



The Future of Digital Integration on the Public sector in Lebanon: The case of Hospitality and Tourism

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Abstract: The main issue that this article will be discussing is the situation of Tourism and hospitality sector with in Lebanon. Our focus was on the obstacles facing this industry, its risks, and uncertainties. The main problem that was discussed is the drawbacks that hamper the domestic tourism activities from developing and flourishing. This is extremely harmful to the Lebanese economy and reflects negatively on all other economic sectors. Our study results proved that integration of digital and technological medium into tourism and hospitality activities do have positive effects on revenues and profits of this industry as it make things easier to both domestic and foreign tourists and visitors and creates competitive tourism and hospitality advantages.

Keywords: Big data, data governance, information security, information privacy, compliance, healthcare sector.

1. Introduction

Tourism is defined as entertainment activity accomplished by single individual or group of individuals in order to break life style routine by visiting new places, entertaining and get to know other cultures and civilizations. Sometimes, tourism can be done for medical purposes like traveling to medical spa and resort. Tourism incorporates traveling or displacing from one location to another within the same country or among different countries.

According to United Nations World Tourism Organization (2008), tourism is defined as the following:

"Tourism is a social, cultural and economic phenomenon which entails the movement of people to countries or places outside their usual environment for personal or business/professional purposes. These people are called visitors (which may be either tourists or excursionists; residents or non-residents) and tourism has to do with their activities, some of which imply tourism expenditure ".

Tourism is an important part of the economies of many companies and territories around the world. It offers chances for new job offers and important investments that revive and develop the economic growth. This industry is the focus of many countries and governments, as they consistently seek to find new ways and measures to improve it and increase the generated profits and revenues.

1.1. Research Problem

Tourism and hospitality sector is known worldwide as the "fastest rising sector". (Rodrigo, 2012), its known that this sector has the easiest and fastest return on investments, and different destinations countries are trying to get more revenues and earnings by rising the tourism and hospitality sector.

The decreasing rate of tourists in the last recent years more specifically since the Syrian conflicts has started was remarkable, the following is not limited to foreign tourists but it includes also the weak activity of domestic tourism and trips which reflects negatively on hospitality. Downturn in tourism and hospitality industry is due to many complicated factors related to conflicts and stressful neighborhood, refugee's cases, political disturbances, security threats and much more of unfortunate events in the region. These factors caused damaging effects on the Lebanese economy. The focus of our study is to reveal the troubles that Lebanese tourism and hospitality industry are suffering from specifically in regard to domestic tourism.

Furthermore, Lebanon has the required resources and pillars for successful different kinds of tourism in terms of climate or different historical or entertainment touristic locations and resort. We find these resources lost and not exploited as it should be because there is no enough foreign financing and liquidity for local investments. The importance of this study is that it examines all factors contributing to the recession in inactivity of Lebanese tourism and hospitality industry to propose suggestions and development plans using the advantages and features of technology and digital medium.

1.2. Objectives of this Article

We aim in our research to investigate the problems and discover the barriers that are hindering the Lebanese tourism and hospitality industry from growing and developing, especially in regard to the activity and



state of internal domestic tourism, and finally generate appropriate solutions to these problems and open doors for further researches and improved suggestions.

Our intention is to find and suggest innovative measures that have not been used before in order to enhance Lebanese tourism and hospitality services with lowest possible costs by exploiting the advantages of digital technology features. In order to do so, we will examine available technologies, its advantages and use, how other countries implemented to enhance their domestic tourism and hospitality and finally its relevance to our case study.

Hence, this research aims to raise awareness about the decreased level that tourism and hospitality has reached, and the role that digital technology can play in fixing out this situation. We hope that the results of our proposed research study can help Lebanon and the ministry of tourism specifically to restore lost chances in the tourism and hospitality sector and reactivate the activity of internal domestic tourism and thus compensate the economic losses and the overall Lebanese economy.

1.3. Research Hypothesis

After observing the problems and the weaknesses of Lebanese domestic tourism and formulating the research problematic, we now should formulate appropriate hypothesis that direct the rest stages of our research; where data is collected to prove or reject these hypothesis.

