first priorities. Once they decide to visit a particular place, they look for more specific information in terms of health and hygiene, cost price, quality, risk and safety, destination peculiarities, internet facilities and other tourism related information. Social site connectivity, mobile connectivity, public opinions and reviews also from an important component of information in websites. Easy navigability with proper distribution of information on the webpage is an important aspect for visitors to use the website.

The third research question investigated features that are important in a tourism website as an effective component. The features that respondents included were design issue, easy navigation, content availability and information architecture. Information on hotel booking, travel guides, safety instructions and information on health and hygiene was either limited or not present. Information on VISA regulations, culture, people, customs, entertainment values, history, art, culture and religion had good content and presentation. The availability of tool for language assistance, payment, route finder, GPS navigator and e-commerce were missing. The personalize of website with user preferences can attract users to use the website and also recommend tourist product and services. This feature was also not discovered by the repondents.

Further, to test the quality, vaibility and authencity of data different statistical tool like the Cronbach's alpha Pearson's correlation, Cross tabulations were performed on the data set which concluded that data is reliable and consistent. The cross tabulation depicted that the data between the two groups matched further strengthening the study. The correlation between four groups of variables depicted positive strong and positive moderate relationship.

The examination of final question about generalization of this study for other tourism websites, it is concluded that the results are common for all tourism websites and can be applied equally. Further, repondents have specifically considered official tourism portal of Nepal to answer the survey which deepens the understanding of tourism requirements and provide very specific answers. The answers on website content, architecture, information and navigation are also specifically answered by tourist in terms of priority. The technical testing and inferences from the literature further strengthen the output of the research. Hence, this also strengthens the claim that it is not specific to the Nepal tourism industry but can be generalized for other tourism economies and other tourism websites design.

6. Recommendation and future work

The current work is explored for tourism industry and considers Nepal as a reference. This work can be extended considering other tourism economies like underdeveloped, emerging and developed economies with more elaborated form of questions and interview sessions with experts working as industry professionals in website construction. A comparative study of existing top tourism websites can help in coming up with an elaborate understanding of tourism websites requirements and help in construction of a standard framework.

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