Our previous knowledge and experience drive us to impose those technological inventions and digital innovations can help in activating domestic and foreign tourism and in raising the quality level of different hospitality services. This is recognized by the experience of surrounding countries and others experiences in our environment. Whereas traditional ways such travel and tourism agencies, or manual reservations process for accommodation may be much more expensive and complicated to tourist. Hence, we present here the formulated hypothesis as follow:

H₀. *The digital integration has no effect on the Lebanese tourism and hospitality industry.*

H₁. *The digital integration to Lebanese tourism and hospitality increase the effectiveness and revenues of domestic tourism.*

The data will be collected and classified as relevant or irrelevant on the basis of what serve to validate or reject these formulated hypotheses, furthermore, analysis tools will be directed in the form that reveal the significance of digital medium to Lebanese internal tourism and hospitality industry.

1.4 OVERVIEW OF THE TOURISM AND HOSPITALITY SECTOR

Tourism and hospitality industry is considered to be the fastest growing sector. It represents an important foundation for the economy of many countries.

The UNWTO define tourism as "the activities of persons traveling to and staying in place outside their usual environment for not more than one consecutive year for leisure, business and other purpose "; whereas domestic tourism is seen to be within the same previous definition but with restriction that the visitors or tourists should be residents of the tourism destination country.

There is four different components of tourism, the tourist itself which the visitor of a touristic place or entertainment resort for different purposes, the tourism business that provides touristic goods, hospitality services and everything that satisfy the tourists demand. The government is considered to be one of the tourism components because it sets down tourism policies, regulations and development plans, in addition to the host community that interacts with tourists, specifies what is acceptable and what is not and offers the suitable ambiance. (Clarice Kangut, 2012)

Tourism industry usually consists of three sectors: the attraction sector that consists of sightseeing, historical places, travel documentary or advertising, the accommodation sector that includes the functions of travel agencies for example hotel reservations and booking or entertainment tours and programs, and finally transport sector such as touristic cars and buses rental.

Tourism and hospitality sector has enormous economic benefits because it provides new employment opportunities and forms new sources of income, it also refreshes the economy by stimulating the local markets and generating more liquidity in it, moreover, it permits to have more of foreign exchange operations and it contributes in increasing the gross national product.

As hospitality is highly related to guests and visitor's satisfaction, it includes two parts, the first part is tangible and is about the product or service provided such as the actual hotel room offered while finishing the accommodation service process and the second is about the feelings, impressions that served visitors have experienced and the feedback from them. (Murray Mackenzie, Dr. Benny Chan ,2009)

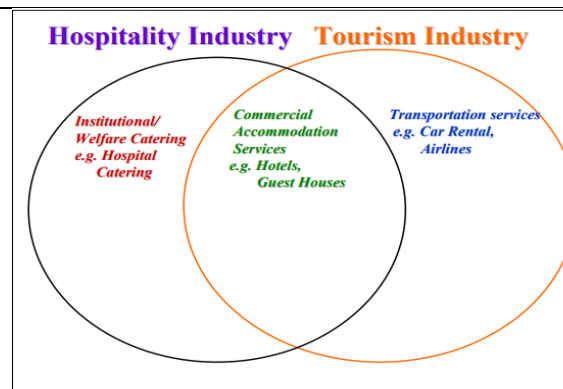


Figure 1-Relationship between hospitality and tourism industries.

Industries, tourism and hospitality are interrelated because they offer the one another complementary services.

2. Literature

2.1 World Wide Tourism Industry

Tourism industry is considered to be the fastest growing and largest industry among the whole world industries, due to its enormous contribution to global economies worldwide. The economic contribution of this industry can take different forms that are direct such as accommodation services, food & beverage services, retail trade, and transportation services and cultural, sports & recreational services. While indirect form is constituted from revenues from taxes on goods and services supplied to tourists, the turnover of the supply of these goods which activates the commerce, the foreign exchange earnings and the creation of employment opportunities. Finally the induced form includes the overall employment and wages income effects. According to "Statista" website, the different contribution forms of this industry to global economy has reached 7.6 trillion U.S dollars in 2016, whereas the direct impact only of this industry to the global economy reached up till 2.3 trillion U.S dollars in the same year. The below histogram was provided by "Statista" website for statistics, it shows the direct and total impact including direct, indirect and induced contributions of travel and tourism industry on the global economy for the years ranging from 2006 to 2016.

As illustrated by the chart below, travel and tourism total contribution reached up till 7 trillion U.S. dollars. World tourism organization (UNWTO) stated that especially developing countries are the most countries that benefits from sustainable tourism. These countries include Brazil, China, and South Africa.

Thus, we notice nowadays that emerging developed countries are continuously working on enhancing their economic and social situations, by paying more attention to their provided tourism activities and services, and by investing in different tourists attraction projects, because they realize the advantages and revenues that such industry can drive back to the economy, to the extent that some developing countries are relying mainly on tourism industry as the main income source.

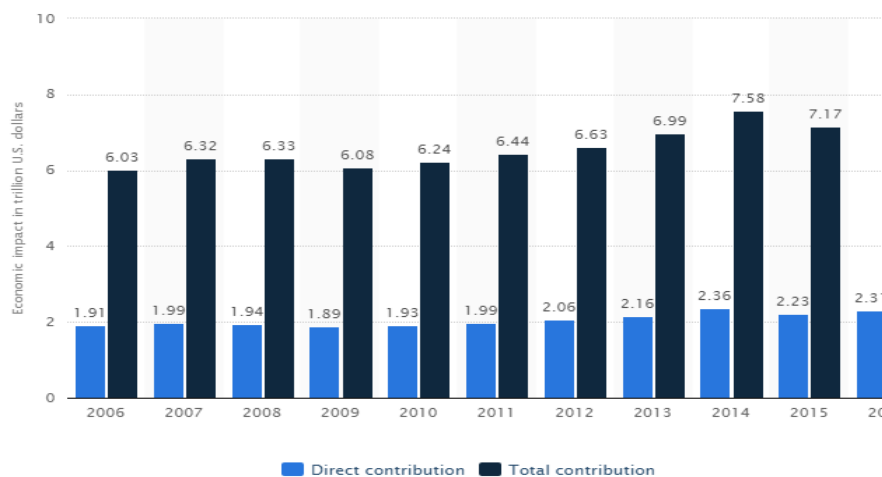


Figure 2- Travel & Tourism industry contribution to the global economy in dollars.



Although, many countries especially developed ones, are recently putting more efforts and sustainable plans to develop and improve their tourism sectors and services. This is because they realized the importance of investments in this sector and the amount of profits and revenues driven back to all economic sectors.

2.2 Role of Information Systems in Tourism

Nowadays, the increased competition, the accelerated rate of changes and the critical need to efficient and effective decision making in a timely fashion had made the information systems necessity in different business sectors. Information systems includes different hardware and software programs, that all together forms a computer based systems to assist managers in completing their managerial roles and help different levels of employees in completing their tasks. The main objective of such systems is to facilitate the business operation no matters of the industry, by making the information updated and available whenever it is needed. Information systems provides essential tools for organizing, decisions making, evaluating and controlling different information and business processes among departments.

To understand the role of information system in tourism and hospitality sector, we must first understand the nature of this sector and what it offers. Hospitality is defined by the "business of helping people to feel welcome and relaxed and to enjoy themselves" (Discover Hospitality, 2015, 3). Similar to other business sectors, the customer satisfaction is the essential key for the tourism and hospitality industry success. Adopting different information systems and applications technologies facilitates the business process by enhancing the quality of services offered to customers, moreover when it is used wisely; it permits to create a distinctive customer experience which is very important to achieving customer value and satisfaction.

In addition to the above, information systems can organize information, process it and make it available to different employees in travel agencies, hotels, and different hospitality institutions.., this will make these institutions able to create the operations excellence, as implemented technology will permit to do work efficiently and save time to exchange information with minimal costs and expenses.

Once operations excellence is created, tourism and hospitality institutions using information technology can achieve competitive advantage over other institutions. Information systems have an important role in operating and managing tourism business processes on several levels. On first level, information processed by these systems are made available to all employees so they can distinguish different customers preferences, accelerate their decision making and offer better hospitality services. On second level, these systems can facilitate processes to tourists and help managers and employees tracking and controlling these processes like online booking services. (Rob Law, Rosanna Leung, DimitriosBuhalis, 2008).

A. Advantage of IS on Tourism

Information systems technology is a medium for making business data and information available whenever it is needed. It guarantees, increase and make access to information easier for tourists and employees of the tourism and hospitality industry. For example, hotel booking mobile applications permits tourists to check out different offers and wide choices of reservations from one side, and hotel owners to promote and market their offerings, thus information is exchanged easily and market offering will meet the customer demand. Thus, technology can develop the attraction sector of the tourism industry; using advertising videos for touristic locations, documentary on different social Medias or internet travel websites. As for accommodation sector, mobile booking and reservation applications simplified a lot the reservation process and widened the choices such as "Trivago" mobile app for hotel room reservation; in addition to that, the online reservation sites facilitated the communication between travel agencies, individual tourists and hotels employees, and organized the managerial functions and processes in providing better quality services to customers.

Technology can help tourism institutions in managing their relationship with their customers, by making contact with their preferred customers and contributing in expanding to reach new potential customers and thus acquiring new ones. According to Kim & Ham (2007), information technology influences the experiences and behavior of tourists. By shortening the relationship between tourism and hospitality institution and tourists, a competitive advantage is gained among other institutions. Moreover, customer value concept is actually applied and the customer gains a higher distinctive service with the best quality caliber, this influence positively on the strategic management and marketing planning. Thus, customers will obtain the recognition they need, with the opportunity to personalize the required services. (DILNA VIJAYAN, 2016)

Moreover, information systems enable to control operations & processing transactions, thus reducing operating costs. An example of that is the touristic transport buses equipped with radio communication systems, which enable the tour guide to give live feedback, and updates to the company and facilitates the control over the tour management and coordination.



2.3. Innovative technologies to serve tourism and enhance hospitality

Advances in information technology have turned upside down all aspects of our daily lives; it changed different businesses and sectors including the tourism and hospitality sector.

In fact, information technology systems are providing managers, different employees' levels and customers with basic necessary tools for disseminating information across institutions and helping them out for making the ultimate best decisions when it is needed.

Nowadays, investing in technology is always gainful and productive, because it drives back return and profits to the business. Aside simplifying the different touristic processes from reservation, booking, exploring and discovering touristic areas that tourists may be interested to visit, the information technology has a major role in enhancing the quality level of provided hospitality services. Hence, almost all hotels, restaurants and touristic places are providing their visitors with free wireless network as a part of hospitality services because of its necessity to tourists and visitors and to satisfy their needs.

In addition to the above, the usage of security systems from cameras to fire and intrusion security alarms are also part of using innovative technologies to serve and enhance the hospitality quality. As such systems, provide visitors and tourists with satisfaction and safety feeling which raise the confidence level in institutions that use such technologies and thus increasing customer loyalty and profits. We will cite different innovative technologies that we think it will help the Lebanese tourism to flourish and activate the internal tourism also.

2.4 A. Geographical IS

GIS is the abbreviation of geographical information system that is defined by Preetvanti Singh (2015) as "a tool to acquire, explore and analyze the geo-spatially distributed objects and their associated attribute information that can improve decision-making". Geographic Information System (GIS) and Travel Geographic Information System (TGIS), plays an important role in tourism management as it offers services to geographic research and decision-making by providing data collection, storage, processing, spatial analysis services. The main function of such system is to conduct tourism information management and producing a comprehensive clear thematic map for different touristic locations. Aside providing historical, geographical and different kind of information about a certain place, the system can provide each location with panoramic view and associated pictures. It sets its exact map locations with the ability to generate time estimation to get from and to the specified location. The system requires a tourism geographic information database where all historical and touristic locations in Lebanon should be recorded in order to disseminate different information about it.

Such system if implemented in Lebanese travel agencies and online sites, combined with GPS services will update and enhance data collection ability of the system, and it will raise up the internal tourism rate; as it will permit not only foreign but Lebanese visitors also to discover different touristic locations of different regions in Lebanon with all needed associated information displayed. Expert systems can be combined also to enhance travel problem solving and decision making capabilities of the system (Wei Wei, 2012)

Lebanon tourism needs also to work on setting sites for all touristic and historical places that visitors may be interested to visit on Google map, with clear defined routes to get there from different regions. An example of that is the "Virtual Tourism" campaign that is a part of "Heland" project. The journalist Nicole Tohme wrote in "Al-Nahar" newspaper (2016), that "Hetland" project is managed by the faculty of tourism of the Lebanese university in cooperation with the ministry of tourism and support from the European Union.

The project aims to set all important touristic Lebanese locations on Google map, where it will be easier for tourist in or outside Lebanon to check that location with all details related to restaurants, guesthouses, hotels, and photos of the place with different activities that can be done. The following is done for "Bkassine" village and all related info is published using dedicated online website for this project "<http://www.fthm-heland.com/>". Once this is done to all Lebanese location, the internal and external tourism will be more refreshed, as using information technology in this form, will help in sharing information about such places so people can intend to go visit. In addition to the above, the responsible or owners of touristic places that should attract visitors from inside and outside Lebanon, should benefit from the power of social media in advertising, promoting and sharing information about the place. Social media are free tools for marketing such places and sharing information, picture and locations. The "Check-in" feature and the "Reviews" feature from clients are the most important for other tourists and visitors, as it permits to share information about the location and the experience of other tourists and visitors which can influence on other client attraction and impression.

B. Mobile Apps

Mobile application is a recent trend in business world. It reflects the use of latest technology to improve different businesses and industries.



The use of these applications by the public and especially the tourists has increased due to its efficacy, time saving quality and easy performance.

The Lebanese tourism and hospitality industry is unconscious to the role of technology innovations and its impacts on businesses and it still ignoring the importance of such innovative technology in enhancing the hospitality quality and tourism activity. The lack of such invention in the Lebanese tourism field reflects negatively on this activity in Lebanon since the absence of this technology complicate the process of reservations and other on the tourists. In addition to that, the mobile applications are a great medium to inform the Lebanese the interesting places that they should visit. Such innovation will activate the internal tourism as its main problems that there is no conscience of such places across different Lebanese regions and villages. This is due to missing appropriate marketing campaign and advertising so people can come and visit.

An example of that is the "Trivago" mobile application that offers many reservation features and offers to clients where it aims to meet the requirement and needs of each client.

C. Hospitality & Tourism Information System (HTIS)

Nowadays, maintaining a strength relationship with customers is the key to business success. Emerging trends impose that the customers' needs and satisfaction are the business core and focus.

Implementing different information systems that enable hotels owners to understand the customer needs and estimate what services can satisfy them and how to personalize each service to target individuals, will enhance the quality of services offered and the overall hospitality while facilitating the employees jobs.

We propose HTIS that is the abbreviation of Hospitality and Tourism Information System. Such systems should be implemented in different Lebanese hotels, restaurants and different hospitality institutions. HTIS provides hospitality managers tools needed to boost their businesses and profits using technology. Taking advantage from technology will return higher profits and higher rate of customer return and loyalty.

HTIS should include a huge database where every client is registered with its associated basic information; the system should capture the preferred orders and habits of each client and store it among data. These data can be processed by system to forecast the needs and services pattern for each customer so the employee offering services can better serve client.

HTIS is an effective way to strengthen consumer relationships with hospitality and tourism businesses owners.

The system can use also personalized software profiling that first cluster customers with similar needs or orders, then process collected data and generate estimation of the more profitable customers and their associated lifetime value and earnings generated by them.

3. Methodology

In this part, we will elaborate the process of data collection, and the different methods used to gather valuable information to complete our study. This part is critical to the research because it includes gathering data, choosing the relevant ones that will be processed, analyzed and interpreted in order to answer our questions and finally reach reasonable conclusions. The main focus here is about collecting the appropriate needed and valuable data that will reflect on the importance of optimizing Lebanese tourism and hospitality industry especially internally by implementing different digital information system technologies. We aim in our research to reveal the problems that Lebanese tourism and hospitality industry is facing and how we can get rid of these obstacles using digital medium to improve the overall state of this important sector and make it able to generate more revenues and profits.

The adopted methodology in our research stated to use a mix type of data, the quantitative and qualitative types. In fact, we need to evaluate the quality of tourism and hospitality services with and without using of information system to highlight its main advantageous role in businesses, to do so, we must collect the people's opinions and evaluation for general food and accommodation services in Lebanon, in addition to their attitude regard the overall tourism in Lebanon. Simple questionnaire and semi-structured interview was designed to discover the Lebanese tourism behaviors, and describe the different hospitality services that Lebanese has experienced (prices, reservation process, overall satisfaction,..) and to evaluate and gather different viewpoints about the role of tourism ministry and suggestions that in opinions of the interviewees will enhance and encourage Lebanese citizens to organize and participate in domestic tourism trips.

Moreover, numbers and statistics measures are used to measure quantitatively and economically the state of tourism and hospitality especially the internal one and the effects of integrating digital medium to improve it. Hence, structured surveys are designed to measure variables such as the associated income level, the tourism purpose, the knowledge of Lebanese about the different tourist places in Lebanon and the appropriate digital devices used while accomplishing tourism activities or benefiting from any hospitality services. These variables are determined in order to study its significance to our already set hypothesis to validate it or reject it.



This information will be processed via statistical software and visualized using graphical charts and histograms for later interpretations and analysis. The research design is of explanatory type as it explains the relationship between informatics and technology and the improvement resultant in activating the internal tourism activities and providing a superior quality of the overall tourism and hospitality services. A copy of the completed questionnaire and survey are attached to the appendix at the end of this report.

4. Results and Discussion

The focus of our data analysis is to reveal the real causes and problems of Lebanese tourism and hospitality industry, and find how digital integration can help this sector to overcome these difficulties and activate the domestic tourism.

The age of different participants in our survey ranged as represent the following histogram. 59.09 percent of all participants are of youthful people because their ages ranged between 21 to 29 years old.

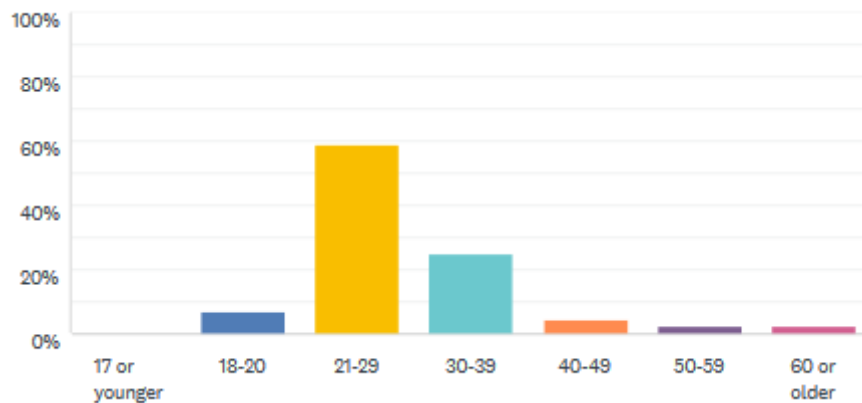


Figure 3- Age range of the survey participants.

After measuring the demographic factors of age and income, we measured the occurrence of visiting touristic places in Lebanon. We aim here to measure approximately the level of domestic tourism in Lebanon, and reveal its current situation. The responses on that question ranged mainly between two extremes that we will figure out its causes and explain this difference in later sections of our survey. 31.82% of responses were "once a year" while other 31.82% were "on every possible chances". Examining individual responses, we noticed that most of individuals that choose "on every possible chances" in this question were of high income level according to previous question, which lead us to analyze the relationship between these two measurements. The purposes of tourism and hospitality activities are measured too, and represented by the below pie chart.

The usage of technology tools, social media and internet websites for tourism and hospitality purposes are measured also and represented as follow.

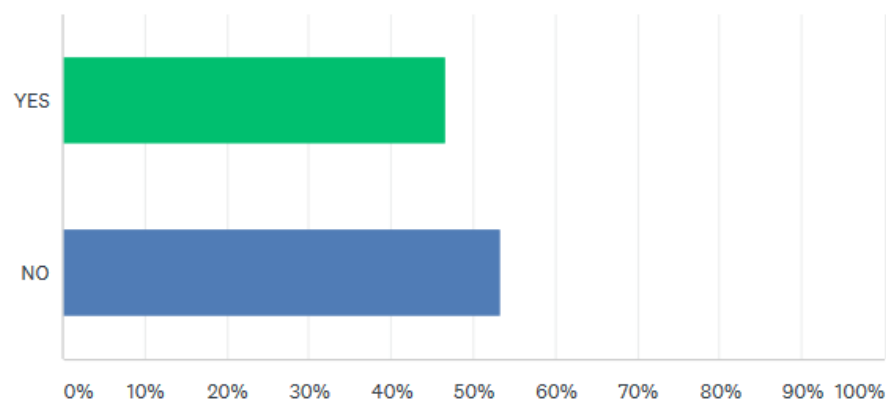


Figure 4- Technology usage in Lebanese tourism & hospitality industry.



46.67% of participants in our survey used online travel websites to benefit from domestic trips, offers and packages, while 79.07% of these participants used social media tools to discover, recommend or rate different hospitality centers in Lebanon.

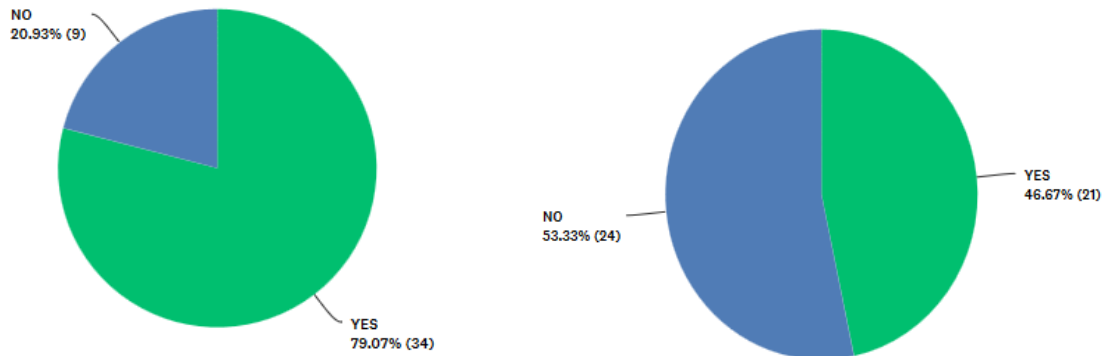


Figure 3- Social media & online website usage.

It was highly important to study the sources from which the Lebanese tourists get knowledge from, to get information about the current situation and to know which medium is more effective in dispersing info and appropriate advertisements.

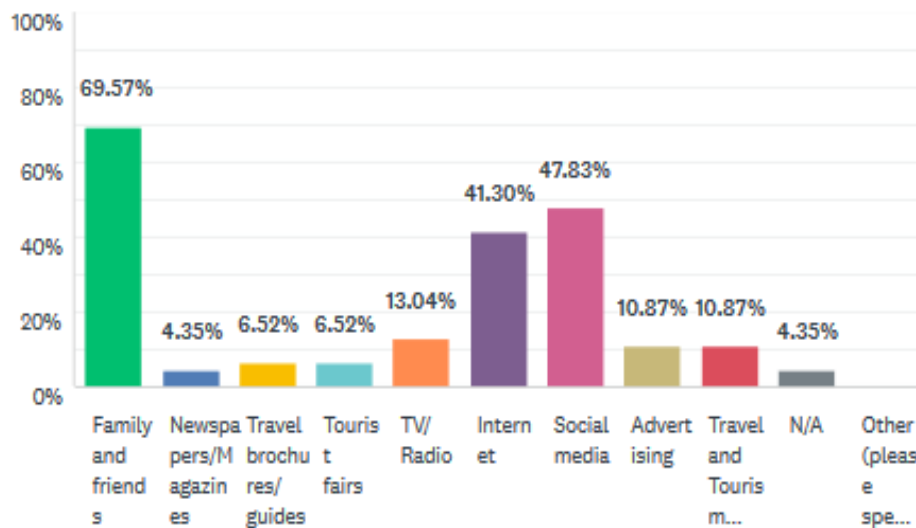


Figure 4- Sources of touristic info knowledge.

The results show that the majority of responses get information about touristic places in Lebanon from family and friends sources with percentage of 69.57%. This source is important although, advertisements via TV/radio, newspapers, magazines and most importantly the trendy social media features and benefits sources must have higher percentage which is not the case. Thus, we revealed a dereliction in shedding lights and formal informing from eligible sources about the important touristic places in Lebanon.

5. Conclusions

At the end of our research, we should remind that the Lebanese tourism and hospitality industry is one of the most important Lebanese economy pillars. Although of the tough economic crisis and political conflicts that the country is passing through, and their negative and even destructive effects on this industry, where the number of tourists especially from Gulf countries has significantly decreased and tourism firms activity and business has slowed down, we can see that Lebanon is able to survive these crisis and rise again because it owns the eligible touristic, cultural and eco-environmental factors that attracts different tourism types. "Reduction in growth rates in the second and third quarter where the summer touristic season was severely damaged. Leading



to high strike down on this sector new recent 20% decline was added in the first half of 2013 in contrast to that of last year,"

The government should set up a sustainable development plans that aim to exploit Lebanese tourism components and enhance the tourism and hospitality state, this should include the airline tickets prices and reservation processes, the hotels and accommodation regulation and the food safety and beverages quality services, in order to revive the sector and resuscitate it.

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